EXAMINATION OF THE VALIDITY OF THE DENVER II CHILD DEVELOPMENT MEASUREMENT TOOL AMONG CHILDREN 24-36 MONTHS AGAINST THE GOLD STANDARD OF BAYLEY SCALE III EDITION IN BUTAJIRA, ETHIOPIA

BY: HELEN TESFAYOHANNES (BSc)
ADVISORS: MULUGETA BETRE (MD, MPH, FELLOW), ABIY SEIFU (MPH) AND CHARLOTTE HANLON (MD, PSYCHIATRIST, PHD)

A THESIS SUBMITTED TO THE SCHOOL OF PUBLIC HEALTH IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF PUBLIC HEALTH IN REPRODUCTIVE AND FAMILY HEALTH

June 2017
Acknowledgement
I would like to thank God for all His blessings. I am thankful for Addis Ababa University School of Public Health and Department of Psychiatry (College of Health Science) for providing me funds to carry out this study. I am grateful for my advisors Dr. Mulugeta Betre, Mr. Abiy Seifu and Dr. Charlotte Hanlon for their unreserved contribution and support throughout the research process. My gratitude extends to Dr. Teklu Gemechu for guiding me on how to use the Denver II tool and to Dr Girmay Medhin for helping me in estimating the sample size, during the data collection and analysis.

I am thankful for all the children and their caretakers who participated in this study. I would like to thank my data collectors, supervisor and enumerators, without whom this research would have not been realized. I am very grateful for my friends and family for all kinds of support they have given me.
Table of Contents
Acknowledgement .......................................................................................................................... II
List of figures ................................................................................................................................. V
List of tables ................................................................................................................................ VI
Acronyms ..................................................................................................................................... VII
Summary .................................................................................................................................... VIII
1. Introduction ................................................................................................................................. 1
   1.1 Background ........................................................................................................................... 1
   1.2 Statement of the problem ...................................................................................................... 2
   1.3 Rationale and Significance of the study ................................................................................ 4
2. Literature review ...................................................................................................................... 5
   2.1 Magnitude of child development problems and the associated factors............................... 5
   2.2 Child development in Ethiopia ............................................................................................ 6
   2.3 Child development assessment tools ..................................................................................... 7
      2.3.1 Bayley Scale Infant and Toddler Development III edition (BSID III) tool ..................... 8
      2.3.2 Denver II tool ................................................................................................................ 8
      2.3.3 Utilization of BSID III and Denver II tools .................................................................... 9
3. Objective ................................................................................................................................... 10
4. Methods ................................................................................................................................... 11
   4.1 Study area ............................................................................................................................ 11
   4.2 Study design ......................................................................................................................... 12
   4.3 Source and study population ............................................................................................... 12
      4.3.1 Inclusion criteria ........................................................................................................... 12
      4.3.2 Exclusion criteria ........................................................................................................... 12
   4.4 Sample size .......................................................................................................................... 12
   4.5 Sampling procedures .......................................................................................................... 13
   4.6 Data collectors and collection procedures ......................................................................... 14
   4.7 Operational definitions ...................................................................................................... 16
   4.8 Variables ............................................................................................................................. 17
   4.9 Data Analysis procedures .................................................................................................. 17
   4.10 Data quality management ............................................................................................... 18
4.11 Ethical considerations ....................................................................................................... 19

5. Results ................................................................................................................................... 20
  5.1 Socio-demographic characteristics...................................................................................... 20
  5.2 Administration of the BSID III and Denver II .................................................................... 22
    5.2.1 Descriptive analysis of BSID III .................................................................................. 23
    5.2.2 Descriptive analysis of Denver II ................................................................................. 24
    5.2.3 Identification of children at risk of developmental delay ............................................. 24

6. Discussion .............................................................................................................................. 27

7. Conclusion and Recommendations ....................................................................................... 32
  7.1 Conclusion........................................................................................................................... 32
  7.2 Recommendations ............................................................................................................. 32

8. Reference .................................................................................................................................... 33

9. Annex ..................................................................................................................................... 40
  Annex 1. BSID subscale percentage scores of children in Butajira Health and Demographic Surveillance system, 2017 ........................................................................................................... 40
  Annex 2. Denver II subscale percentage scores of children in Butajira Health and Demographic Surveillance system, 2017 ........................................................................................................... 47
  Annex 3. Scatter plot of Bayley Scale Infant and toddler Development III and Denver II children’s subscale scores ............................................................................................................. 49
  Annex 4. English version questionnaire.................................................................................... 51
  Annex 5. Amharic version questionnaire.................................................................................. 128
List of figures

Figure 1. Map of Southern Nations, Nationalities and Peoples’ Region: and Mesken and Mareko Districts ................................................................. 11
Figure 2. Sampling Procedure of the Study, Butajira Health and Demographic Surveillance System, 2017 .............................................................. 14
Figure 3. Flow Chart of the Final Study Units of Children in Butajira Health and Demographic Surveillance System, 2017 ........................................ 20
Figure 4. Box plots of Bayley Scale Infant and Toddler Development III subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ...................................................................................... 23
Figure 5. Box plots of Denver II subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) .................................................. 24
Figure 6. Percentage of children that passed Bayley Scale Infant and Toddler Development III and Denver II, 2017 (n=121) .......................................................... 25
Figure 7. Bayley Scale Infant and Toddler Development Cognitive Item Percentage Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................ 41
Figure 8. Bayley Scale Infant and Toddler Development III Expressive Communication Item Percentage Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................... 41
Figure 9. Bayley Scale Infant and Toddler Development III Receptive Communication Item Percentage Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 42
Figure 10. Bayley Scale Infant and Toddler Development III Fine Motor Item Percentage Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................... 42
Figure 11. Bayley Scale Infant and Toddler Development III Gross Motor Items Percentage Score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) .......................................................... 43
Figure 12. Denver II Personal Social Items Percentage Score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 47
Figure 13. Denver II Fine Motor Items Percentage Score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 47
Figure 14. Denver II Gross Motor Items Percentage Score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 48
Figure 15. Denver II Language Items Percentage Score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 48
Figure 16. Scatter plot of Bayley Scale Infant and Toddler Development III and Denver II Language Subscale Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) .......................................................... 49
Figure 17. Scatter plot of Bayley Scale Infant and Toddler Development III and Denver II Fine Motor Subscale Scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) .......................................................... 49
Figure 18. Scatter plot of Bayley Scale Infant and Toddler Development III and Denver II Gross Motor Subscale of children in Butajira Health and Demographic Surveillance System, 2017 (n=121) ........................................................................ 50
List of tables

Table 1. Socio-demographic characteristics of study sample of children residing in Butajira Health and Demographic Surveillance System, 2017 (n=121)........................................................................................................22

Table 2. Sensitivity, Specificity, Positive Predictive Value and Negative Predictive Value of Denver II as compared to Bayley Scale Infant and toddler Development III among children residing in Butajira Health and Demographic Surveillance System, 2017 (n=121).................................................................25

Table 3. Correlation of Denver II and BSID III scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)........................................................................................................................................26
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAU</td>
<td>Addis Ababa University</td>
</tr>
<tr>
<td>ASQ</td>
<td>Age and Stages Questionnaire</td>
</tr>
<tr>
<td>BSID</td>
<td>Bayley Scale of Infant and toddlers Development</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
</tr>
<tr>
<td>DSS</td>
<td>Demographic Surveillance System</td>
</tr>
<tr>
<td>FM</td>
<td>Fine Motor</td>
</tr>
<tr>
<td>FMOH</td>
<td>Federal Ministry of Health</td>
</tr>
<tr>
<td>GM</td>
<td>Gross Motor</td>
</tr>
<tr>
<td>HDSS</td>
<td>Health and Demographic Surveillance System</td>
</tr>
<tr>
<td>HSTP</td>
<td>Health Sector Transformation Plan</td>
</tr>
<tr>
<td>ICC</td>
<td>Intra Class Correlation</td>
</tr>
<tr>
<td>LMICs</td>
<td>Low and Middle Income Countries</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Developmental Goals</td>
</tr>
<tr>
<td>NPV</td>
<td>Negative Predictive Value</td>
</tr>
<tr>
<td>PEDS</td>
<td>Parents Evaluations Development Status</td>
</tr>
<tr>
<td>PPV</td>
<td>Positive Predictive Value</td>
</tr>
<tr>
<td>PS</td>
<td>Personal Social</td>
</tr>
<tr>
<td>SDG</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SDI</td>
<td>Sustainable Development Index</td>
</tr>
<tr>
<td>SNNPR</td>
<td>Southern Nations, Nationalities and Peoples’ Regional state</td>
</tr>
</tbody>
</table>
Summary

Background: Globally there were 249 million children under the age of five years who were at risk of poor development in 2010. Ethiopia is one of the top ten countries with children at high risk of developmental problems. To assess and monitor the developmental status of children, there is a need for reliable and valid measures. The Bayley Scales of Infant and toddler Development III (BSID III) tool is a rigorous measure of child development that has been widely used across different cultural settings. However, the BSID III is resource intensive necessitating the need for simpler tool for large-scale use.

Objective: To evaluate the concurrent validity of Denver II in assessing the development of children aged 24 to 36 months who lived in the Butajira Health and Demographic Surveillance System (HDSS), using the BSID III as a gold standard.

Methods: The study design was a community-based, cross-sectional concurrent validation design. The study was conducted in the Butajira HDSS, Southern Nations Nationalities and Peoples’ Regional state on children aged 24-36 months who were selected randomly from a sampling frame obtained from the HDSS. Data were collected from March- April 2017. The Denver II and BSID III were administered by independent groups of trained and reliable data collectors who were masked to the status on the other measure. Order of administration was randomized. STATA version 14 was used for analysis. The sensitivity, specificity, positive predictive value and negative predictive value of the Denver II against the BSID III were calculated.

Result: A total of 121 children age 24-36 months with their caregivers participated in this study. The response rate was 91.6%. Sixty (49.6%) of the children were male. One hundred seventeen (96.7%) children lived with their biological parents, 3 (2.5%) lived with relatives and 1 (0.8%) lived with unrelated care takers. Using BSID III as the gold standard, the sensitivity of Denver II was 99% for fine motor, 80% for gross motor and 79% for language subscales. The specificity was 12% for fine motor, 11% for gross motor and 39% for language subscales. Total scores on the Denver II had a correlation coefficient of 0.26 for gross motor, 0.42 for fine motors and 0.57 for language subscales with the corresponding BSID III subscales.

Conclusion and recommendation: It is important to be able to detect developmental delays in a timely manner so that early intervention can support the child to fulfill their developmental potential. In this rural Ethiopian setting, the Denver II showed potential as a brief screen for developmental delay, with high sensitivity; however, the low specificity means that there will be many false positives. This may limit application of the tool in routine settings. Further studies of adaptation and of short child development measurements are needed.
1. Introduction

1.1 Background

Child development is the progress that a child makes in different aspects, including bodily, social, mentally and emotionally, from the moment of birth up to adulthood. Development of the brain and central nervous system can be assessed by checking gross and fine motor skills, communication skills, social and personal activities and cognition. Children can be at risk of poor development due to several factors, but development is particularly affected by under nutrition (stunting) and extreme poverty in Low and Middle Income Countries (LMICs). An estimated 249 million children under the age of five years around the globe live in extreme poverty or suffer from stunting, which accounts for 43% of the total children living in LMICs.

To assess, plan and implement interventions to promote optimal child development, validated measurements of development are needed for local settings. The concept of validity was defined as “an expression of the degree to which a measure actually measures what it is supposed to measure”. Validity is conceptualized as having different components, including; construct validity, content validity and criterion validity. Criterion validity is the extent to which a new measure measures the same phenomenon as an external criterion of the phenomenon under study, often referred to as a ‘gold standard’. Criterion validity is classified into two groups: concurrent validity and predictive validity. Concurrent validity is comparing the two measurements at the same time with one another. Predictive validity is the ability of a test measurement to predict the future criterion.

This study used concurrent validity to validate a brief child development measure in children living in the Butajira and Health Demographic Surveillance System (HDSS). It focused on two child development measures that are used commonly across the globe, including in low-income countries and specifically in Ethiopia. These are the Denver II and the BSID III. The Denver II was adapted and standardized in Jimma, Ethiopia. The BSID III was adapted and validated in the Butajira HDSS, Ethiopia. This and other studies used BSID III tool as the gold standard. As Denver is a briefer measure than the BSID III and is both easier to administer and has less reliance on expert administrators, it is of value to examine the performance of the Denver II against the gold standard measure and determine concurrent validity.
1.2 Statement of the problem

According to the Convention on the Rights of the Child Articles 6 and 27, children have “the right to live and develop well with sufficient environment to enable them to grow bodily and psychologically”. But 43% of under five years old children around the globe in the year 2010 did not attain their full potential, primarily due to stunting or extreme poverty. Most of these children who face growth faltering are found in low and middle-income countries. Concerning child health, the Ethiopia’s Health Sector Transformation Plan (HSTP) and the National Strategy for Newborn and Child Survival in Ethiopia 2015/16- 2019/20 of Ethiopia focuses on reduction of child mortality and morbidity from infectious diseases and malnutrition. The plans place little emphasis on the cognitive and social development of children. The National Mental Health Strategy emphasizes on child developmental problems and that mental illnesses should have screening programs and early interventions should be implemented. However in the document, the list of these interventions and how they were to be implemented is not clearly stated. Training materials for upgrading of community-based health extension workers include a session on child development, but implementation has been limited. Since health cannot be complete without mental health, due attention is needed in this area. Systematic and standardized child development assessment has not been an integral program and hence very little is known about the situation in Ethiopia.

Evidence indicates that there is a direct relationship between child health and adult health. Poor child health leads to poor health during the early adulthood period. The adult years are the most productive years of human life. Being ill during this period leads to missed days out of work and daily activities. Even if the person does not stop work altogether, they may not be productive during illness periods. This can affect the earning of a person and the economy of a country in general. Poor child development has an effect on the earning potential of a person as an adult. Both poverty and short stature (stunting as a measure of deficiency malnutrition) of the child are related to fewer years of schooling. Short stature of the child and poverty are estimated to result in a loss of earning of 30.1% as a grown person. The average loss of earning due to poor child development around the world is estimated to be 19.8%.
Across countries there are differences in cultures and ways of living. This may lead to different scores of child development measures by the same tool. Most child development assessment tools are developed in Western settings. (15-19) To use these Western developed tools, adaptation and standardization in the local setting is mandatory for the tools to give valid scores.

To assess child development, identify developmental problems and plan interventions, standardized tools, which have been validated in the local setting, are needed. There are many child development assessment tools used globally. These measures assess child development by putting the child in a test situation, getting the caretakers or the teacher to rate the child and by observing the child while he/she is doing daily activities. These measurements are classified into two types based on their purpose of use; those measurements that are used for screening purposes and measurements that assess comprehensive ability of the child. The Denver II is an example of a measure used for screening purpose while the BSID III is used for screening and diagnosing child developmental problems. The Denver II has some advantages over the BSID III because it is less complicated to administer, is applicable to a wider age group and takes less time to administer than the BSID III. A potential disadvantage of the Denver II is that it relies on maternal self-report rather than objective measurement for scoring some items. (20)

BSID tool has been used as a gold standard against many child development tools including Denver in different countries. (21-23) This study aimed to cross validate the Ethiopia-adapted Denver II against the BSID III (also adapted for Ethiopia) considering the BSID III to be the gold standard.
1.3 Rationale and Significance of the study

In Ethiopia, high priority is given to the common infectious diseases and malnutrition that are associated with child morbidity and mortality. There are many interventions being implemented to address these problems. While doing so there was no intervention planned to address problems causing child developmental problems.\(^{(9)}(10)\) In the National Mental Health Strategy, the importance of screening and early intervention for child developmental problems is mentioned but the list of these interventions and how they was implemented is not clearly stated.\(^{(11)}\) Even if child developmental problems do not directly cause mortality, those can significantly affect the country’s socio-economic development in several dimensions. There have been sporadic and isolated efforts in some parts of Ethiopia to focus on child development measurement and interventions, but these efforts did not result in meaningful harmonization and standardization to the best usefulness to date. To assess child development, reliable and valid instruments are needed. These tools need also be adapted to the local context.

There has been no study to validate the Denver II tool against the BSID III in Ethiopia and this study was the first of its kind. This study will help researchers and clinicians in their decision about whether choose Denver II or BSID III to assess child development in their future studies. This study will also propose a shorter child developmental screening scale with potential clinical applicability for further evaluation in future studies. Availability of a validated and easily administered child development assessment tool can facilitate research into child development, which had the potential to inform, guide and even possibly direct the formulation of child development policies and interventions in Ethiopia.
2. Literature review

Children are the future human resource for the development of a country. Only when children are healthy in terms of mental, physical and social health, will they be able to live their lives to the full and achieve their potential. Childhood development is a comparative measurement, comparing a child with the rest of the children in the community within the same age group achieving a certain task or skill. (2)

2.1 Magnitude of child development problems and the associated factors

In the world, there were an estimated 249 million children under five years of age who were at risk of poor development in 2010. This was due to stunting or extreme poverty. The majority of the share was taken by low-income countries (65%), followed by low-middle-income countries (35%) and upper-middle-income countries (16%). The top ten countries with children at risk of poor development were India, China, Nigeria, Bangladesh, Indonesia, Pakistan, Ethiopia, Democratic Republic of Congo, Tanzania and Philippines, in decreasing order. (3) In 2004, Ethiopia was the fifth ranking country for children at risk of poor development (14) but in 2010 Ethiopia took seventh place. Despite this small improvement, more than 60% of under five year old children are at risk of poor development and lower productivity as adults. (3) Poor child development has an effect on the earning of a person as an adult. Being ill during this period leads to missed days out of work and daily activities. This can affect the earning of a person and the economy of a country in general. (13) Both poverty and short stature (malnutrition) of the child are related to fewer years of schooling. Short stature of the child and poverty reduce earning potential by an estimated 30.1% as a grown person. The average loss of earning due to poor child development around the world is estimated to be 19.8%. (14) Many factors affect child development.

Child development can be affected by both genetic and environmental factors. The environmental factors associated with good child development include good nutrition, access to health services and a favorable parental approach towards the child (e.g. having conversations, playing with the child and walking with the child). Parental socio-demographic status, in particular with regard to educational level and economic status are also extremely important. A study conducted among a cohort of twins living in United States showed that child development status was affected by both environmental and hereditary factors but the result
could not be generalized to children living in low- and middle-income countries. Another study conducted in Britain also supported this and added parental aspiration as a factor associated with better child development.

The parental approach towards the child, for example, being encouraging, showing affection, and sensitive parenting, were related to enhanced developmental outcomes among children. In addition to this study, another study supported that maternal responsiveness was associated with enhanced child cognitive psychosocial and language development. Similarly, parental stimulation (having conversations, playing, and walking with a child) were associated with better child development in a study conducted in Uganda. Child development is not only affected by parental stimulation but also the quality of stimulation. It was seen that the first child in the family tends to have superior stimulation than the other children in the family and that the presence of fewer under five children in the family increased the quality of stimulation. Also, improved quality of stimulation was seen among children who lived with their parents and with educated women who had a career and with parents engaged in a family environment. These factors were associated with a significant improvement in child cognitive development.

A study conducted in South Africa indicated that mental illness was directly associated with mother’s interactions with infants, which in turn were found to affect child development. Maternal depression negatively affecting child development was witnessed in many studies conducted in different countries, including in; Bangladesh, India and paternal depression was associated negatively with child development in a study conducted in UK. An experimental study conducted in South Africa showed that women who were provided with support and guidance of parenting had improved mother-infant relationship and reduced depressive symptoms.

2.2 Child development in Ethiopia

Ethiopia has attained the Millennium Development Goal 4 by reducing child mortality by two thirds, which is a great success but there is poor progress regarding child development problems. To reduce morbidity and mortality due to infections, a lot has been done. Management of children with pneumonia, diarrhea and malaria and immunization coverage has been improved. These efforts have been reflected in a significant decrement in child mortality. But according
to a study conducted in 188 countries regarding Sustainable Development Goals (SDG), a Sustainable Development Index (SDI) was developed, based on performance in the MDGs from 1990-2015. The SDI was scored 0-100 for under five years mortality, where 0 being the worst performance seen and 100 being the top performed indicator, Ethiopia scored 35 in under five mortality which is nearly similar to the neighboring countries Kenya and Sudan, which scored 38 and 36, respectively. (35)

The Ethiopian 2015-2020 Health Sector Transformation Plan and National Strategy for Newborn and Child Survival in Ethiopia focus on children morbidity and nutrition but no plan is included to improve internal mental function of children like cognitive, language and behavior of children. (9) (10) Even though the National Mental Health Strategy emphasizes child developmental problems and the need for screening programs and early interventions, the list of these interventions and how they will be implemented is not clearly stated. (11) Health is not complete without the presence of mental health and children are part of the general community. When we talk about child health, the mental health status of children should also be considered.

2.3 Child development assessment tools
Child development assessment tools that have been developed in Western settings may not be applicable in other country settings without modification because of many factors, including socio-cultural context. Due to cultural and social variations, some skills may develop at one age in a country and at a different age in another. To account for this cultural variation, adapted tools in local settings are recommended to assess child development. (20)

Child development assessment tools help to monitor the level of child development over time. Identification of developmental delays can help in showing the level of the problem for decision makers and it can help to design and implement early intervention. There are many instruments used to assess the developmental status of children. These include the Denver II (15), BSID III (16), Peabody picture vocabulary test (17), Wechsler Intelligence Scale for children (18) and Ages and Stages Questionnaire. (19) These measures assess child development by putting the child in a test situation, getting the care takers or the teacher to rate the child and by observing the child while he/she is doing daily activities. These measures are classified into two types based on their purpose of use; those measures that are used for screening purposes and measures that assess
comprehensive ability of the child. Of those instruments this study will focus on the BSID III and Denver II. Since both were adapted and standardized in Ethiopia.\(^{(5, 6)}\)

### 2.3.1 Bayley Scale Infant and Toddler Development III edition (BSID III) tool

The BSID III tool is considered as gold standard tool for assessment of infants’ developmental status. The BSID III has been translated into 44 languages and been used in many countries around the world.\(^{(20)}\) The tool has been also adapted in Ethiopia and translated into Amharic.\(^{(6)}\) The instrument assesses the general developmental status of children, with respect to “cognitive, physical, communication, social/emotional and adaptive development areas.”\(^{(20)}\) The tool is used for children within the age group of one to 42 months. The advantage of the BSID III is that it is a comprehensive measure, considered as a “Gold standard” measure of child development in infants. The BSID III also allows evaluation of specific developmental areas due to the presence of different subscales. The disadvantages of the BSID III are that it takes a lot of time to train the data collectors and to administer the questionnaire, the kit is costly, requires bulky equipment, adaptation of the tools is needed before use and it is lengthy to administer.\(^{(20)}\)

### 2.3.2 Denver II tool

The Denver II is another instrument used to assess child development status. The tool assesses the “fine motor/adaptive, gross motor, language, and personal/social domains”.\(^{(20)}\) The Denver II assesses child development status from birth up to six years. The instrument gives information of the developmental status of a particular child by comparing it with the rest of children in the same area within the same age group. The BSID III is a comprehensive tool which can be used for screening and diagnosing children developmental problems, unlike the Denver II which is used for screening purposes only. For Denver II, after children are screened with the tool, further evaluation by medical personnel is needed to diagnose developmental delay. The tool is used from birth up to six years of age. The advantage of the Denver II is that it has been used in many low and middle income countries and it is less costly than BSID III. The disadvantages are it needs coaching on how to do the assessment and it does not give a continuous increasing or decreasing child development score across age groups; rather it gives information on the child’s developmental score or developmental status compared to children within the same age group.\(^{(20)}\) The tool has been used in many developing countries and also adapted in Ethiopia.\(^{(5)}\)
2.3.3 Utilization of BSID III and Denver II tools

The BSID III has been used in many countries for different purposes. To mention some; the tool was used to assess the effect of intervention on child development in Norway, to assess the risk factors for children development in Italy, Bangladesh, South Africa, to compare groups of children in Democratic Republic of Congo, to compare with other tools in Taiwan and Brazil and to adapt and validate the tool in Ethiopia and in Brazil.

In Ethiopia there were studies that used the BSID III. The BSID was used previously to assess child development in the Butajira HDSS and to investigate factors influencing child development in Jimma. The Denver II tool was also used in many countries for different purposes. Some of the studies and their purposes were to adapt into local setting in a study conducted in Ethiopia and Malawi, to examine the reliability and validity of the tool in a study conducted at Tehran and Turkey, to compare some group of children development status with the others in a study conducted in Brazil, to investigate the associated factors for child development in Turkey and to evaluate the validity of other measurement tool comparing it with Denver II.

In different countries in the world, the validity and reliability of both the Denver II and BSID III tools were tested and proven potentially useful in different settings. In a study conducted in Asia, the Ages and Stages Questionnaire was validated against the BSID II in a sample of premature infants. The sensitivity, specificity, Positive Predictive Value (PPV) and Negative Predictive Value (NPV) of Ages and Stages Questionnaire was compared to the BSID II. The Denver II, Ages and Stages Questionnaires and Battelle Developmental inventory Screener 2nd edition were concurrently validated with BSID III in a study conducted in Colombia. Convergence validity was obtained between the BSID III and Peabody and other child development tools in a study conducted in Brazil.

This study aimed to assess the validity of child development measures in Ethiopia, using the BSID III as a gold standard and comparing it with the Denver II among children living in the Butajira Health and Demographic Surveillance System (HDSS), Southern Nation Nationalities People’s Regional state (SNNPR) of Ethiopia.
3. Objective
To evaluate the concurrent validity of Denver II in assessing the development of children aged 24 to 36 months who lived in the Butajira HDSS, using the BSID III as a gold standard.
4. Methods

4.1 Study area

The study was conducted in the Butajira HDSS. The Butajira HDSS is located in the Southern Nations Nationalities and Peoples’ Regional state, Gurage zone, Meskan and Mareko Districts and the Silte zone, around 130km from Addis Ababa, with 8.2° North latitude and 38.5° East longitude. The Butajira HDSS is a geographically defined area within which all births, deaths and population movements have been registered since 1987. The Demographic Surveillance System (DSS) is the sampled portion of the districts.\(^{(52)}\) The Butajira HDSS is selected because it is possible to obtain a list of all children residing in the area which can be used as a sampling frame for this study. In 2015, the total population of the HDSS was 78,913.\(^{(53)}\) According to a national census conducted in 2007, the region’s annual population growth rate was 2.9% and so the current 2017 year total population of the Butajira HDSS can be estimated at 83,556 people.\(^{(54)}\) In 2017, 24-36 months old children were 1,131.\(^{(53)}\) The Butajira HDSS consists of nine rural kebeles and one urban kebele. From the nine rural kebeles, four are found in lowland areas and the remaining five are in the highlands. The urban kebele is situated in midland.\(^{(55)}\)
4.2 Study design
The study design was a community based, cross-sectional concurrent validation study. Concurrent validation study was done to compare the test instrument (Denver II) scores with criterion instrument (BSID III) scores when administered within one week of each other.

4.3 Source and study population
The source population was all 24 – 36 month old children residing in the Butajira HDSS. The study population was all children within the age of 24- 36 months residing in the selected *kebeles*.

4.3.1 Inclusion criteria
All randomly selected children within the age group of 24-36 months who were alive and registered in the Butajira HDSS system, with caregivers available during the study period were included in the study.

4.3.2 Exclusion criteria
Children who were acutely unwell and who had physical disability that would affect their performance on the assessments were excluded from the study. This is because children with disability might fail the tests due to their disability and not because of developmental problems.

4.4 Sample size
A formula for calculating sensitivity and sample size for tests was used from Statistical methodology book.\(^{(56)}\)

\[
n = \frac{Z_{1-\alpha/2}^2 * S_N *(1-S_N)}{L^2 * \text{Prevalence}}
\]

Where \(n\) – required sample size, \(\alpha\)- size of the critical region, \(1-\alpha\) – confidence level, \(Z_{1-\alpha/2}\)- standard normal deviate corresponding to the specified size of critical region(\(\alpha\)), \(L\)- absolute precision desired on either side (half width of confidence interval ) and \(S_N\)- sensitivity of the test.

Assuming a sensitivity of 80\%, alpha 0.05, \(Z_{1-\alpha/2}\)=3.84, prevalence of poor child development 20\%, and a maximum feasible sample size of 120, the precision of the sensitivity estimate (L) would be 0.16, meaning that the precision of the sensitivity estimate if the sensitivity is 80\% will
range from 64-96%. *Assuming* a 10% non-response rate, we approached 132 mothers of eligible children.

### 4.5 Sampling procedures

The sampling strategy used was both purposive and random sampling. The study was conducted in one urban and two rural *kebeles* of the Butajira HDSS. Out of nine rural *kebeles* found at the site, two *kebeles* were selected randomly. The *kebeles* were Dirama and Bati, one from highland and one from lowland. Dirama was replaced purposively by Shershra Bido because of feasibility to transportation and its topography. A list of children aged between 24 and 36 months living in the selected *kebeles* was obtained from the DSS. From Butajira kebele 367, from Bati 66 and from Shershera Bido 34 children age 24 – 36 months were identified from the list. At first proportional sampling distribution was tried then nearly three fourth of the sample size went to the urban *kebele*. Due to fear of underrepresentation of the rural community half of the sample size was given to the urban *kebele* and the other half was distributed in to the two rural *kebeles* proportionally. A random sample of 132 children were selected using simple random sampling technique by lottery method from the *kebeles*. Children that were not available during the study period due to different reasons were replaced.
4.6 Data collectors and collection procedures

The BSID III assessors were 5 clinical nurses who resided in Butajira town and have extensive experience in administering the BSID III and were involved in the adaptation process in Butajira HDSS. They were trained previously for 10 days and have shown to administer BSID III reliably during the adaptation process of BSID III. The assessor of Denver II was degree nurse graduate who had extensive experience using Denver II. Investigators that were involved in the Denver II and BSID III adaptation process in Ethiopia were involved in this study and provided technical input to ensure quality control of the procedures. Separate data collectors administered the Denver II and BSID III and care was taken to ensure that the data collectors are masked to the performance of the child on the other scale. This is to minimize information bias.

Assessments were conducted in the homes where the children lived. Care was taken to ensure that the environment was free from distractions. The caretakers were available during the data collection helping the data collector to play with the child. For Denver II caretakers helped answering on the children’s performance of doing different tasks. Before the assessment using
the two tools, the data collector took few minutes to connect with the child and make the child comfortable. The data collectors communicated with the child in a positive and accepting tone.

The BSID III has 91 items of cognitive subscale, 49 items of receptive communication, 48 items of expressive communication, 61 items of fine motor and 72 items of gross motor. Each item was given a score of 1 if the child was able to perform that task and score of 0 if the child could not. Denver II has 29 personal social, 26 fine motor, 39 language and 32 gross motor items. A child was given a score of 1 if the child passed each item and 0 if not. The subscale scores of Denver II were summed to give total subscale score. Then the results were compared with BSID III scores. Based on the normality of the scores distribution, Spearman’s correlation coefficient for BSID III Cognitive subscale score and Pearson’s correlation coefficient for BSID III Fine motor (FM), Gross motor (GM), language, Expressive Communication (EC), Receptive Communication (RC) subscales scores were used to determine the concurrent validity between total scores on the Denver II and BSID III tool. Children that could not perform tasks based on the age category and who returned back to the below age alphabet were considered as children with developmental delays for each subscale in BSID III. Children that had 2 cautions (who failed on items that 75-90% of other children can perform that item) and 1 failure (who failed on items that 90% of other children can perform that item) below their age line were considered as children with developmental delays for Denver II.

Data were collected in March and April 2017 in the homes of the selected children. The BSID III was administered after calculating the age of the child and using that to determine the start point of administration since start points are grouped based on the age classification of the child. The caregiver was informed that the child was not expected to pass every item since the tool assesses children up to the age of 42 months. For each test items score, 1 was given if the child was able to perform the task and 0 was given if the child was not able to perform the task. At each specific start point if the child failed any of the first three items then they would go back to the start point for the previous age group. The child had to pass the first three consecutive items at the start point in order to be able to proceed further. Administration was then continued until the child scored 0 for five consecutive items.
Denver II administration started by informing the caregivers that the child was not be expected to pass every item since the tool assesses children up to the age of 6 years. The child and the caregiver were in a comfortable natural environment. A child who was able to perform an item or the caregiver reports that the child could perform the item was scored as pass. A child who was not successful in performing an item or the caregiver reported that the child could not perform an item was scored as fail. A child who did not have an opportunity to perform an item due to restrictions from the caregiver or other reasons was scored as “no opportunity” and a child who refused to perform an item was scored as refusal. The test was conducted using the Denver II chart from the average age of ability to perform an activity down to the left and the child was asked until the child passed three or more consecutive items that intersects and below the age line. Then likewise the child was tested for the items above the age line until the child failed three consecutive items.

The order of administration of the Denver II and BSID III was randomized to avoid order effects, whereby performance on the test administered second is usually better due to learning effects and familiarity. Those randomized to receive BSID III first had the test administered by the Butajira assessors. Within 3-7 days, the Jimma assessor administered the Denver II to all children (half who have already been assessed with BSID III and half for whom Denver II was the first test). Within one week of the Denver assessment, those who were randomized to receive the BSID III second were then assessed using the BSID III.

4.7 Operational definitions

Caregiver or caretaker is an adult living with the child who takes care of the child preferably the mother or someone closely knows and spends a lot of time with the child.

Child with normal development for BSID III was a child who was able to perform at least the first three consecutive items on his/her age category classification.

Child with developmental delay for BSID III was a child who was unable to perform the first three consecutive items on his/her age category and returned to the previous age category below him/her.
**Child with normal development for Denver II** was a child that was able to perform items on his/her age line or who had less than two cautions or who did not have failure below his/her age line.

**Child with developmental delay for Denver II** was a child that had two cautions or 1 failure based on his/her age line.

**4.8 Variables**

Age, sex, family income, caretaker’s marital status, educational level and caregiver’s relation to the child

**Cognitive skills** are the skills used by the brain to think, read, learn, remember, reason and pay attention.

**Language and communication skills** are skills to communicate information using verbal and non-verbal communication methods.

**Receptive communication** is the ability of the child to understand information

**Expressive communication** is the ability of the child to express him/herself through words.

**Gross motor skills** are skills that require large muscles usage like running, jumping and the like.

**Fine motor skills** are skills that require small muscle usage like writing, holding small objects, eating and the like.

**Personal social emotional skills** are skills of expressing and management of emotions and ability to establish positive relationship with others.

**4.9 Data Analysis procedures**

Data was entered using EpiInfo 7 and exported to Microsoft Excel 2007. Data was cleaned on Microsoft excel. The analysis was carried out using STATA 14. The total raw scores across all domains of development for both Denver II and BSID III were correlated using Pearson’s and Spearman’s correlation coefficient based on the normality test findings. Correlation coefficient
was classified as low (0.2-0.39), moderate (0.4-0.59), high (0.6-0.79) and very high (greater or equal to 0.8) in this study.\(^{(57)}\) The results from the BSID III tool was considered as the gold standard and the result from Denver II as the test instrument. The specificity, sensitivity, positive predictive value (PPV) and negative predictive value (NPV) for the Denver II tool was computed. Every child that failed for each subscale of Denver II was administered again after two weeks. Intra-Class Correlation (ICC) was calculated to determine the inter-rater reliability among BSID III administrators. ICC values less than 0.5 indicate poor reliability, 0.5-0.75 indicate moderate reliability, 0.75 – 0.9 indicate good reliability and above 0.9 values indicate excellent reliability.\(^{(58)}\)

### 4.10 Data quality management

For the six data collectors and one field supervisor, refresher training was given for two days and reliability of administration assessed for BSID III administrators. Training on the purpose of the study and data collection procedures was given for a day. Pre testing was not done because both the tools that were in this study were previously adapted, translated and tested in Ethiopia.

Completeness of the questionnaires were assessed daily by the field supervisor and the principal investigator. Supervisor and the principal investigator revisited the children to do spot checking to check the accuracy of information collected by the data collectors. Data was entered using EpiInfo software and inconsistencies of the entered data were reconciled by checking the questionnaire.

Inter rater reliability was assessed for BSID III assessors by calculating ICC for total scores. Five children were assessed by 5 data collectors of BSID III to test the inter rater reliability. The ICC of BSID III among 5 data collectors was 0.99 (95%CI 0.98-1) for cognitive, 0.96 (95%CI 0.86-0.99) for EC and 0.95 (95%CI 0.85-0.99) for RC, 0.98 (95%CI 0.93-0.99) for FM and 0.98 (95%CI 0.94-0.99) for GM sub scale scores.
4.11 Ethical considerations
Before conducting the study, ethical clearance was obtained from the Research Ethical Committee of the School of Public Health, College of Health Sciences of Addis Ababa University. Permission to use the Butajira HDSS sampling frame was obtained from the School of Public Health. For caregivers who were non-literate the consent was read to them verbally and they provided their consent using finger prints. For literate caregivers, written informed consent was obtained before participating in this study. The child who was participating in the study was told about the study in a simple and easy way for them to understand in consideration of participation assent. Any information learned from this study that might identify the participant was kept confidential. Care was taken to make the children comfortable during the data collection period. Children who had medical conditions were referred to the nearby health facility for further investigation and management. Information on child development interventions was given for all the study participant guardians. These were provision of adequate amount and variety of nutrition, having good relationship with the child, talking, walking and playing with the child and keeping the hygiene of the child. To improve children’s willingness and alertness level during the study, biscuits were given for all the participants. Soap was given for every child’s caretaker.
5. Results

One hundred thirty two children age 24 up to 36 months residing in Butajira kebele, Shershera Bido and Bati were eligible for inclusion in the study. Of these, one hundred and twenty one participated, giving a response rate of 91.6%.

![Flow chart of the final study units of children in Butajira Health and Demographic Surveillance System, 2017](image)

5.1 Socio-demographic characteristics

Male participants were 60 (49.6%) and female were 61 (50.4%) in the study sample. One hundred seventeen (96.7%) children lived with their biological parents, 3 (2.5%) lived with relatives and 1 (0.8%) lived with unrelated care takers. One hundred eighteen (97.5%) of the caregivers were married, 2 (1.7%) were widowed and 1(0.8%) caregiver was separated. Female household head was present in 120 (99.2%) households and in 1(0.8%) was absent. Among the
female household heads, 81 (66.7%) had received formal education. A male household head was present in 115 (95.0%) households and was absent in 6 (5.0%) households. Ninety-eight (85.2%) male household heads had been educated formally.

The monthly income (in Birr) was less than 1000 Birr for 51 caregivers (42.1%), 1000-2500 Birr for 52 (43.0%), 2501-3999 Birr for 16 (13.2%) and greater or equal to 4,000 Birr for 2 caregivers (1.7%). See table 1.
Table 1. Socio-demographic characteristics of study sample of children residing in Butajira Health and Demographic Surveillance System, 2017 (n=121)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of the child</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60 (49.6)</td>
</tr>
<tr>
<td>Female</td>
<td>61 (50.4)</td>
</tr>
<tr>
<td>Child lives with</td>
<td></td>
</tr>
<tr>
<td>Biological parents</td>
<td>117 (96.7)</td>
</tr>
<tr>
<td>Other caretakers</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td>Caregiver’s marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>118 (97.5)</td>
</tr>
<tr>
<td>Widowed and separated</td>
<td>3 (2.5)</td>
</tr>
<tr>
<td>Presence of female household head in the household</td>
<td></td>
</tr>
<tr>
<td>Present</td>
<td>120 (99.2)</td>
</tr>
<tr>
<td>Absent</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Female household head formal educational level</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>58 (48.4)</td>
</tr>
<tr>
<td>Secondary</td>
<td>14 (11.7)</td>
</tr>
<tr>
<td>Technical and vocational</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td>Higher</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td>Not educated</td>
<td>40 (33.3)</td>
</tr>
<tr>
<td>Presence of male household head</td>
<td></td>
</tr>
<tr>
<td>Present</td>
<td>115 (95.0)</td>
</tr>
<tr>
<td>Absent</td>
<td>6 (5.0)</td>
</tr>
<tr>
<td>Male household heads formal educational level</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>70 (60.9)</td>
</tr>
<tr>
<td>Secondary</td>
<td>14 (12.2)</td>
</tr>
<tr>
<td>Technical and vocational</td>
<td>4 (3.5)</td>
</tr>
<tr>
<td>Higher</td>
<td>9 (7.8)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Not educated</td>
<td>17 (14.8)</td>
</tr>
<tr>
<td>Family income per month</td>
<td></td>
</tr>
<tr>
<td>Less than 1000 Birr</td>
<td>51 (42.1)</td>
</tr>
<tr>
<td>1000-2500 Birr</td>
<td>52 (43.0)</td>
</tr>
<tr>
<td>2501-3999 Birr</td>
<td>16 (13.2)</td>
</tr>
<tr>
<td>4000 Birr and more</td>
<td>2 (1.7)</td>
</tr>
</tbody>
</table>

5.2 Administration of the BSID III and Denver II
The average time taken to administer BSID III was one and half-hours. For Denver, II the average time was 10 minutes. For both measures, some children were not familiar with the toolkits. For instance, some children residing in rural kebeles were scared of the dolls in both toolkits and we avoided using the toys for those children.
5.2.1 Descriptive analysis of BSID III
The mean score of the BSID III cognitive sub scale was 66.1 (95% Confidence Interval (CI): 65.0-67.2). The minimum score was 41 while the maximum score of the cognitive subscale was 81. The mean receptive communication score was 28.7 (95%CI 27.8-29.5) with a minimum score of 18 and a maximum score of 43. The mean expressive communication score was 29.9 (95%CI 28.9-30.9) with a minimum score of 19 and a maximum score of 45. The two participants that scored 0 in the expressive communication score were excluded from the study because the scores were outliers and likely to have significant disorder. The receptive communication and expressive communication scores were added to calculate the total language score. The mean total language score was 58.6 (95%CI 56.9-60.3). The minimum score was 38 and the maximum was 87. The mean fine motor score was 42.6 (95%CI 41.9-43.4) with a minimum score of 33 and a maximum score of 54. The mean gross motor score was 60.3 (95%CI 59.4-61.2) with a minimum score of 45 and a maximum score of 69.

![Figure 4. Box plots of Bayley Scale Infant and toddler Development III subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)]
5.2.2 Descriptive analysis of Denver II
The mean personal social score was 18.9 (95%CI 18.5-19.3) with a minimum score of 13 and a maximum score of 24. The mean fine motor score was 20.7 (95%CI 20.5-21.0) with a minimum score of 17 and a maximum score of 24. The mean score of language was 23.8 (95%CI 23.2-24.4) with a minimum score of 17 and a maximum of 34. The mean score of gross motor was 25.3 (95%CI 24.8-25.7) with 20 minimum score and 31 maximum score.

![Box plots of Denver II subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)](image)

**Figure 5.** Box plots of Denver II subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

5.2.3 Identification of children at risk of developmental delay
Children that passed BSID III language subscale score were 57.8% while that of Denver II were 71.1%. Seventy eight percent of children passed the BSID III gross motor subscale score and 82.6% passed for Denver II. Participants that passed BSID III fine motor subscale were 85.9% while 97.5% passed the Denver II.
The sensitivity of Denver II for fine motor subscale was 99.0% and the specificity was 11.8%. For gross motor subscale, sensitivity was 80.8% and the specificity was 11.1%. A sensitivity of 78.6% and specificity of 39.2% was found for language subscale as seen in Table 2. During the second round of Denver II the sensitivity of all subscales increased.

Table 2. Sensitivity, Specificity, Positive Predictive Value and Negative Predictive Value of Denver II as compared to Bayley Scale Infant and toddler Development III among children residing in Butajira Health and Demographic Surveillance System, 2017 (n=121)

<table>
<thead>
<tr>
<th>Tool</th>
<th>Sub scales</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive Predictive Value</th>
<th>Negative Predictive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denver II compared to</td>
<td>Fine motor</td>
<td>99.0%</td>
<td>11.8%</td>
<td>87.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Bayley</td>
<td>Gross motor</td>
<td>80.8%</td>
<td>11.1%</td>
<td>76.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>78.6%</td>
<td>39.2%</td>
<td>63.9%</td>
<td>57.1%</td>
</tr>
</tbody>
</table>
Correlation coefficients for BSID III and Denver II subscales were calculated as seen in the Table 3. Between the two measurements in language sub scale the correlation coefficient was 0.57, for fine motor subscale 0.42 and for gross motor subscale 0.26. The overall correlation of BSID III and Denver II was 0.54.

Table 3. Correlation of Denver II and BSID III scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

<table>
<thead>
<tr>
<th>Tool</th>
<th>BSID III</th>
<th>Denver II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cognitive*</td>
<td>Cog</td>
</tr>
<tr>
<td></td>
<td>Receptive communication</td>
<td>Personal social</td>
</tr>
<tr>
<td></td>
<td>Expressive communication</td>
<td>Fine motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gross motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total score</td>
</tr>
<tr>
<td></td>
<td>Fine motor</td>
<td>0.268</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2553</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3374</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3262</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>0.3908</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4713</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4788</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4246</td>
</tr>
<tr>
<td></td>
<td>Gross motor</td>
<td>0.3031</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4464</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4460</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4109</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2626</td>
</tr>
<tr>
<td>BSID III</td>
<td>Cognitive*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Receptive communication</td>
<td>0.5982</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5773</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.7318</td>
</tr>
<tr>
<td></td>
<td>Expressive communication</td>
<td>0.5588</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.6012</td>
</tr>
<tr>
<td></td>
<td>Fine motor</td>
<td>0.4746</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4926</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5513</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5983</td>
</tr>
<tr>
<td></td>
<td>Gross motor</td>
<td>1</td>
</tr>
</tbody>
</table>

*Cognitive scores correlation coefficient represents Spearman’s correlation coefficient
6. Discussion

A community based study was conducted in rural Ethiopia to investigate criterion validity of Denver II compared to BSID III. The sensitivity of Denver II was above 70% in all subscales compared to BSID III scores. The specificities were below 70% in all subscales. There was weak to moderate correlation between the subscales of Denver II with BSID III. The inter rater reliability, using ICC, among BSID III administrators showed excellent agreement.

The sensitivity of all the subscale scores of Denver II were all above 70% while the specificities were below 70%. The sensitivity and specificity of Denver II was not stated on the manual of the Denver II. Different studies were conducted to check the validity of Denver II in different settings. A study conducted in 1992, showed that Denver II had 56-83% sensitivity and 67-80% specificity. The sensitivity decreased when the specificity increased. In a study conducted in Korea, Denver was tested against BSID II of mental development and psychomotor development index. The sensitivity was 83-87% and specificity was 51-62% in the year 2005. In 2007, Denver II was tested against BSID II in the same setting. The sensitivity was 84% and specificity 61%. This study has showed that the specificity of Denver II was low in the local context. Low specificity could lead to over report of false positives requiring follow-ups and might be resource intensive.

In a study conducted in Canada, Age and Stage Questionnaire (ASQ) and Parents’ Evaluation of Developmental Status (PEDS) that were completed based on parental report were tested against BSID III. Both ASQ and PEDS showed sensitivity greater than 70% while the specificity of ASQ was greater than 70% and PEDS was less. ASQ was validated with BSID 2nd among preterm infants at the age of 24 months children. The result showed that the sensitivity of above 70% and a specificity the ranged below 70% and above for mental delays. The motor subscale sensitivity was below 70% and specificity greater than 70%. Short child development measurements have different sensitivities and specificities. Denver II had specificity less than 70% in this study and the others. Yet many studies use Denver II for screening purposes, to assess correlation with other measures and even considering it as a gold standard to check the validity of other measures.
The overall correlation of Denver II and BSID III scores was moderate in this study. The correlation among the subscales of Denver II and BSID III was weak for GM, moderate for FM and moderate for language subscales. The study conducted in Colombia compared short child measures with BSID III. The correlation of Denver II with BSID III was weak to moderate for FM, moderate for GM and from moderate to high for language subscales as age increased. The study found that Denver II was the preferred and valid measure compared to ASQ 3, MacArthur-Bates Communicative Development Inventories, Battelle Screener and World Health Organization Motor Milestones measures by considering the ability of Denver II to screen more than one domain, minimal number of materials used and short time for administration.\(^{(22)}\)

Moderate correlation of FM was observed between BSID III and Denver II in this study. Study conducted in Colombia showed weak to moderate correlation as age increased.\(^{(67)}\) Another study conducted in America validating Peabody Developmental Motor Scale 2\(^{nd}\) with BSID III in FM subscale, showed that there was a very strong correlation between the two measurements but the study participants were children up to the age of 26 months and 10 days. BSID III FM subscale score showed moderate correlation in all subscales of Denver II except PS subscale that had weak correlation in this study.

GM correlation among BSID III and Denver II scores was weak. The study conducted in Colombia showed moderate correlation.\(^{(67)}\) Another study tested Peabody Developmental Motor Scale 2\(^{nd}\) against BSID III in children residing in United States of America. In that study, the GM correlations were strong but children up to the age of 26 months and 10 days were included in the study.\(^{(68)}\) GM subscale of BSID III showed weak correlation with all the subscales of Denver II in this study.

Language subscale correlation between BSID III and Denver II scores was moderate. This was weak to high as age increased in the study conducted in Colombia.\(^{(67)}\) BSID III RC subscale scores were moderately correlated with all the sub scales of Denver II except PS with weak correlation in this study. EC of BSID III was moderately correlated with all the subscales of Denver II except PS subscale that was correlated weakly. Cognitive subscale score of BSID III showed weak correlation with all the Denver II subscale scores.
BSID III subscales were correlated with one another. The correlation of cognitive BSID III score was moderate with EC and GM subscales while FM and RC correlations were high. RC subscale was moderately correlated with the cognitive, FM and GM subscales and with EC the correlation was high. EC subscale was moderately correlated with GM and highly correlated with FM. FM was highly correlated with Gross motor. The subscales of BSID III showed moderate to high correlation with one another.

Children have the right to live within environment that is nurturing to enable them grow bodily and psychologically. Yet, there are many children with poor development due to malnutrition and poverty. The SDG Article 6.2 goal 1 and 4 states that, “State parties shall ensure the maximum extent possible for the survival and development of the child by developing a sound policy on eradication of poverty, and access to quality early child development, care and pre-primary education”. The Ethiopia’s National Mental Health Strategy emphasizes on child developmental problems and that target screening program, and early interventions should be implemented. To assess the magnitude of child developmental problems in Ethiopia, short and validated child development measurements are needed. This study investigated whether the adapted version of Denver II can be used to screen children with developmental problems in Ethiopia. Based on the findings of this study, the Denver II measurement can be used to screen children with developmental delays with its specificity limitations. After the children with suspected developmental delays are identified, diagnostic measurements can be administered for the children for diagnostic purposes.

Identifying most vulnerable children and providing focused interventions are the key for effective early child development. Provision of interventions like parenting education and school based early learning programs for children at risk can significantly improve child development. A study conducted in Ethiopia in SNNPR showed that malnourished children with emotional therapy and food therapy had quick recovery than that of children with only food therapy. A systematic review conducted in low and middle income countries showed that play and reading were the most effective interventions for early child development in these countries.
Assessment of child development would be easy if there were available valid, short and less costly child development measurements. Globally and nationally, there is the need to identify child developmental problems. Short child development measurements will help in determining child developmental problems magnitude in Ethiopia. This study identified that Denver II, one of the short child development measurements, can detect developmental delays with good sensitivity. This will help in identification of children with developmental delays and designing early child development intervention like; responsive parenting by providing appropriate play and communication with the children, improving maternal mental health by treating mental health problems and reduce poverty by providing financial support. These early child development interventions could be integrated with treatment of malnutrition. Denver II can be administered by any person who has a training on the administration. This makes it feasible to administer Denver II in the local context but the poor specificity makes it less applicable for routine use.

This study open doors to studies on assessment of child development delays, adaptation of other short child development measurements, age standardization of the adapted Denver II and BSID III measurements and to design a locally appropriate measurements.

**Limitations**

The BSID III cognitive sub scale and Denver II PS sub scales were not included in calculating the sensitivity, specificity, PPV and NPV. This is due to that personal social part of BSID III was not adapted and translated into local context. The other reason is that Denver II does not have a separate cognitive subscale.

Age adjustment for prematurity was not done for both Denver and BSID III measurements. This was because information regarding the gestational ages of children was not available.

The precision for the sensitivity and specificity was 0.16. The sensitivity and specificity range from 64-96%. This can be improved by increasing the sample size in future studies.
Even if the tools were adapted and translated into local context, there were children scared to hold the dolls of both toolkits. Similarly, finding was reported in a study conducted in Malawi. There is some limitation to use measurements that are developed in other settings.

**Strengths**

To avoid order effect half of the children were randomized with BSID III and Denver II measurements at first then switched the measurements in the second round. The data collectors had extensive experience on the measurements that improves the quality of the data. Data with poor quality were excluded from the study.

Even if the BSID III administration took long, the data collectors kept the children engaged actively and no child discontinued after administration of the measurement started.

The data collectors of BSID III were five which could have compromised the inter rater reliability. The inter rater reliability was tested in five children and the ICC showed excellent agreement.
7. Conclusion and Recommendations

7.1 Conclusion
BSID III is the preferred tool to measure child development but the time to administer the tool and the amounts of toys in the toolkit makes it hard to use. Short child development assessment tools with acceptable level of sensitivity and specificity are needed. This study showed that Denver II has a positive correlation with BSID III in 24 to 36 months old children living in Butajira HDSS. The sensitivity of Denver II is good but the specificity is poor. Since Denver II is a screening tool, diagnostic measures are needed to diagnose children with developmental delays. Low specificity of the Denver II measurement can raise parental concerns, over referral and workload for health professional. This will limit its applicability at large scale. Therefore, findings of the study must be used with caution.

7.2 Recommendations
Even if the sensitivity of Denver II is good, the specificity is below the acceptable levels. This study can be repeated with large sample size to improve the precision of the sensitivity and specificity. We recommend further study on validation and adaptation of other short child development tools and prevalence studies on developmental delay. Adapted and validated measurements of child development will help in estimating the magnitude of child development delays. This will unlock doors to early child development interventions. Further modification of the tools might be needed or developing a new cultural sensitive measurement should be considered. We recommend the Ethiopian Ministry of Health to support studies on adaptation and validation of short child development measurements and assess child developmental problems.
8. Reference
34. Peter J Cooper, Mark Tomlinson, Leslie Swartz, Mireille Landman, Chris Molteno, Alan Stein, Klim McPherson, Lynne Murray. Improving quality of mother-infant relationship and


52. Yemane Berhane, Peter Byass. BUTAJIRA DSS ETHIOPIA. Department of Community Health, Facility of Medicine Addis Ababa University and Department of Public Health and health and Clinical Medicine Umea University, 2000.


9. Annex

Annex 1. BSID subscale percentage scores of children in Butajira Health and Demographic Surveillance system, 2017
Figure 7. Bayley Scale Infant and toddler Development cognitive item percentage scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

Figure 8. Bayley Scale Infant and toddler Development III expressive communication item percentage scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Figure 9. Bayley Scale Infant and toddler Development III receptive communication item percentage scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

Figure 10. Bayley Scale Infant and toddler Development III fine motor item percentage scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Figure 11. Bayley Scale Infant and toddler development III gross motor items percentage score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Annex 2. Denver II subscale percentage scores of children in Butajira Health and Demographic Surveillance system, 2017

Figure 12. Denver II personal social items percentage score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

Figure 13. Denver II fine motor items percentage score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Figure 14. Denver II gross motor items percentage score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

Figure 15. Denver II language items percentage score of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Annex 3. Scatter plot of Bayley Scale Infant and toddler Development III and Denver II children’s subscale scores

Figure 16. Scatter plot of Bayley Scale Infant and toddler Development III and Denver II language subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)

Figure 17. Scatter plot of Bayley Scale Infant and toddler Development III and Denver II fine motor subscale scores of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Figure 18. Scatter plot of Bayley Scale Infant and toddler Development III and Denver II gross motor subscale of children in Butajira Health and Demographic Surveillance System, 2017 (n=121)
Annex 4. English version questionnaire
Addis Ababa University College of Health Science School of Public Health

Information form

Title of the study- Examining the validity of the Denver II Child Development Measurement tool among children 24 – 36 months against the gold standard of the Bayley Scale 3rd edition in Butajira, Ethiopia

My name is __________________. I am part of a team of a child development study. This study is conducted to assess the validity of one child development assessment tool with the other. This study will help in designing a policy for child development in the future. By participating in this study, you will indirectly contribute the betterment of child health in Ethiopia. You and your child have been chosen to participate in this study. If you are willing for your child to participate in this study your child developmental status will be assessed. The study has two phases. The longer interview will take approximately an hour while the shorter version will take about 20 minutes, interview of the phases will be undertaken with a week difference. The phase of the interview will be determined using lottery method at the beginning. For the first phase I will be assessing your child and for the second phase another data collector will come to assess your child developmental status.

There is no risk or discomfort that might occur as a result of your child participating in this study. By participating in this study you may learn new information about your child’s development. Any information learned from this study which might identify your or your child name will be kept confidential.

Participating in this study is based on voluntary and you can withdraw at any time.

Are you willing for your child to participate in this study?
Yes ___________________ No_____________________

Consent form
I ___________________ let my child to participate in this study with the knowledge of the purpose of the study and with full volunteerism.

Name of the care giver____________________________
Signature _______________________________
### Socio demographic characteristics

Complete the following list of questions by asking the caregiver

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What is the child’s date of birth?(in E.C)</td>
<td>A. Day ________, B. Month ________, C. Year ________</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>What is the sex of the child?</td>
<td>A. Male, B. Female</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>With whom does the child lives?</td>
<td>A. Actual parents, B. Relatives, C. Non related</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>What is the marital status of the child’s parents or caregivers?</td>
<td>A. Married, B. Living together, C. Divorced/separated, D. Widowed, E. Never married and never lived together</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Is there a female figurehead in the house the child living in?</td>
<td>A. Yes, B. No</td>
<td>If No, skip to question no. 8</td>
</tr>
<tr>
<td>6.</td>
<td>Has the female figurehead of the house ever attended school?</td>
<td>A. Yes, B. No</td>
<td>If No, skip to question no. 8</td>
</tr>
<tr>
<td>7.</td>
<td>What is the educational status of the female figurehead of the house?</td>
<td>A. Primary school, B. Secondary school, C. Technical/ vocational, D. Higher, E. I don’t know</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Is there a male figurehead in the house the child living in?</td>
<td>A. Yes, B. No</td>
<td>If No, skip the rest of the socio demographic questions</td>
</tr>
<tr>
<td>9.</td>
<td>Has the male figurehead of the house ever attended school?</td>
<td>A. Yes, B. No</td>
<td>If No, skip the rest of the socio demographic questions</td>
</tr>
<tr>
<td>10.</td>
<td>What is the highest level of school the male figurehead of the house attended?</td>
<td>A. Primary school, B. Secondary school, C. Technical/ vocational, D. Higher, E. I don’t know</td>
<td></td>
</tr>
</tbody>
</table>
Denver II tool

Directions for administration of specific items of Denver II

Follow the described procedures exactly, and carefully check the scoring criteria before passing or failing an item. Some items may be passed by report of the caregiver. These items are distinguished by “R” in the item bars on the test form and by (R) after the item names in the following directions for administration. When scoring an item by report of the caregiver, it is helpful to circle the “R” in the distribution bar on the form to distinguish reported behavior from behavior actually seen. It is preferable that report forms are confirmed by an observation.

When administering report items, avoid asking “leading questions” that may suggest an answer to the caregiver. For example, instead of asking, “Your child can drink from a cup, right?” ask, “Does your child drink from a cup?” Take care to ask questions that require the caregiver to supply the necessary information to score the item (more details and/or examples), rather than prompting the caregiver to give the desired response. In addition, asking if a child does something yet, may help the caregiver feel more comfortable in reporting failures.

A pass “P” and no opportunity “NO” will be marked in GREEN
A fail “F” and refusal “R” will be marked in RED

A. Personal – social

1. Regard Face
   Hold the child or place the child on his back and put your face about 12 inches above the child’s face.
   Pass if the child actually looks at you.

2. Smile Responsively
   With the child lying on the back, smile and talk to the child. Do not tickle the child, or touch his face.
   Pass if the child smiles in response. The objective is a social response rather than a physical response.

3. Smile Spontaneously (R)
   During the test watch for the child to smile at you or the caregiver without any stimulation, either by touch or sound. If this is not been seen, ask the caregiver if the child ever smiles at someone first, before being smiled at, talked to, or touched.
   Pass if the child smiles spontaneously at you or caregiver during the test or reportedly at home.
   The objective is for the child to initiate social interaction.

4. Regard own hand (R)
   During the test, notice if the child stares at one of his hands for at least several seconds, rather than glancing at it fleetingly. If you do not see this, ask the caregiver if the child has done this.
   Pass if the caregiver reports that the child does this or if you see the child do this during the test.
5. **Work for toy**
   Place a toy which the child seems to enjoy (like “rattle” or “calle” or “elela”) on the table a little out of reach.
   **Pass** if the child tries to get the toy by reaching or stretching his arm or body toward the toy. The child does not have to actually pick up the toy.

6. **Feed Self (R)**
   Ask the caregiver if the child actually feeds himself a piece of bread, cake, biscuit, injerra, a piece of sugar-beat or any finger food.
   **Pass** if the caregiver reports that the child does this. Score “No Opportunity” if the child has not been given such food.

7. **Play a clapping game (R)**
   Without touching the child’s hands or arms, demonstrate a clapping game by clapping your hands together and ask the child to “play by clapping” with you. If the child does not do this, ask the caregiver to try it. If the child still does not do this, ask the caregiver if the child does this at home.
   **Pass** if you observe the child clapping his/her hands or if the caregiver reports that the child does this. Also pass any other clapping game in which the child participates. The objective is an interaction with another person.

8. **Indicate wants (R)**
   During the test, notice if the child lets you or the caregiver know that he/she wants something, without crying. If this cannot been seen, ask the caregiver how the child lets someone know what he/she wants.
   **Pass** if you see the child do something other than cry to communicate a specific desire, or if the caregiver reports that the child does this. Examples of passes are: pointing, reaching and making sounds, putting arms up to be picked up, pulling, and saying a word.

9. **Say or wave bye-bye (R)**
   If possible, it is best to administer this item as the caregiver and child are leaving, or as you are leaving the room. Face the child and say “bye-bye” while waving to the child. Do not touch or allow the caregiver to touch the child’s hands or arms. If the child does not respond ask the caregiver if he/she makes other common signs when leaving the child for example: nodding the head.
   **Pass** if the child responds by raising his/her arm or waving with hand or fingers, or if the caregiver reports that the child does common signs.
10. **Play ball with examiner**
Roll the ball to the child and try to get the child to roll it or toss it back. You may need to roll the ball back and forth several times.
**Pass** if the child rolls or tosses the ball *purposefully* toward you. (Handling the ball to you is not a pass.)

11. **Imitate (household) activities (R)**
Ask the caregiver if the child imitates common activities around the house such as dusting, wiping up, sweeping, cooking or washing clothes activities.
**Pass** if the caregiver reports that the child imitates any type of common adult household activity.

12. **Drink from Cup (R)**
Ask the caregiver if the child can hold a regular cup or glass or any suitable container used in the family and drink from it without help, spilling less than half of the water. The cup or glass may not have a lid or spout.
**Pass** if the caregiver reports that the child does this.

13. **Help in house (R)**
Ask the caregiver if the child helps at home by doing simple tasks like putting objects away, throwing trash away, or fetching something for a caregiver when asked.
**Pass** if the child actually helps rather than just imitates. The objective is to determine if the child understands and carries out a request to help.

14. **Eat with use of one hand or spoon/fork (R)**
Ask the caregiver if the child is able to eat independently by using his fingers of one hand or a spoon or fork. If so, how much does he spill?
**Pass** if the child eats alone with the fingers of one hand or with a spoon or fork and gets most of the food into the mouth, spilling little. The objective is to determine if the child is essentially self-sufficient in feeding.

15. **Remove Garment (R)**
Ask the child if he/she can remove any of his/her clothing. If the child refuses to do so, ask the caregiver to specify which garment the child can remove.
**Pass** if the child can remove items or if the caregiver specifies items such as shoes that take some effort to remove, T-shirt, blouse, dress or trousers. Do not pass hat, socks, diaper, slippers, or shoes that slip off easily. The objective is to see if the child can purposefully remove a garment in an effort at self-care. Note: Relate this item with item 17 when the child passes this item.

16. **Feed doll**
Place the doll on the table in front of the child. Tell the child to “feed the baby”.

---

55
Pass if the child imitates putting food into the doll’s mouth or if the child imitates breast-feeding.

17. Put on clothing (R)
Ask the child to put on any of his/her own clothing. If the child refuses to do so, ask the caregiver to specify which garment the child can put on.
Pass if the child puts on any clothing or if the caregiver specifies clothing, such "blouse", "trousers", "dress", "skirt" etc. Shoes do not have to be tied, fastened, or on correct feet. A cap placed haphazardly on the head does not pass.

18. Wash mouth with help (R)
Ask the caregiver if the child washes his/her mouth with some help, i.e. providing water or providing a verbal instruction so the child knows what to do.
Pass if the child can wash his/her mouth with some help.

19. Wash and dry hands (R)
Ask the caregiver if the child can wash both sides of both hands and dry his/her own hands without help.
Pass if the caregiver reports that the child does this.

20. Name playmate
Ask the child to name some of his/her playmates (not living with the child). Ask the caregiver to confirm that the playmate does not live with the child.
Pass if the child gives the first name of at least one playmate not living with the child. Names of cousins or siblings are acceptable if they do not live with the child. Names of pets or imaginary friends are not acceptable.

21. Put on T-shirt (R)
Ask the caregiver if the child can get his/her T-shirt or blouse on without help.
Pass if the child can pull the shirt over his/her head and get his/her arms in the sleeves. The shirt may be on backwards or inside out. Score “No Opportunity” if the child doesn’t have or know a T-shirt or a pullover.

22. Dress, no help (R)
Ask the caregiver if the child can dress without any help.
Pass if the child can dress completely and correctly without help. He/she must usually pick out at least play-clothes, and may have help only for tying shoelaces, and buttoning or zipping the back of a dress.
A pass of Dress, No Help also passes Put on Clothing and Put on T-shirt.
23. Play social games (R)
Ask the caregiver if the child plays simple social games, such as playing with pebbles or small stones. Specify that the child must really play and understand the rules of the game. **Pass** if the caregiver reports that the child understands and plays social games with others, sitting and taking turns.

24. **Cleaning face, No help (R)**
Ask the caregiver if the child can wash and dry his/her own face (eyes, nose, mouth, teeth) without help or supervision. **Pass** if the caregiver reports that the child can wash and dry his/her face without help or supervision. (The caregiver should be advised to wash and dry the child’s face some of the time to ensure proper cleaning.)
A pass of Cleaning face, No help also passes Wash mouth, with help.

25. **Serving oneself Injera (R)**
Ask the caregiver if the child can serve him or herself “injera” with “wot” and how he/she does it. **Pass** if the caregiver says that the child can do this including following steps: washing hands, taking clean dishes, take injera from a container, putting on a plate and adding wot on it and then eat it.

### B. Fine motor – adaptive

26. **Follow to midline**
With the child lying on his/her back, hold the red yarn above the child’s face at a height where he/she focuses on it (usually about 8 inches). Shake the yarn to attract the child’s attention and move it slowly in an arc from one side of the child’s body to the other several times. The movement of the yarn may be stopped to re-attract the child’s attention, and then continued. **Pass** if the child follows the yarn to the midpoint of the arc with eyes alone, or with head and eyes.

27. **Follow past midline**
(refer to Follow to midline for administration procedures)
**Pass** if the child follows the yarn past the midpoint of the arc with eyes alone, or with head and eyes.
A pass of Follow past midline also passes Follow to midline.

28. **Grasp rattle**
While the child is lying on his/her back or is being held by the caregiver, touch the backs or tips of the child’s fingers with the handle of the rattle. **Pass** if the child grasps the rattle for a few seconds.
29. **Hands together**
During the test while the child is lying on his/her back (not while cradled in the caregiver’s arms), notice if the hands are brought together at the midline of the body over the chest or at the mouth.
**Pass** if you see the child bring his/her hands together in this manner.

30. **Follow 180 degrees**
(refer to Follow to midline for administration procedure.)
**Pass** if the child follows the yarn with head and eyes through the complete arc from one side of the body to the other.
A pass of Follow 180 degrees also passes Follow to midline and Follow past midline.

31. **Regard coffee bean**
With the child sitting on the caregiver’s lap at the table, place a coffee bean directly in front of the child. The coffee bean should be placed on a surface that gives good contrast, such as a piece of white paper. You may point to or touch the coffee bean to attract the child’s attention to it. “O”-shaped cereal may be used in place of a coffee bean.
**Pass** if the child clearly looks at the coffee bean.

32. **Reaches**
With the child sitting on the caregiver’s lap so that the child’s elbows are level with the table top and his/her hands are on the table, place an object such as the rattle or the red yarn within easy reach and encourage the child to pick it up.
**Pass** if you see the child reach toward or at least move his/her hands or arms in the direction of the object on the table.

33. **Look for yarn**
While the child is sitting on the caregiver’s lap, hold the red yarn high and attract the child’s attention to it. When the child is looking at the yarn, drop it so that it falls out of sight. Do not move your hand or arm except to release the yarn. Repeat if the child’s response is unclear.
**Pass** if the child definitely looks for the yarn by looking down or toward the floor.

34. **Rake coffee bean**
With the child sitting on the caregiver’s lap so that his/her elbows are level with the table top and his/her hands are on the table, drop a coffee bean to attract the child’s attention.
**Pass** if the child picks up the coffee bean using a raking motion with the entire hand. Make sure the coffee bean did not merely stick to the child’s hand but was actually picked up.
Note: This item is also passed if the child passes Thumb-finger grasp.

35. **Pass cube**
Notice whether the child passes a block from one hand to the other. Give the child a block to encourage this; then present a second block to the same hand. The child will often pass the first block to the other hand so that he/she can take the second block. **Pass** if you see the child transfer a block from one hand to the other without using his/her body, mouth, or the table.

36. **Take 2 cubes**
Place 2 cubes on the table in front of the child. Encourage him/her to pick up the blocks, but do not hand them to the child. **Pass** if the child picks up the 2 blocks and holds one in each hand at the same time.

37. **Thumb-finger grasp**
(refer to *Rake coffee bean* for administration procedure.) **Pass** if the child picks up the coffee bean by bringing together any part of the thumb and one or several fingers.
A pass of *Thumb finger grasp* also passes *Rake coffee bean*.
Note: BE CAREFUL not to let the child swallow the coffee bean!

38. **Bang 2 cubes held in hands (R)**
Place a block in each of the child’s hands and encourage him/her to bang them together. You may encourage the child to hit the blocks together by demonstrating with blocks held in your own hands. Do not touch or allow the caregiver to touch the child’s hands or arms. If the child does not bang the blocks together, ask the caregiver if the child hits small objects together in this manner. **Pass** if the child holds one block in each hand and hits the blocks together, or if the caregiver reports that the child hits small objects together. Pots, pans, lids, or other large objects do not pass.

39. **Put block in cup**
Place 3 blocks and the cup on the table in front of the child. Encourage the child to put the blocks in the cup by demonstration and words. This demonstration may need to be repeated several times. **Pass** if the child places at least one block in the cup and releases it.

40. **Scribbles**
Place a piece of plain paper and a pencil on the table in front of the child. You may write your name using the pencil to let the child who has never ever seen a pencil before that it is something to write with. You may place the pencil in the child’s hand and encourage him/her to scribble. (Watch the child carefully and be prepared to prevent him/her from putting the pencil in mouth or eye.)
Pass if the child makes purposeful marks on the paper. Fail accidental marks or stabbing with the pencil.

41. **Dump coffee bean, demonstrated**
Show the child 2 or 3 times how to dump the coffee bean out of the bottle. Then ask the child to get it out. (Do not use the word “dump.”)
Pass if the child dumps the coffee bean out of the bottle or rakes the coffee bean close to the opening and then dumps it out. Do not pass if the child removes the coffee bean with a finger.

42. **Tower of cubes – 2, 4, 6, 8**
With the child sitting high enough at the table so that elbows are level with table top and hands are on the table, place the blocks on the table in front of the child. Encourage the child to stack them by demonstration and words. It may be helpful to hand the blocks to the child, one at a time. Three trials may be given.
Pass **Tower of 2 cubes** if the child puts one block one block on top of another so that it does not fall when he/she removes his/her hand.
Pass **Tower of 4, 6, 8 cubes**, depending upon the greatest number of blocks the child stacks in three trials.
A pass of 4, 6, or 8 cubes also passes the lower tower items (for example, passing Tower of 6 cubes also passes Tower of 2 and 4 cubes).

43. **Imitate vertical line**
The child should be seated at the table at a comfortable writing level. Place a pencil and a piece of plain paper in front of the child and tell him/her to draw lines like yours. On that paper, demonstrate how to draw vertical lines, drawing toward the child. Do not guide the child’s hand. Three trials may be given.
Pass if the child makes 1 line or more on the paper, at least 2 inches long, and not varying from your vertical line by more than 30 degrees (see example). Lines do not have to be perfectly straight.

44. **Thumb wiggle**
Demonstrate with one or both hands by making a fist with your thumb pointing upward. Wiggle only your thumb. Tell the child to wiggle his/her thumb (or thumbs) the same way. Do not help put the child’s hand into position. You may tell the child to make a “thumbkin”.
Pass if the child moves the thumb of either or both hands without moving any other fingers.

45. **Copy O**
Give the child a pencil and piece of plain paper. Show him/her the circle on the back of the test form. You may show how to hold a pencil. If necessary demonstrate how the pencil works by
writing down your name. Tell the child to “draw one like the picture” without naming it or moving your finger or pencil to show how to draw it. Three trials may be given. 

**Pass** any form approximating a circle that is closed or nearly closed. Fail continuous spiral motions.

**46. Draw person – 3 parts, 6 parts**

Give the child a pencil and a piece of plain paper. You may show how to hold a pencil. If necessary demonstrate how the pencil works by writing down your name. Tell him/her to draw a picture of a person (boy, girl, Mommy, Daddy, etc.). Be sure the child has finished before scoring the drawing.

3 Parts – **Pass** if the child has drawn 3 or more body parts. A pair (ears, eyes, arms, hands, legs, feet) is considered one part. To get credit, both parts of the pair must be drawn unless the drawing is in profile (in which case one eye, ear, etc., gets credit). Make note in your test observations of any unusual drawing, even though the child has identified the acceptable parts.

6 Parts – **Pass** if the child has drawn 6 or more body parts. (See criteria under 3 parts.) A pass of *Draw person – 6 Parts* also passes *Draw person – 3 Parts*.

**47. Copy ∘**

Note: Administer *Copy ∘* before *Copy ∘ Demonstrated*.

Give the child a pencil and a piece of plain paper. Show him/her the cross on the back of the test form. You may show how to hold a pencil. If necessary demonstrate how the pencil works by writing down your name. Show him/her the

**48. Pick longer line**

Making sure they are presented vertically, show the child the parallel lines on the back of the test form and ask the child “which line is longer?” (do not say “bigger”). After the child has pointed to a line, turn the paper upside down and ask the question again. Turn the paper upside down again and repeat this a third time. If the child does not answer correctly all three times, repeat the question three more times, turning the paper each time.

**Pass** if the child picks the longer line 3 out of 3 times, or 5 out of 6 times.

**49. Copy □**

Give the child a pencil and a piece of plain paper. You may show how to hold a pencil. If necessary demonstrate how the pencil works by writing down your name. Show him/her the
square on the back of the test form. Tell the child to “draw one like the picture” without naming it or moving your finger or pencil to show how to draw it. Three trials may be given. **Pass** if the child draws a figure with straight lines and 4 square corners. The corners may be formed by lines that intersect but the corners must be approximately right angles (not rounded or pointed). The length should be less than 2 time the width. A pass of Copy □ also passes Copy □ Demonstrated.

50. **Copy □ Demonstrated**
If the child is unable to copy the square from the picture, show him/her how to draw it by drawing two opposite (parallel) sides first and then the other two opposite sides (rather than drawing the square with a continuous motion). Three demonstrations and trials may be given. **Pass** by the same criteria as Copy □.

C. **Language**

51. **Respond to bell**
Hold the bell so that the child cannot see it (to the side and a little behind the child’s ear). Ring the bell softly. If the child does not respond, try again later in the test session. **Pass** if the child responds in any way, such as eye movement, change in expression, change in breathing rate, or any other change in activity.

52. **Vocalizes (R)**
During the test, listen for sounds other than crying, such as small throaty sounds or short vowel sounds (“uh,” “eh”). If none are heard, ask the caregiver if the child makes these sounds. **Pass** if you hear the child make such sounds or if the caregiver reports that the child does this. Pass this item also if any other vocalization items are passed.

53. “Ooo”/”Aah” (R)
Listen for the child to make vowel sounds, such as “ooo” or “aah”. If these sounds are not heard, ask the caregiver if the child has made these sounds. **Pass** if you hear vowel sounds or if the caregiver reports that the child does this.

54. **Laugh (R)**
Listen for the child to laugh aloud. If this is not heard, ask the caregiver if the child does this. **Pass** if you hear the child laugh aloud or if the caregiver reports that he/she does this.

55. **Squeals (R)**
Listen for the child to make high-pitched, happy squealing sounds. If this is not heard, ask the caregiver if the child does this. **Pass** if these sounds are heard of if the caregiver reports that the child does this.
56. **Turn to rattling sound**
Stand behind the child while he/she is facing the caregiver, sitting either on the caregiver’s lap or on the table. If necessary, ask the caregiver to use the red yarn to get the child’s attention. Put one block in the cup and hold it with your hand covering the top. Being careful to keep the cup quiet while moving into position, bring the cup 6-12 inches from the child’s ear but out of the child’s line of vision. Shake the cup gently, making a soft, low sound. Repeat with the other ear. **Pass** if the child responds by turning toward the sound on both sides.

57. **Turn to voice**
While the child is facing the caregiver, either seated on the caregiver’s lap, seated on the table, or held in the caregiver’s arms, approach the child from behind to within 6-12 inches of either ear. Placing your hand between your mouth and the child so that the child does not respond to feeling your breath rather than the sounds, whisper the child’s name several times. Repeat with the other ear. **Pass** if the child turns to the direction of your voice on both sides.

58. **Single syllables (R)**
Listen for the child to use single syllables consisting of a consonant and a vowel, such as “ba,” “da,” “ga,” or “ma.” If this is not heard, ask the caregiver if the child does this. **Pass** if you hear such sounds or if the caregiver reports that the child does this.

59. **Imitate speech sounds (R)**
Repeat a sound several times (such as a cough, clicking of the tongue, or kissing sound) and see if the child imitates you. If the child does not respond, ask the caregiver if the child imitates any speech sounds. Emphasize that the sounds must be initiated by the other person, not the child. **Pass** if you hear the child imitate your sound or if the caregiver reports that the child imitates the speech sounds of others.

60. **Dada/Mama/Baba, nonspecific (R)**
Listen for the child to say “dada” or “mama” or “baba” during the test. If this is not heard, ask the caregiver if the child has said this. The words do not necessarily have to refer to a caregiver. **Pass** if the child says either “dada” or “mama” or “baba” if the caregiver reports that the child does this.

61. **Combine syllables (R)**
Listen for the child to repeat the same syllable 3 or more times, such as “dadadada” or “gagagaga.” Or babababa If this is not heard ask the caregiver if the child does this. **Pass** if the child does this or if the caregiver reports that the child does this.

62. **Jabbers (R)**
During the test, listen for the child to make unintelligible “conversation” to himself/herself, using inflection and pauses. (This is a “jibberish” in which voice patterns vary and few or no real words are distinguishable.) If this is not heard, ask the caregiver if the child “talks” to himself/herself in this way or in what sounds like a foreign language.

**Pass** if you hear the child “jabber”, or if the caregiver reports having heard the child do this.

63.  **Dada/Mama/Baba, specific (R)**
Listen for the child to say “Dada” or “Baba” to the father or “Mama” to the mother during the test. If this is not heard, ask the caregiver if the child does this.
**Pass** if the child uses either “Dada” or “Baba” or “Mama” meaningfully, or if the caregiver reports that the child does this.

*Note: A pass of this item also passes Dada/Mama Nonspecific.*

64.  **One, 2, 3, 6 words (R)**
Ask the caregiver how many words the child says and what those words are.
**Pass** One, 2, 3 or 6 words depending upon the number of acceptable words the caregiver reports. Acceptable words are any words other than “Mama,” “Dada,” or names of family members and pets.
A pass of 2, 3, or 6 words also passes the lower item(s) (for example, a pass of 3 words also passes One and 2 words).

65.  **Point to pictures – 2, 4**
Be sure to administer the Name Pictures items first. If the child names less than 4 pictures correctly, administer this item. Show the child the pictures on the back of the form. Tell the child to “Point to the bird – man – dog – cat (kitty) – horse.” Name only one picture at a time, and wait for the child to point before naming the next picture.
**Pass** Point to 2 pictures if the child correctly points to (or names) 2 or 3 pictures.
**Pass** Point to 4 pictures if the child correctly points to (or names) 4 or 5 pictures.

*Note: A pass of Point to 4 pictures also passes Point to 2 pictures.*

66.  **Combine words (R)**
Listen for the child to combine at least 2 words to make a meaningful phrase that indicates an action. If this is not heard, ask the caregiver if the child does this.
**Pass** if you hear the child do this, or if the caregiver reports that the child does this.

*Examples:
Pass – “play ball,” “want drink,” “see that,” “go bye-bye.”
Fail – “thank-you,” “peek-a-boo,” “bye-bye,” “uh-oh.”*
67. **Name pictures – 1, 4**
Show the child the pictures on the back of the form. Point to the cat, bird, horse, dog, and man one at a time, and ask “What is this?”
**Pass Name 1 picture or Name 4 pictures** according to the number of pictures correctly named.
**Pass** if the child uses the name of a pet, providing it is the same animal as pictured. “Daddy” or “boy” are acceptable answers for the man.
Note: A pass of **Name 4 pictures** also passes **Name 1 picture**, **Point to 2 pictures**, and **Point to 4 pictures**.

68. **Body parts - 6**
Show black/chocolate or white (depending on choice of a child) doll to the child. Tell the child, “Point to the doll’s nose – eyes – ears – mouth – hands – feet – tummy – hair,” naming them at a time.
**Pass** if the child correctly points to at least 6 body parts. If the caregiver indicates “stomach” or “belly” are used, pass either of these if it is correctly identified. “Belly-button” is not a pass.

69. **Speech – half understandable, all understandable**
Throughout the test, notice the intelligibility of the child’s speech (pronunciation, enunciation, actual words as opposed to “jibberish,” etc.)
**Pass Half understandable** if you have understood at least half of the child’s speech.
**Pass All understandable** if you have understood all or nearly all of what the child has said.
A pass of **All understandable** also passes **Half understandable**.

70. **Know actions – 2, 4**
Show the child the pictures on the back of the form. Instruct the child to point to the correct picture as the following questions are asked:
“Which one flies?” “Which one says meow?” “Which one talks?” “Which one barks?” “Which one carries something on the back for us?”
**Pass Know 2 actions** if 2 or 3 pictures are pointed to correctly.
**Pass Know 4 actions** if 4 or 5 pictures are pointed to correctly.
Note: A pass of **Know 4 actions** also passes **Know 2 actions**.

71. **Know adjectives – 2, 3**
Ask the child the following questions, one at a time:
“What do you do when you are cold?”
“What do you do when you are tired?”
“What do you do when you are hungry?”
**Pass Know 2 adjectives and/or Know 3 adjectives** depending upon the number of questions answered correctly.
Examples of correct answers:
Cold – Put on coat, go inside, cover up.
(Do not pass an answer about having a cold, such as “cough” or “take medicine.”)
Tired – Go to bed, lie down, sleep.
Hungry – Eat, have lunch, ask for something to eat.
Note: A pass of Know 3 adjectives also passes Know 2 adjectives.

72. Name colors – 1, 4
Place a red, a black, a white, and a yellow block on the table in front of the child. Point to one block and ask the child, “What color is this?” After the child answers, move the block around and ask the child to tell you the color of another block. Repeat for all four colors.
If necessary ask the child for a specific object which refers to a colour.
Pass Name 1 color if the child correctly names 1, 2 or 3 colors. If the child refers to an object with the same color (i.e. charcoal for black, teeth for white, blood for red) it is as pass.
Pass Name 4 colors if the child correctly names 4 colors. If the child refers to an object with the same color (i.e. charcoal for black, teeth for white, blood for red) it is as pass.
Note: A pass of Name 4 colors also passes Name 1 color.

73. Use of objects – 2, 3
Ask the child the following questions, one at a time: “What do you do with a cup?” “What is a “stool” used for?” “What is a bed used for?”
Pass Use of 2 objects or Use of 3 objects depending upon the number of questions answered correctly. Action words such as “drink,” “sit,” and “sleep” must be included in the answers. Unconventional uses such as “pour” for cup or “climb on” for stool are acceptable. Answers such as “milk” for cup or “table” for stool are unacceptable.
Note: A pass of Use of 3 objects also passes Use of 2 objects.

74. Count 1 block
Put 8 blocks on the table in front of the child. Place a piece of paper next to the blocks. Tell the child, “Put one block on the paper.” When the child appears to be finished, ask “How many blocks are on the paper?”
Pass if the child places one block and says that one block is on the paper.

75. Understand 4 prepositions
While you and the child are standing, give him/her a block. Give the following directions to the child, one at a time: “Put the block on the table.” “Put the block under the table.” “Put the block in front of me.” “Put the block behind me.” Pick up, or have the child pick up the block between directions.
Pass if the child performs all four tasks correctly.
76. **Define words – 5, 7**
Make sure the child is listening to you and then say:
“I am going to say a word and I want you to tell me what it is.”
Ask each word one at a time:
Each word may be asked 3 times if necessary. You may say “Tell me something about it,” but do not ask the child to tell you what the object is for or what to do with it.
**Pass** Define 5 words if the child defines 5 or 6 words acceptably in terms of:
1) use, 2) shape, 3) what it is made of, or 4) general category.
**Pass** Define 7 words if the child defines 7 or 8 words acceptably.

Examples of correct answers:
Ball – bounces, circle, toy, play with
River – water, fish in it, to wash themselves, to wash clothes,
Knife – to cut, to kill, chopping onions,
House – to live in, made of wood (bricks, etc.)
Banana – fruit, to eat
Firewood/wood: -burning, cooking, selling,
Fence – to keep the dog in, to climb on, around the yard
Roof – top of the room, to keep the rain off
Note: A pass of Define 7 words also passes Define 5 words.

77. **Count 5 blocks**
Put 8 blocks on the table in front of the child. Place a piece of paper next to the blocks. Tell the child, “Put five blocks on the paper.” When the child appears to be finished, ask, “How many blocks are on the paper?”
**Pass** if the child places 5 blocks and says that 5 blocks are on the paper. The child does not have to count each block out loud. Only counting (“1, 2, 3, 4, 5”) does not pass; the child must state “5” separately.
Note: A pass of Count 5 blocks also passes Count 1 block.

78. **Opposites – 2**
Say each of the following sentences slowly and distinctly, one at a time, and wait for the child to fill in the blank. Each sentence may be repeated 3 times if necessary.
“If a horse is big, a mouse is______.”
“If a stone is heavy, a feather/leaf is …..”
“If the sun shines during the day, the moon shines during the_____.”
**Pass** if the child completes two sentences correctly.
Examples of correct answers:
Big – little, small, tiny
Heavy–light, flying
Day – night, dark, black, evening

D. Gross Motor

79. Equal Movements
While the child is lying on his/her back, watch the activity of the child’s arms and legs.
Pass if the child moves arms and legs equally. Fail if one arm and/or leg does not move as much as the other.

80. Lift head (R)
Place the child on his/her stomach on a flat surface
Pass if the child at least momentarily lift his/her head so that the chin is off the surface without being turned to either side or if the caregiver reports that the child can do this.

81. Head up 45 degrees
Place the child on his/her stomach on a flat surface
Pass if the child lifts his/her head so that his/her face makes an approximate 45 degree angle with the surface for at least several seconds. The child will be looking at the table in front of him/her.
Note: a pass of Head Up 45 Degrees also passes Lift Head.

82. Head up 90 degrees
Place the child on his/her stomach on a flat surface.
Pass if the child lifts head and chest up so that his/her face makes a 90 degree angle with the surface for at least several seconds. The child will be looking straight ahead and will usually be supported on his/her forearms.
Note: a pass of Head Up 90 Degrees also passes Head Up 45 Degrees and Lift Head.

83. Sit, Head steady
Hold the child in a sitting position
Pass if the child holds his/her head upright and steady with no bobbing motion for at least several seconds.

84. Bear Weight on Legs
Hold the child in a standing position so that his/her feet rest on the table. Slowly loosen your hand support to allow the child’s weight to be supported on his/her legs and feet. Pass if the child supports his/her weight on the legs for several seconds.
85. **Chest Up, Arm support**
   Place the child on his/her stomach on a flat surface
   Pass if the child lifts his/her head and chest off the surface using the support of outstretched arms, so that he/she is looking straight ahead or up.

86. **Roll over (R)**
   During the test, notice if the child rolls from back to stomach or from stomach to back. If this is not seen, ask the caregiver if the child has rolled completely over, from back to stomach or from stomach to back, at least twice.
   Pass if you see the child completely over or if the caregiver has seen the child do this at least twice.

87. **Pull to sit, No head lag**
   Place the child on his/her back. Grasp the child’s hands and wrists and gently and slowly pull him/her to a sitting position. If there is immediate head lag, do not continue to pull the child all the way to the sitting position.
   Pass if the child’s head does not lag at any time while the body is being pulled up. The child will also “pull” with you, using shoulder and neck muscles.

88. **Sit, No Support**
   Hold the child in a sitting position on the table. Making sure the child does not fall, slowly remove your hands.
   Pass if the child sits alone for 5 seconds or more. The child may put hands on legs or on the table for support.

89. **Stand holding on**
   Place the child in a standing position holding on to a solid object (not a person).
   Pass if the child stands holding on for 5 seconds or more.

90. **Pull to stand**
   Place the child sitting on the floor beside a chair or low table. Encourage him/her to stand up by putting a toy (like rattle or “calle” or “elela”) on the seat of the chair on the table.
   Pass if the child pulls himself/herself to a standing position.

91. **Get to sitting (R)**
   While the child is lying down (on back or stomach), crawling, or standing holding on, encourage him/her to get into a sitting position. If this is not seen, ask the caregiver if the child can get into a sitting position by himself/herself.
   Pass if you see the child do this or if the caregiver reports that the child can do this.
92. **Stand – 2 seconds**
   Place the child standing on the floor. After the child seems balanced, try to remove the support.
   **Pass** if you see the child stand without any support for 2 or more seconds.

93. **Stand alone**
   Administration procedure is the same as for **Stand- 2 seconds**.
   **Pass** if the child stands alone 10 or more seconds.
   Note: a pass of **Stand alone** also passes **Stand- 2 seconds**, and **Stand Holding On**.

94. **Stoop and recover**
   While the child is standing on the floor away from all support, place a toy or ball on the floor and encourage the child to pick it up.
   **Pass** if the child stoops to pick up the object and returns to standing without holding on or sitting down.

95. **Walk well**
   Watch the child walk.
   **Pass** if the child has good balance, rarely falls, and does not tip from side to side.

96. **Walk backwards (R)**
   Encourage the child to walk backwards by demonstration, or notice if the child does this during the test. If you do not see the child do this, ask the caregiver if the child walks backwards, possibly when pulling a toy or opening a door.
   **Pass** if the child takes several steps backwards without sitting down, or if the caregiver reports that the child can do this.

97. **Runs**
   Encourage the child to run, possible by throwing the ball for him/her to chase.
   **Pass** if the child can run (not fast walk) smoothly without falling or tripping.

98. **Walk up Steps (R)**
   Ask the caregiver how the child gets up steps.
   **Pass** if the child walks up steps (where there are steps in homes), and/or walk up-ward on steep location/ climbs and passes over an elevated door-step.
   a. The child may use a rail or wall for support, but may not hold on to a person.

99. **Kick ball forward**
   Place the ball about 6 inches in front of the standing child. Tell him/her to kick it. You may show the child how to do this
Pass if the child kicks the ball forward without holding on to any support. Sliding or pushing the ball with the foot, hitting the ball on the back swing, or stepping on the ball are failures.

100.  **Jump Up**
Tell the child to jump. You may show the child how to do this.
Pass if the child jumps, getting both feet off the floor at the same time. The child does not have to land in the same spot. The child may not run before jumping, or hold on to any support.

101.  **Throw ball overhand**
Give the child the ball and stand at least 3 feet from him/her. Tell the child to throw the ball to you using an overhand throw. You may show the child how to throw overhand. Three trials may be given.
Pass if the child throws the ball within arm’s reach of you between your knees and head, using an overhand throw (not sideways, or underhand). The ball may bounce before it reaches you if it was between your knees and head before beginning the downward arc. Throwing the ball directly downward or away from you are failures.

102.  **Broad jump**
Place a piece of paper (8-½ “ by 11”) or placemat on the floor and show the child how to do a standing broad jump across the width of the paper (8-½ “). Then tell the child to do it. You may give three trials, if necessary.
Pass if the child jumps, with both feet together, over the paper without touching it.

103.  **Balance-each foot 1, 2, 3, 4, 5, 6 seconds**
Have the child stand away from all support. Show the child how to balance on one foot. Tell him/her to do this as long as he/she can, giving three trials (unless he/she balances for 6 seconds or more on the first trial). Record the longest time of these three trials. Then tell the child to balance on the other foot, giving three trials if necessary. Record the longest time of these three trials.
Pass the appropriate balancing item or items according to the shortest of these 2 recorded items.
Example: if the longest time for the right foot is 3 seconds and the longest time for the left foot is 5 seconds, the child passes balancing items for 1, 2, and 3 seconds.
Note:a pass of 2, 3, 4, 5 or 6 seconds also passes all lower items. For example, a pass of Balance-each foot-3 seconds also passes Balance-each foot 1 second and Balance-each foot 2 seconds.

104.  **Hops**
With the child away from all support, tell him/her to hop on one foot. You may show the child how to do this.
Pass if the child hops on one foot 2 or more times in a row, either in place or over a distance, without holding on to anything.

105.  *Heel-to-toe walk*

Demonstrate how to walk in a straight line placing the heel of one foot in front of and touching the toe of the other. Walk about 8 steps like this and then tell the child to do it (you may compare this to a tight-rope walk). If necessary give several demonstrations. Allow 3 trials if needed.

Pass if the child can walk in a straight line for 4 or more steps placing the heel no more than 1 inch in front of the toe, without holding on to any support.
TEST BEHAVIOR

Typical
  Yes
  No

Compliance (See Note 31)
  Always Complies
  Usually Complies
  Rarely Complies

Interest in Surroundings
  Alert
  Somewhat Disinterested
  Seriously Disinterested

Fearfulness
  None
  Mild
  Extreme

Attention Span
  Appropriate
  Somewhat Distractable
  Very Distractable
Bayley questionnaire

Child’s date of birth  Day________, Month________, Year____________
Date of data collection  Day________, Month________, Year____________
Calculated age of the child months_______ Days_____

Bayley Age classification

<table>
<thead>
<tr>
<th>Ages</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 months 0 days–10 months 30 days</td>
<td>H</td>
</tr>
<tr>
<td>11 months 0 days–13 months 15 days</td>
<td>i</td>
</tr>
<tr>
<td>13 months 16 days–16 months 15 days</td>
<td>J</td>
</tr>
<tr>
<td>16 months 16 days–19 months 15 days</td>
<td>K</td>
</tr>
<tr>
<td>19 months 16 days–22 months 15 days</td>
<td>L</td>
</tr>
<tr>
<td>22 months 16 days–25 months 15 days</td>
<td>M</td>
</tr>
<tr>
<td>25 months 16 days–28 months 15 days</td>
<td>N</td>
</tr>
<tr>
<td>28 months 16 days–32 months 30 days</td>
<td>O</td>
</tr>
<tr>
<td>33 months 0 days–38 months 30 days</td>
<td>P</td>
</tr>
</tbody>
</table>
Cognitive

Rest one edge of the table so that the mirror is approximately 8-10 inches in front of the child. Position yourself so that your head is not directly above the mirror and make sure that the child sees only his or her own image. Encourage the child to look in the mirror. Allow the child time to build up a response. If the child is distributed by novelty, bring the mirror into his or her range of vision gradually in order to avoid startling him or her.

1 point: Child plays with the mirror image by looking at it and smiling or laughing, patting it, banging it, reaching playfully for it or mouthing it.

0 points: Child displays disinterest or distress by turning away or crying. Child approaches mirror but does not attempt to interact with the image.

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting</td>
<td>Mirror</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>19(Approaches), 22(Responds Positively)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plays With String

Holding the ring, dangle the string at the child’s midline, approximately 8-10 inches in front of him or her, and level with the eyes. Move the ring slightly to attract the child’s attention to it, then hold it stationary.

If the child does not reach for the string, place the ring on the table, outside his or her reach, but extend the string toward the child so he or she can easily reach it. Maintaining your hold on the string so the child can reach only the string.

1 point: Child plays with the string by picking it up, chewing it, attempting to mouth it, or manipulating it.

0 points: Child looks at the string but makes no attempt to play with it.

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting</td>
<td>Ring with string</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Bangs in play
During testing, observe the child to see if he or she uses one or both hands or an object to purposely bang the table or other surface. If the child does not display this behavior, offer the child spoon or other hard object, placing it in his or her hand if necessary.

**1 point:** Child purposely bangs in play time during the testing.

**0 point:** Child makes only accidental contact with the table, even if that contact produces a noise.

### Searches for Fallen Object

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or sitted</td>
<td>Squeeze toy</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the squeeze toy on the table edge closest to the child and hold it in place. When the child is attending to the toy (you may squeeze the toy to gain his or her attention) let it fall to the floor.

**1 point:** Child looks for the fallen toy by looking toward the floor.

**0 point:** child does not show any indication of searching. Child searches but does not look toward the floor.

### Bell Series: Manipulates

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>Bell</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Hold the bell in front of the child, several inches above the table surface. Gently ring the bell while the child is looking at it: then set it down within the child’s reach. If the child does not pick up the bell, ring it again slightly harder it to him or her.

If the child is primarily interested in banging the bell, move the child away from the table after he or she picks up the bell.

**1 point:** Child manipulates (e.g., touches, shakes, grasp, rings) the bell while looking at it with interest in its details. For example, score 1 point if the child manipulates the clapper or turns the bell around while watching the clapper move or ringing the bell.

**0 point:** Child shows no interest in the bell. Child only bangs or mouths bell, rather than exploring it visually and with his or her hands.

### Picks Up Block Series: Reaches for Second Block

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>3 blocks without holes</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

| Series items | 27(Reaches for Second Block), 33(Retains 2 of 3 Blocks), 37(3 Blocks) |
One at a time, place the blocks on the table within the child’s reach. Allow the child time to pick up the first block before you place the next one on the table. If the child does not pick up either block, offer one of the blocks to him or her by holding it up in front of the child. Place the block in the child’s hand if the child does not grasp it. Present the third block and observe the child’s behavior.

1 point: While holding the first block, child reaches for, touches or attempts to grasp the second block and observe the child’s behavior.

0 points: Child is interested only in playing with the first block you placed in his or her hand.

### 28 Pulls Cloth to Obtain Object

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>Washcloth and object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the object and washcloth in front of the child. Allow the child to play briefly with both. Then take the object and washcloth from him or her and spread the washcloth out in the table, in front of the child and within his or her reach. Place the object on the edge of the washcloth closest to you, but out of the child’s reach.

1 point: Child pulls the washcloth purposely towards him or her to obtain the object. He or she must try to reach for the object immediately after pulling the object over the washcloth.

0 points: Child shows no interest in the object or shows more interest in the washcloth than the object.

### 29 Pulls Strings Adaptively

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>Ring and string</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Suspend the ring by string so that the lower edge of the ring is at the child midline, level the eyes and approximately 8-10 inches from him or her. Move the ring slightly to attract the child’s attention; then hold it stationary. Allow the child time to notice the string toward him or her so that the child can easily reach it.

1 point: child picks up the string, purposely pulls it to secure the ring and then grasps the ring.

0 points: Child pulls the string but does not grasp the ring.

### 30 Retains Both Blocks

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>2 blocks without holes</td>
<td>1</td>
<td>3 seconds</td>
</tr>
</tbody>
</table>
One at a time, place the blocks on the table, within the child’s reach. Allow the child time to pick up the first block before you place the next one on the table. If the child does not pick up the first or second block in each of the child’s hands.

1 point: Child holds two blocks simultaneously and retains them for the last 3 seconds.
0 points: Child retains the blocks by resting them on the table.

### Bell Series: Rings Purposely

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>Bell</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Series items: 26 (manipulates), 31 (Rings Purposely)

Hold the bell in front of the child, several inches above the table surface. Gently ring the bell while the child is looking at it; then set it down within the child’s reach. If the child does not pick up the bell, ring it again slightly harder, then hand it to him or her.

If the child primarily interested in banging the bell, move him or her away from the table after he or she picks up the bell.

1 point: Child holds the bell by the handle with one or both hands and purposely rings it, showing evidence of listening to the sound or of imitative shaking.
0 points: Child shows no interest in bangs, mouths or accidentally rings the bell.

### Looks at pictures

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>Picture book</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the book on the table, in front of the child. Open the book to the first page and attract the child’s attention to it. Then give the child an opportunity to hold the book, turn the pages and look at the pictures. You may help hold the book if the child appears to be frustrated by it under movement.

1 point: Child regards one or more pictures with interest or recognition, even if his or her interest is of short duration. Child must display evidence of looking at a specific picture rather than looking at the book in general. Evidence includes pointing to, touching or staring at a picture or pictures.
0 points: Child touches or mouths books but shows no interest in specific pictures.

### Picks up Block Series: Retains 2 of 3 blocks

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>3 blocks without hales</td>
<td>1</td>
<td>3 seconds</td>
</tr>
</tbody>
</table>
One at a time, place the blocks on the table within the child’s reach. Allow the child to pick up the first block before you place the next one on the table. If the child does not pick up either block, offer one of the blocks for him or her by holding it up in front of the child. Place block in the child’s hand if the child does not grasp it. Present the third block and observe the child’s behavior.

1 point: Child retains the first two blocks for at least 3 seconds after visually attending to the third.

0 points: Child drops one or both blocks to reach for the third block. Child rests the blocks on the table, presses them on the table or against his or her body or attempts to put one in his or her mouth (do not allow the child to do so). Child shows no interest in the third block.

<table>
<thead>
<tr>
<th>34</th>
<th>Searches for Missing Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td>Supported sitting or seated</td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>3 blocks without holes and cup with handle</td>
</tr>
<tr>
<td><strong>Trials</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the cup and three blocks in front of the child. While the child is watching, place the three blocks into the cup. Then tell the child to take them out. You may allow the child up to 2 minutes to complete the task as long as the child is attending to the task.

1 point: Child takes all three blocks out of the cup individually or by dumping them out simultaneously, within the 2 minute time limit.

0 points: Child shakes or plays with cup, but does not rake out any blocks. Child stops removing blocks after one or two blocks or the block spill out accidentally.
### Block Series: 1 Block

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting</td>
<td>9 blocks and cup with handle</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>or seated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Series items**: 36(1 block), 54(9 Blocks)

*Note. All nine blocks will fit into the cup, but only if arranged properly.*

Place the cup in the table, within the child’s reach, and with the handle pointing forward you. Leave eight blocks out of the child’s sight. Place a block in the cup, then take it out and hand it to the child. Tell the child to put the blocks in the cup as you point from the block to the cup. You may encourage the child several times.

If the child releases the block into the cup, place the other eight blocks on the table and tell the child to put all the blocks into the cup as you point from the block to the cup. You may encourage the child to several times. Do not hand any blocks to the child. If the child knocks the cup over you may reposition it. Hold the cup steady for the child by grasping the handle.

On the record Form, indicate the number of blocks that the child puts in the cup.

**1 point**: child places at least one block in or over the cup, even if he or she does not release it.

Score one point if, after a block is successfully placed, it is removed or the cup is knocked over and the blocks are spilled; or if the child’s hand is inserted into the cup along with the block.

**0 points**: Child does not pick up block. Child picks up block but does not put it near the cup.

### Picks Up Block Series: 3 Blocks

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>3 blocks without holes</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

**Series items**: 27(reaches for second block), 33(retains 2 of 3 blocks), 37(3 blocks)

One at a time, place the blocks on the table within the child’s reach. Allow the child time to pick up the first block before you place the next one on the table. If the child does not pick up either block, offer one of the blocks to him or her by holding it up in front of the child. Place the block in the child’s hand if the child does not grasp it. Present the third block and observe the child behavior.

**1 point**: Child retains the first two blocks in either one or both hands, while attempting to secure the third block by banging it, reaching with his or mouth or by more adaptive scoping, even if unsuccessful.

**0 points**: child exhibits no interest in securing the third block. Child attempts to place one of the first two blocks in his or her mouth( do not allow the child to do so) in order to secure the third block. Child releases one of the two blocks to pick up the third block.

### Explores Holes in Pegboard

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting</td>
<td>Pegboard</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>or seated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Place the pegboard on the table, in front of the child. Point out the holes in the pegboard by poking a finger into first one hole and then another. Do not guide the child’s hand or fingers in any way.

1 point: Child intentionally pokes a finger or thumb into at least one hole.
0 points: Child shows no interest in the pegboard, or does not attempt to poke a finger into at least one hole.

<table>
<thead>
<tr>
<th>39</th>
<th>Pushes Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Supported sitting or seated</td>
<td>Car</td>
</tr>
</tbody>
</table>

Slowly push the car across the table and through the child’s field vision. Then push the car to the child.

1 point: Child intentionally pushes the car across the table and through the child’s field vision. Then push the car to the child.
0 points: Child makes the car move other than by intentionally pushing it.

<table>
<thead>
<tr>
<th>40</th>
<th>Finds Hidden Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Glitter bracelet and washcloths</td>
</tr>
</tbody>
</table>

Place the bracelet and the two washcloths on the table in a horizontal row within the child’s reach. Show the bracelet to the child and stay, See bracelet. I am going to hide it. Look I’m hiding it under there. Be sure that the child is watching. Place the bracelet under the washcloth to the child’s left, then ask the child to find it. A second administration should be conducted, hiding the bracelet under the washcloth to the child’s right. Presentation on both left and right sides constitutes one trial. If the child is unsuccessful on either the left or right administration, present both sides again as Trail 2.

If the child attempts to grab the bracelet or washcloths, ask the caregiver to help keep the child’s hands off the table momentarily while you place the objects.

For each trail, indicate on the Record Form whether the child successfully finds the bracelet on each side.

1 point: Child finds the bracelet by looking first under the correct washcloth when hidden on both the left and the right side (not necessarily during the same trail)
0 points: Child does not attempt to find the object. Child is successful on only one side.

<table>
<thead>
<tr>
<th>41</th>
<th>Suspends Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Ring with string</td>
</tr>
</tbody>
</table>
Suspend the ring by string so that the lower edge of the ring is at the child midline, level the eyes and approximately 8-10 inches from him or her. Move the ring slightly to attract the child’s attention; then hold it stationary. Next, place the ring on the table, out of the child’s reach, but extend the string toward the child so that he or she can easily reach it. Observe the child’s efforts to secure the ring and suspend the ring in imitation. If the child cannot suspend the ring because he or she is holding it too close to the table, demonstrate again, holding the ring away from the table. Then ask the caregiver to reposition the child so that the or she is able to suspend the ring without touching the table surface.

1 point: Child obtains the ring and suspends it by the string without touching the table surface.
0 points: Child suspends the ring while partially holding ring or ring rests on the table surface.

<table>
<thead>
<tr>
<th>42</th>
<th>Removes Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Food pelet and bottle(without lid)</td>
</tr>
</tbody>
</table>

Note. Inform the caregiver that the pellet is made of cereal. Obtain the caregiver’s consent before allowing the child to eat the item.

Place the pellet and bottle on the table, in front of the child. While the child is watching, put the pellet in the bottle and shake the bottle so that he or she can see the pellet inside it. Then hand the bottle to the child and tell him or her to get it out. You may administer this item three times.

1 point: Child purposely removes the pellet from the bottle, using some form of directed effort. Although dumping the pellet from the bottle is most efficient, you may give credit for other strategies such as shaking the bottle to remove the pellet if the child’s actions are purposeful and directed towards the end. Observing the direction of the child’s gaze is important to determine that removal of the pellet from the bottle is intentional.

0 points: Child gets the pellet out of the bottle accidentally. Child shows no interest trying to get the pellet out of the bottle.

<table>
<thead>
<tr>
<th>43</th>
<th>Clear Box: Front</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Elevated supine</td>
<td>Clear bo, small object of interest and stopwatch</td>
</tr>
</tbody>
</table>

Simultaneously place the object and the box on the table so that the open end of the box faces the child and the object is enclosed by the box and positioned against the side of farthest from the open end. The box should be close enough to the child that he or she can see the object only through the top( the child should not be able to see the objects through the open end without purposely repositioning). Hold the box down by placing your thumb and forefinger on its back corners so that you do not obscure the child’s view of the object. Say, Get the (name of the
Go ahead. Get it. Begin timing. Allow the child approximately 20 seconds to retrieve the object.

1 point: Child retrieves the object through the open end of the box within approximately 20 seconds.

0 points: Child does not retrieve the object within approximately 20 seconds.

<table>
<thead>
<tr>
<th>44</th>
<th>Squeezing Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Squeeze toy</td>
</tr>
</tbody>
</table>

Place the squeeze toy on the table, in front of the child. Squeeze the toy (so that it squeaks) while the child is watching you. Hand the toy to the child and allow the child time to squeeze.

1 point: Child attempts to squeeze the toy to make the sound. The toy does not need to make a squeaking noise.

0 points: Child does not attempt to squeeze the toy. Child produces squeezing noise by banging the toy on the table.

<table>
<thead>
<tr>
<th>45</th>
<th>Finds Hidden Object (Reversed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Glitter bracelet and washcloths</td>
</tr>
</tbody>
</table>

Place the bracelet and the two washcloths on the table in a horizontal row within the child’s reach. Show the bracelet to the child and stay, See bracelet. I am going to hide it. Look I’m hiding it under there. Be sure that the child is watching. Place the bracelet under the washcloth to the child’s left, then ask the child to find it. A second administration should be conducted, hiding the bracelet under the washcloth to the child’s right. Presentation on both left and right sides constitutes one trial. If the child is unsuccessful on either the left or right administration, present both sides again as Trail 2.

If the child attempts to grab the bracelet or washcloths, ask the caregiver to help keep the child’s hands off the table momentarily while you place the objects.

For each trial, indicate on the Record Form whether the child successfully finds the object on each side.

1 point: Child finds the bracelet by looking first under the correct washcloth when hidden on both the left and the right sides (not necessarily during the same trail).

0 points: Child does not attempt to find the bracelet. Child is successful on only one side.

<table>
<thead>
<tr>
<th>46</th>
<th>Remove Lid from Bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Bottle with id</td>
</tr>
</tbody>
</table>

While the child watches, screw the lid loosely onto the container turning the full revolution. Place the container on the table, in front of the child and tell the child to take the lid off. Take care not to model how to remove lid.

1 point: Child unscrews the lid until it comes off.
**0 points:** Child does not unscrew the lid enough for the lid to come off or does not attempt to remove the lid at all. Child requires adult assistance to hold the bottle. Child pulls the lid off without attempting to unscrew the lid.

<table>
<thead>
<tr>
<th>47</th>
<th>Pegboard series: 2 Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Seated</td>
<td>47(2 holes), 55(6 pegs)</td>
</tr>
</tbody>
</table>

Insert the pegs in the pegboard so that the child does not see you insert them. Place the pegboard on the table, directly in front of the child and within his or her reach. Remove the pegs one at a time and place them between the child and the pegboard, at midline and perpendicular to the pegboard. Pointing first to the pegs and then to the holes, say, **Put them all in.** Start timing when the child picks up the first peg. Allow the child 70 seconds to place the pegs. Stop timing when the child places all six pegs or when 70 seconds have elapsed. Administer all three trials. If the child is unsuccessful in placing at least one peg on the first trial, discontinue the task. You may hold the board steady for the child and you may retrieve any pegs that roll away, but do not hand any pegs to the child or demonstrate placing the pegs into the holes.

For any trial in which the child places all six pegs in the pegboard, use the Record Form to record the completion time. This information will be used to score Cognitive Item 55 in the series.

**1 point:** Child places at least one peg two or more times in the same hole or different holes or places two or more pegs in the pegboard within 70 seconds. Score 1 point if, after two successful placement, one or more pegs are removed.

**0 points:** Child does not place at least two pegs (or one peg more than once) in the pegboard within 70 seconds.

<table>
<thead>
<tr>
<th>48</th>
<th>Relational Play Series: Self</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Social sitting</td>
<td>Doll, bear, plastic cups, spoons, small ball, washcloths and several blocks</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
<td>48(Self), 53(others)</td>
</tr>
</tbody>
</table>

Place the objects in front of the child. Say, **I'm thirsty. I need a drink.** Take a cup and pretend to drink from it. Observe if the child picks up an object and begins to play. If the child does not initiate play, encourage the child by playing with the object.

**1 point:** Child demonstrates relational play, using objects for how they are intended on him or herself (e.g. pretend to eat and brings the spoon to his or her mouth, washes his or her face with a washcloth) score 1 point if the child demonstrates relational play on others (more advanced relational play).
**0 points:** Child only imitates your modeled behavior (i.e., the child does not receive 1 point for pretending to drink) and does not display any novel or spontaneous relational play toward self.

### Pink Board Series: 1 Piece

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Pink board, red block set(square, circle, triangle) and stopwatch</td>
<td>1</td>
<td>180 seconds</td>
</tr>
<tr>
<td>Series items</td>
<td>49 (1 piece), 56 (completes)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Place the pieces correctly in the board, holding it in your lap or under the table so that the child does not see you insert them. Place the board on the table, directly in front of the child, with the circle piece nearest him or her.

Remove the pieces from the board and place them between the board and the child in the following order, beginning at the child’s left and moving to his or her right: square, circle, and triangle. With the gesture toward the board, tell the child to put the pieces in. Be careful not to indicate any specific area on the board. Begin timing.

Do not point directly to any hole. Allow the child up to 180 seconds to place the pieces.

Use the Record Form to record the number of pieces placed correctly within 180 seconds.

**1 point:** Child correctly places at least one piece within 180 seconds.

**0 points:** Child does not correctly place any pieces within 180 seconds.

### Find Hidden Object (Visible Displacement)

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Glitter bracelet and 2 washcloths</td>
<td>2</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the bracelet and the two washcloths on the table in a horizontal row within the child’s reach. Show the bracelet to the child and stay, **See bracelet. I am going to hide it. Look I’m hiding it under here.** Be sure that the child is watching. Place the bracelet under the washcloth to the child’s left. Then, with the child still watching, immediately uncover the bracelet and place it under the washcloth to the right. In a playful voice say, **I’m hiding it again.** Ask the child to find it. A second administration should be conducted, hiding the bracelet under the washcloth at the child’s right and then moving it under the washcloth on the left. Presentation on both left and right side constitutes one trail. If the child is unsuccessful on either the left or right administration, present both sides again as Trail 2.

If the child attempts to grab the bracelet or washcloths, ask the caregiver to help keep the child’s hands off the table momentarily while you place the objects.

For each trail, indicate on the Record Form whether the child successfully finds the object on each side.

**1 point:** Child finds the bracelet by looking first under the correct washcloth when hidden on both the left and right sides (not necessarily during the same trial).

**0 points:** Child does not attempt to find the object. Child is successful on only one side.
### Blue Board Series: 1 Piece

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Blue board, blue block set( 4 round, 5 square) and stopwatch</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place all the nine pieces on the side of the table closest to you. Place the board on the table in front of the child. Hand the child a round piece. Motioning towards the holes, say, Put it where it belongs. Do not cue the child as to correct placement of the pieces. Start timing as soon as the child grasps the piece.

Proceed by alternately handling the child a square piece, then a round piece, one at a time, until the child has placed each of his or her satisfaction, regardless of whether the pieces are correctly placed. Stop timing when the child places all nine pieces correctly or when 150 seconds elapse.

Use the Record Form to record the number of pieces placed correctly within the time limit.

**1 point:** Child correctly places at one piece within 150 seconds. To be correctly placed, a piece must fit completely in the hole. Score 1 point if, after a piece is successfully placed in the correct position, it is removed.

**0 points:** Child does not correctly place any pieces within 150 seconds.

### Clear Box: Slides

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Clear box, small object of interest and stopwatch</td>
<td>2</td>
<td>20 seconds per side</td>
</tr>
</tbody>
</table>

Simultaneously place the object and the box on the table so that the open end of the box faces the child’s left and the object is enclosed by the box and positioned against the slide farthest from the open end. The box should be close enough to the child that he or she can see the object only through the top (the child should not be able to see the object through the open end without purposely repositioning). Hold the box down by placing your thumb and forefinger on its back corners so that you do not obscure the child view of the object. Say, *Get the* (name of the object). **Go ahead. Get it.** Allow the approximately 20 seconds to retrieve the object. Then present the clear box with opening on the right and encourage the child to retrieve the object.

**1 point:** Child retrieves the object through the open end of the box when presented on the left and the right within approximately 20 seconds per side.

**0 points:** Child does not retrieve the object from both sides within approximately 20 seconds per side.

### Relation play Series: Others

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated or social sitting</td>
<td>Doll, bear, plastic cups, spoons, small ball, washcloths and several blocks</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>
Place the objects in front of the child. Say, I’m thirsty. I need a drink. Take a cup and pretend to drink from it. Observe if the child picks up an object and begins to play. If the child does not initiate play, encourage the child by playing with the object.

1 point: Child demonstrates relational play, using objects for how they are intended on him or herself (e.g., offers the care giver a drink from the cup, covers the bear with the washcloth)

0 points: Child only imitates your modeled behavior (i.e., the child does not receive 1 point for pretending to drink) and does not display any novel or spontaneous relational play on others. Child plays relational play only using him or herself.

### Block Series: 9 Blocks

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported sitting or seated</td>
<td>9 blocks and cup with handle</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

**Note.** All nine blocks will fit into the cup, but only if arranged properly.

Place the cup in the table, within the child’s reach, and with the handle pointing toward you. Leave eight blocks out of the child’s sight. Place a block in the cup, then take it out and hand it to the child. Tell the child to put the blocks in the cup as you point from the block to the cup. You may encourage the child several times.

If the child releases the block into the cup, place the other eight blocks on the table and tell the child to put all the blocks into the cup as you point from the block to the cup. You may encourage the child to several times. Do not hand any blocks to the child. If the child knocks the cup over you may reposition it. Hold the cup steady for the child by grasping the handle.

On the record Form, indicate the number of blocks that the child puts in the cup.

1 point: Child places all nine blocks inside the cup at one time.

0 points: Child does not place all nine blocks at one time.

### Pegboard series: 6 Pegs

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>47(2 holes), 55(6 pegs)</td>
<td>3</td>
<td>70 seconds per trial</td>
</tr>
</tbody>
</table>

Insert the pegs in the pegboard so that the child does not see you insert them. Place the pegboard on the table, directly in front of the child and within his or her reach. Remove the pegs one at a time and place them between the child and the pegboard, at midline and perpendicular to the pegboard. Pointing first to the pegs and then to the holes, say, Put them all in. Start timing when the child picks up the first peg. Allow the child 70 seconds to place the pegs. Stop timing when the child places all six pegs or when 70 seconds have elapsed. Administer all three trials. If the child is unsuccessful in placing at least one peg on the first trial, discontinue
the task. You may hold the board steady for the child and you may retrieve any pegs that roll away, but do not hand any pegs to the child or demonstrate placing the pegs into the holes.

For any trial in which the child places all six pegs in the pegboard, use the Record Form to record the completion time. This information will be used to score Cognitive Item 55 in the series.

1 point: Child places all six pegs in the pegboard within 70 seconds. All six pgs must be in the pegboard at the same time.

0 points: Child does not place all six pegs in the pegboard within 70 seconds.

<table>
<thead>
<tr>
<th>56</th>
<th>Pink Board Series: Completes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Pink board, red block set( square, circle, triangle) and stopwatch</td>
</tr>
<tr>
<td>Series items</td>
<td>49 ( 1 piece), 56 ( completes)</td>
</tr>
</tbody>
</table>

Place the pieces correctly in the board, holding it in your lap or under the table so that the child does not see you insert them. Place the board on the table, directly in front of the child, with the circle piece nearest him or her.

Remove the pieces from the board and place them between the board and the child in the following order, beginning at the child’s left and moving to his or her right: square, circle, triangle. With the gesture toward the board, tell the child to put the pieces in. be careful not to indicate any specific area on the board. Begin timing.

Do not point directly to any hole. Allow the child up to 180 seconds to place the pieces.

Use the Record Form to record the number of pieces placed correctly within 180 seconds.

1 point: Child correctly places all three pieces within 180 seconds.

0 points: Child does not correctly place all the pieces within 180 seconds.

<table>
<thead>
<tr>
<th>57</th>
<th>Uses Pencil to Obtain Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Pencil and small red duck</td>
</tr>
</tbody>
</table>

Place the duck on the table, far enough out of the child’s reach that he or she must use three or four motions of the pencil to secure it. With a sweeping motion, use the side of the pencil to push the duck toward the child while saying, See how I make the duck come to me? Return the duck to its original position and place the pencil within the child’s reach. Say, make the duck come to you.

If the child does not respond, readminister this item (Trail 2), first positioning yourself beside the child and demonstrating with motions like those expected of him or her and saying, Come here duck. Come here duck. Return the duck to its original position and place the pencil within the child’s reach.

1 point: Child uses a sweeping motion with the pencil to attempt to obtain the duck, even if he or she does not secure it.

0 points: Child hits or pushes the duck with the pencil, using random swings of the pencil without intending to pull the duck toward him or her.
**58**  
\begin{tabular}{|c|c|c|c|}
\hline
Position & Materials & Trials & Time \\
\hline
Seated & Blue board, blue block set( 4 round, 5 square) and stopwatch & 1 & Not timed \\
\hline
\end{tabular}

Place all the nine pieces on the side of the table closest to you. Place the board on the table in front of the child. Hand the child a round piece. Motioning towards the holes, say, **Put it where it belongs**. Do not cue the child as to correct placement of the pieces. Start timing as soon as the child grasps the piece.

Proceed by alternately handling the child a square piece, then a round piece, one at a time, until the child has placed each of his or her satisfaction, regardless of whether the pieces are correctly placed. Stop timing when the child places all nine pieces correctly or when 150 seconds elapse. Use the Record Form to record the number of pieces placed correctly within the time limit.

**1 point**: Child correctly places at four pieces within 150 seconds. To be correctly placed, a piece must fit completely in the hole.

**0 points**: Child correctly places three or fewer pieces within 150 seconds.

**59**  
\begin{tabular}{|c|c|c|c|}
\hline
Position & Materials & Trials & Time \\
\hline
Seated & Story book & 1 & Not timed \\
\hline
\end{tabular}

Place the story book on the table, in front of the child. Open it to the first page and say, Look! Allow the child to explore the book, look at the pictures and turn the pages if he or she wants. Then say, **Let's read the story**.

Reposition yourself so that you are sitting beside the child. Retrieve the book from the child, open it and begin reading by saying, **Listen**.

**1 point**: Child attends to the entire story. Attending includes decreasing motor activity and looking at the pictures, listening to the words, or talking to you about the pictures as you read. Disregard momentary lapses of attention.

**0 points**: Child shows no interest in the book, or does not attend to the entire story.

**60**  
\begin{tabular}{|c|c|c|c|}
\hline
Position & Materials & Trials & Time \\
\hline
Seated & Pink board and red block set(square, circle, triangle) & 1 & Not timed \\
\hline
\end{tabular}

Place the pieces correctly in the board, holding it in your lap or under the table so that the child does not see you insert them. Place the board on the table, directly in front of the child, with the circle piece nearest him or her.
Remove the pieces from the board and place them between the board and the child, in the following order, beginning at the child’s left and moving to his or her right: square, circle, triangle. Then say, **Watch what I do.**

Leaving the board on the table surface, slowly and deliberately rotate the board 180° so that the square hole is at the child’s right. Then say, **Now you put them back.**

As you gesture from the pieces to the board, do not point directly to any hole. Do not permit the child to return the board to its original position.

**1 point:** Child correctly places all the three pieces while the board is in the rotated position.

**0 points:** Child does not place all the pieces correctly.

<table>
<thead>
<tr>
<th>61</th>
<th>Object assembly (Ball)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Ball puzzle and stopwatch</td>
</tr>
</tbody>
</table>

Place the two pieces on the table about 6 inches in front of the child, using the arrangement shown in the figure below.

As you slowly assemble the puzzle, say, **These pieces make a ball. See, they fit together like this.**

Begin timing after giving the child the directions or when the child begins working on the puzzle, whichever comes first. Allow the child 90 seconds to assemble the puzzle. This constitutes one trial.

You may administer an additional trial after demonstrating the item again.

**1 point:** Child correctly assembles the object within 90 seconds in either trial. Correct assembly of the object requires the pieces be separated by no more than ¼ inch and the edge no more than ¼ inch misaligned.

**0 points:** Child does not correctly assemble the puzzle within the time limit on either trial.

<table>
<thead>
<tr>
<th>62</th>
<th>Complete Pegboard: 25 Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Pegboard, 6 yellow pegs and stopwatch</td>
</tr>
</tbody>
</table>

*Note. If the child was administered item 47 or item 55 previously (i.e., pegboard Series items) use the child’s performance from the first trial of that to score Item 62.*

Insert the pegs in the pegboard so that the child does not see you insert them. Place the pegboard on the table, directly in front of the child and within his or her reach. Remove the pegs one at a time and place them between the child and the pegboard, at midline and perpendicular to the pegboard. Pointing first to the pegs and then to the holes, say, **Put them all in.**

Start timing when the child picks up the first peg. Allow the child 25 seconds to place the pegs. Stop timing when the child places all six pegs or when 25 seconds have elapsed. You may hold the board steady for the child and you may retrieve any pegs that roll away, but do not hand any pegs to the child or demonstrate placing the pegs into the holes.

**1 point:** Child places all the six pegs in the pegboard within 25 seconds. All six pegs must be in the pegboard at the same time.
0 points: Child does not place all the six pegs in the pegboard within 25 seconds.

Language

<table>
<thead>
<tr>
<th>6</th>
<th>Searches With Head Turn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Elvated supine or seated</td>
<td>None</td>
</tr>
</tbody>
</table>

Stand beside the child out of her or his field of vision. Hold the bell about 18 inches from the child’s right ear, ring the bell gently repeat the same procedure with the left ear this constitutes Trial 1 if the child does not turn his or her head to the sound of the bell readminister this item using the rattle trial 2 let the child see the bell or rattle briefly if he or she turns to it.
1 point: Child purposely turns his or her head towards the source of the sound at least once.
0 point: Child does not turn his or her head or turns head sa way from the child only moves eyes.

<table>
<thead>
<tr>
<th>7</th>
<th>Discriminates sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Elvated supine or seated</td>
<td>Paper and rattle</td>
</tr>
</tbody>
</table>

Stand beside the child’s field of vision. Crumple the paper about 4 inches behind the child’s left ear .continue presenting the sound until the child no longer searches for the sound or attends to it .then gently shake the tattle, in approximately the same place where you held the crumpled paper.
1 point: Child clearly responds to the sound of the rattle by startling .turning his or her head .changing activity level. Changing facial expressions, or vocalizing.
0 points: Child shows no change in behavior in response to rattle.

<table>
<thead>
<tr>
<th>8</th>
<th>Sustained Play With Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Elvated supine or seated</td>
<td>Objects of interst and stop watch</td>
</tr>
</tbody>
</table>

Engage the child with various objects. You may switch activities as needed to keep the child’s interest.
1 point: Child interacts with the objects for at least 60 seconds. do not penalize the child for momentary lapses of attention as long as he or she is generally engaged with the objects.
0 points: Child does not maintain play for at least 60 seconds.
During testing, observe the child to see if he or she responds when his or her name is called. If you do not observe the behavior through incidental observation, attempt to elicit it. Stand beside the child and call the child by his or her name. Again, wait briefly and call the child by his or her name.

1 point: Child turns his or her head both times his or her name is called, but does not respond to the unfamiliar name.

0 points: Child responds to unfamiliar name. Child does not respond both times his or her name is called.

Engage the child’s interest in an object. Allow the child to play independently, then call the child’s name.

1 point: Child looks up and briefly pauses during play when you call his or her name.

0 points: Child does not look up and continues to play.

Attract the child’s attention and talk to him or her using words that will probably not interest a child. Without any volume change or other type of emphasis, intersperse words that are familiar to the child (e.g., eat cookie, go bye-bye).

1 point: Child responds differentially to at least two familiar words by changing facial expressions, vocalizing, or attempting to imitate the words. The child may also look around for the person or object named.

0 points: Child’s behavior does not change in response to presentation of familiar words.
Place an object that child appears interested in within the child’s reach. When the child reaches for it say no-no in a firm voice.

1 point: Child stops reaching for the object in response to no-no. Child may resume reaching for the objects after a brief hesitation.

0 points: Child shows no hesitation in reaching for object.

<table>
<thead>
<tr>
<th>13</th>
<th>Attends to Other’s Play Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Position</strong></td>
</tr>
<tr>
<td></td>
<td>Seated</td>
</tr>
</tbody>
</table>

Engage the child in a familiar play routine of have the child’s caregiver do it some play routines may include:

- Pat a cake
- Tickle games
- Peek a boo
- How big is the baby so big
- Itsy bitsy spider
- Playing catch

If the child is unfamiliar with these routines, ask the caregiver what play the child is familiar with and use those play routines for this item.

1 point: child maintains attention and enjoys interacting with you in a play routine for at least 60 seconds. Child may not actively participate in play routine.

0 points: child maintains attention for less than 60 seconds. Child becomes fussy before 60 seconds have elapsed.

<table>
<thead>
<tr>
<th>14</th>
<th>Responds to Request for Social Routines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Position</strong></td>
</tr>
<tr>
<td></td>
<td>seated</td>
</tr>
</tbody>
</table>

Ask the child to perform a social routine. Avoid using any movement or gesture with the request. Common social routines may include:

- Pat a cake
- Peek a boo
- Blowing kisses
- Waving bye bye

If the child is unfamiliar with these social routines, ask the care giver what routines the child is familiar with and substitute those social routines for this item. Wait until the end of the session to test if the child understands waving bye bye. Young children can become upset if they think they have finished but testing continues.

1 point: Child responds in an appropriate manner to at least one spoken request.

0 points: Child does not respond or responds in appropriately to spoken request.

| M | Identifies Objects Series: 1 Correct |
Place the objects, in any order, in a line in front of the child, ask the child to identify each object. Do not ask the child to identify the objects in the order that they are placed on the table. You may query using any of the following:

- Where’s the book?
- Show me the book
- Abet the book
- Extend your hand palm up and ask book?

On the record form, indicate each object the child correctly identifies.

1 point: Child correctly identifies points to touch, clearly looks at picks up gives you at least one of the objects.

0 points: Child does not identify any objects named.

Ask the child to show you an object in the immediate environment. Other than the objects used in item 15 or item 19 (story book, plastic cup, spoon, ball and doll). You may ask the caregiver what objects the child is familiar with. (Do not use the object if the caregiver in any way indicates the objects while naming it for you). You may query using and of the following:

- Where is you bottle or name used for child’s bottle?
- Show me your shoes.
- Table?

Name only one object; do not provide more than one trials.

1 point: Child correctly identifies point to touch, clearly looks at the object you name.

0 points: Child does not identify the object named.

Open the picture book to page 1 and place it on the table, directly in front of the child. Direct the child’s attention to the pictures of the training items. Ask the child to point to the pictures of the baby and the dog. If the child does not attempt to identify one of the training item pictures you may point to the pictures while naming them. Then administer the test items page 2-5. You may ask the child to identify the pictures by saying show me or point to
Training items- baby, dog(s)
Test items- a. cookie  b. bird  c. ball d. shoes  e. bed  f. book  g. car
  h. kitten  i. apple  j. balloons  k. spoon  l. bottle

On the record form, indicate each item the child correctly identifies.

1 point: Child correctly identifies points to, touches, clearly look at least one of the test item pictures.
0 points: Child does not identify any objects’ named.

<table>
<thead>
<tr>
<th>18</th>
<th>Understand Inhibitory Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>seated</td>
<td>2ducks and 6 blocks</td>
</tr>
</tbody>
</table>

Engage the child in a play routine such as one of the following
- Give the child one duck and you take the other. Show the child how the duck swims back and forth and see if the child begins playing with the duck. Take turns letting back and forth and see if the child begins playing with the duck, say, wait the duck swim back and forth. as the my turn pause to see if the child responds down if necessary stack the
- Stack the blocks and knock them down stack the blocks again and let the child knock them down .cue the child knock the blocks say wait or not yet pause to see if the child responds.

1 point: child pauses in responses to inhibitory words during a play routine.
0 points: child does not pause in response to inhibitory words.

<table>
<thead>
<tr>
<th>19</th>
<th>Identifies Object Series: 3 Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Story book, plastic cup, spoon, small ball and doll</td>
</tr>
</tbody>
</table>

Place the objects in any order in a line in front of the child ask the child to identify each object. Do not ask the child to identify the objects in the order that they are placed on the table .you may query with any of the following
- Where’s the book
- Show me the book
- Get the book
- Extend your hand palm up and ask book

On the record form indicate each object the child correctly identifies

1 point: child correctly identifies points to touches clearly looks at picks up give you at least three or the objects.
0 points: child identifies two or fewer of the objects named.
20

**Follows One-Part Directions**

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>seated</td>
<td>Doll or bear soon comb and facial tissue</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Sit the doll or bear on the table within the child’s reach. Then proceed with the following:

a) Hand the spoon to the child and tell him or her to feed the doll or bear a suggested prompt is the baby bear is hungry feed the baby bear.

b) Offer the child the comb in exchange for the spoon. Tell the child to comb the doll’s bear’s hair.

c) Offer the child a tissue in exchange for the comb. Tell the child to wipe the doll’s bear’s nose.

Children sometimes feed themselves comb their own hair or blow their own noses in response to the instructions in such a case repeat the instructions again draw the child’s attention to the doll or bear, but do not point to any part of the doll or bear.

---

1 point: Child responds correctly to at least two of the directions with doll or bear

0 point: Child responds correctly to fewer than two tasks with the doll or bear child correctly performs the tasks only on himself or herself.

21

**Identifies Picture Series: 3 Correct**

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Picture book(pp 1-5)</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>17(1 correct), 21(3 correct)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Open the picture book to page 1 and place it on the table directly in front of the child direct the child’s attention to the picture of the training items. Ask the child to point to the pictures of the baby and the dog if the child does not attempt to identify one of the training item pictures you may point to the pictures while naming them then administer the test items page 2-5 you may ask the child to identify the pictures by saying

**Show me----------or Point to----------------**

Training items- baby, dog(s)

Test items- a. cookie b. bird c. ball d. shoes e bed f. book g. car h. kitten i. apple j. balloons k. spoon l. bottle

On the record form indicate each item that the child correctly identifies.

1 point: Child correctly identifies points to touches clearly look at least three of test item pictures.

0 points: Child correctly identifies two or fewer named test items.

23

**Identifies Action picture Series: 1 Correct**

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>seated</td>
<td>Picture book pp6-9</td>
<td>1</td>
<td>No timed</td>
</tr>
</tbody>
</table>
Series items | 23 1 correct 26 3 correct 29 5 correct

Turn to pages 6-7 of the picture book. Ask the child to identify the following actions eliciting the child’s response by saying, **Show me__________** or **point to_________**

<table>
<thead>
<tr>
<th>Page 6-7</th>
<th>page 8-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. waving</td>
<td>e. drinking</td>
</tr>
<tr>
<td>B. reading</td>
<td>f. reading</td>
</tr>
<tr>
<td>C. sleeping</td>
<td>g. washing</td>
</tr>
<tr>
<td>D. eating</td>
<td>h. running</td>
</tr>
</tbody>
</table>

On the record form, indicate each item that the child correctly identifies.

1 point: Child correctly identifies points to touches clearly looks at least one of the pictures.
0 points: Child does not identify any of the pictures named.

### Identifies 5 Parts of the Body

<table>
<thead>
<tr>
<th>Position</th>
<th>materials</th>
<th>Trials</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>doll</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Hold the doll within the child’s reach. Tell the child to point to the part of the doll’s body that you name. If the child prefers, he or she may identify body parts on himself or herself you may query with any of the following:
- **Show me the doll’s hair.**
- **Where’s the baby’s hair?**
- **Hair?**
- **Point to your hair?**
- **Touch your hair.**

Use the same procedure for the eyes, nose, mouth, ears, feet, hand, head and stomach/tummy.

1 point: Child correctly points to at least five body parts.
0 points: Child correctly points to four or fewer body parts.

### Follows Two-Part Directions

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>seated</td>
<td>3 objects of interest</td>
<td>1</td>
<td>Not time</td>
</tr>
</tbody>
</table>

Select three objects the child has previously identified or exhibited and interest in a place the objects near the child, but not on the table used for testing. Tell the child to do the following

a. Get the__________ (object) and **put it on the table please**

b. Pick up the__________ (object) and **give it to me.**

1 point: Child correctly follows at least one of the two part directions in its entirety.
0 points: Child follows only first part e.g. gets the objection objects but doesn’t put it on the table of the two part directions. Child follows the directions using an object other than the one named
Identifies Action Picture Series 3 Correct

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>seated</td>
<td>Picture book pp6-9</td>
<td>1</td>
<td>Not time</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
<td>23(1 correct), 26(3 correct), 29 (5 correct)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Turn to page 6-7 of the picture book. Ask the child to identify the following actions. Elicit the child’s response by saying, **Show me ________** or **point to ________**

**Pages 6-7**  **Pages 8-9**

a. waving  

b. reading  

c. sleeping  

d. eating  

e. drinking  

f. reading  

g. washing child correctly identifies two or fewer of the pictures.  

h. running  

On the record form, indicate each item that the child correctly identifies.

1 point: Child correctly identifies points to touches clearly looks at least three of the pictures:  
0 point: Child correctly identifies two or fewer of the pictures.

Expression

**Undifferentiated Nasal Sounds**

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scradled</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Elevated supine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During the testing listen for nasal sounds that the child spontaneously produces. If you do not note these sounds through incidental observation, attempt to elicit the sounds with the following techniques:

• Snuggling with the child while speaking to him or her  
• Varying voice quality by changing pitch, loudness or duration of utterances  
• Gently patting the child while speaking to or singing softly to him or her

You may need to look away or quietly talk to the caregiver to see if the child will recognize.

1 point: Child produces nasal vocalizations (mmm, nnn sounds). Nasal vocalizations are sounds that are produced by vocalizing and passing air through the nose rather than the mouth. Nasal sounds are often found among vocalizations that change inflection (alteration in pitch or tone) or are high-pitched.  

**Social Vocalizing or laughing**

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cradled or</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Elevated supine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
During testing, observe the child to see how he or she responds to attention. For example, does the child laugh, or vocalize? If you do not note these behaviors through incidental observation, attempt to elicit the behavior with the following techniques:

- Snuggling with the child while speaking to him or her
- Varying voice quality by changing pitch, loudness or duration of utterances
- Gently patting the child while speaking to or singing softly to him or her

You may need to look away or quietly talk to the caregiver to see if the child vocalizes.

1 point: Child vocalizes (e.g., giggles, coos, squeals) or laughs in response to the speaker’s attention.
0 points: Child does not vocalize. Child cries or whines in response to the speaker’s attention. Child smiles without vocalizing.

<table>
<thead>
<tr>
<th>6</th>
<th>2 Vowel Sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Cradled or Elevated supine</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, listen for different vowel sounds that the child produces. These are not phonetic vowels that might be distinguishable within one slurred utterance, but distinct vowel sounds such as ah, oo, and eh that the child produces when vocalizing spontaneously. If you do not note these sounds through incidental observations, attempt to elicit the sounds with the following techniques:

- Snuggling with the child while speaking to him or her
- Varying voice quality by changing pitch, loudness or duration of utterances
- Gently patting the child while speaking to or singing softly to him or her

You may need to look away or quietly talk to the caregiver to see if the child vocalizes.

1 point: Child vocalizes at least two different, distinct vowel sounds.
0 points: Child does not vocalize. Child vocalizes using the same vowel sound.

<table>
<thead>
<tr>
<th>7</th>
<th>Gets Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Supported sitting</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, observe if the child attempts to get another’s attention. If you do not observe this behavior, engage the child briefly and then turn away. Observe the child in your peripheral vision to see if he or she tries to get attention by vocalizing, reaching toward you, gesturing or grabbing at you.

1 point: Child tries to get attention from you or others
0 points: Child does not attempt to gain attention.

<table>
<thead>
<tr>
<th>8</th>
<th>2 Consonant Sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Supported sitting</td>
<td>Objects of interest</td>
</tr>
</tbody>
</table>
During testing, listen for consonant sounds the child spontaneously produces. If you do not note these sounds through incidental observation, model different sounds and simple consonant-vowel or consonant-vowel-consonant words while playing with the child. For example
- Bang a rattle on a table, saying **buh-buh-buh!**
- Gently tickle the child, saying **da-da-da.**
- Make the teddy bear jump up and down, saying **jump-jump-jump!**

**1 point:** Child produces at least two different, distinct consonant sounds (e.g., /m/, /p/, /g/, /b/)
**0 points:** Child produces the same consonant sound or does not vocalize.

<table>
<thead>
<tr>
<th>Uses gestures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Not specified</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she uses a gesture to try to communicate. For example:
- Child may reach for his or her bottle to indicate he or she wants it.
- Child may shake head to indicate “no”.
- Child may push away an object to indicate he or she does not want to play with it.
- Child reaches to be picked up.

**1 point:** Child uses at least one gesture to make his or her wants known. Vocalizations may be present, but the gesture alone must be sufficient to indicate the child is communicating.
**0 points:** Child does not use gestures.

<table>
<thead>
<tr>
<th>Consonant-Vowel Combination Series: 1 Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Not specified</td>
</tr>
<tr>
<td>Series items</td>
</tr>
</tbody>
</table>

During testing, listen for consonant-vowel combinations the child produces. If you do not note these sounds through incidental observation, play with the child and repeat different sounds such as gagaga, bababa, dadada, mamama.

**1 point:** Child imitates at least one repetitive consonant-vowel combination (e.g., baba or dada). Also score 1 point if the child spontaneously produces repetitive consonant-vowel combinations.
**0 points:** Child does not produce a consonant-vowel combination.

<table>
<thead>
<tr>
<th>Participate in Play Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Supported sitting</td>
</tr>
</tbody>
</table>
If the child is unfamiliar with these routines, ask the caregiver what play the child is familiar with and use those play routines for this item.

**1 point:** Child actively participates in at least one play routine. For example, the child pulls your hands away from your face in peek-a-boo or approximates hand clapping in pat-a-cake.

**0 points:** Child attends, but does not actively participate in a play routine.

### Jabbers expressively

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not specified</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

During testing, listen if the child uses vocal inflections (alterations in pitch or tone) that are expressive and somewhat imitative of conversational inflections.

**1 point:** Child produces at least one vocalization that contains inflections and is expressive. The child’s productions do not need to be meaningful words.

**0 points:** Child’s vocalizations do not contain expressive inflections. Child’s vocalizations contain inflections but do not mimic conversational inflections (e.g., squeals).

### Consonant-Vowel Combination Series: 4 Combinations

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not specified</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>10 (1 Combination), 13 (Combinations)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During testing, listen for consonant-vowel combinations the child produces. If you do not note these sounds through incidental observation, play with the child and repeat different sounds such as gagaga, bababa, dadada, mamama.

**1 point:** Child imitates at least four different repetitive consonant-vowel combinations (e.g., baba, dada, mama and gaga). Score 1 point if the child spontaneously produces at least four repetitive consonant-vowel combinations.

**0 points:** Child vocalizes three or fewer consonant-vowel combinations.

### Uses One-Word Approximations

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not specified</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Using testing, observe whether or not the child appears to be naming or labeling people, objects or toys. Word approximations usually appear as consistent sound combinations for specific objects.

**1 point:** Child produces at least 1 one-word approximation.

**0 points:** Child does not produce one-word approximations.

### Directs Attention of Other

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Objects of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>
During testing, observe if the child directs your or the caregiver’s attention to an object during play. If you do not observe this behavior through incidental observation, you may elicit the behavior by placing some objects within the child’s reach. Pick up one of the objects and show it to the child. Observe if the child points to another object or hands you an object to show it to you.

1 point: Child points to or shows you or the caregiver at least one object.
0 points: Child points to or shows you or the caregiver an object only when prompted by a verbal request.

<table>
<thead>
<tr>
<th>16</th>
<th>Imitates Word</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, listen to whether or not the child imitates your words. If you do not note these sounds through incidental observation, use a playful tone of voice to say several words such as mama, dada, all gone, uh-oh, ball, thank you and baby. You may ask the caregiver to encourage the child to imitate words the child is familiar with.

1 point: Child imitates at least one word, even if the imitation consists of vowels only. The imitation should come immediately after your word.
0 points: Child does not imitate words.

<table>
<thead>
<tr>
<th>17</th>
<th>Imitates Play Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Seated</td>
<td>Objects of interest</td>
</tr>
</tbody>
</table>

Observe if the child imitates interaction with you during play. A sample play routine to encourage the child to initiate play is playing peek-a-boo with a blanket or cloth, then waiting for the child to initiate the game with you or the caregiver. Examples of what the child may do to initiate a game or social routine include:

- Smiling at you and then hiding
- Handing you a wash cloth to play peek-a-boo
- Dropping an object from the table repeatedly and waiting for you to pick it up
- Offering you an object and then snatching away when you reach for it

1 point: Child initiates at least one interaction for play
0 points: Child responds to a request to play, but does not initiate interaction.

<table>
<thead>
<tr>
<th>18</th>
<th>Uses Words Approximately Series: 2 Words</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Not specified</td>
<td>Objects of interest</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
<td>18 (2 words), 23 (8 words)</td>
</tr>
</tbody>
</table>
During testing, listen for any words that the child spontaneously and appropriately applies to a specific object or situation. If you do not note these sounds through incidental observation, attempt to elicit them from the child by presenting familiar objects. Words that the child may use include mama, baba, uh-oh, ball and cup.

1 point: Child uses at least two different words appropriately. Credit words like uh-oh or yeah if they are used meaningfully. You may accept poorly articulated words and approximations as long as the child’s intent is clear.

0 points: Child only immediately imitates words spoken by you. Child uses only one word appropriately.

<table>
<thead>
<tr>
<th>19</th>
<th>Uses Word to make Wants Known</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, listen for any words the child uses to make his or her wants known. Children of this age usually use single word utterances, spoken in a commanding tone and/or accompanied by a gesture. Words that the child may use include up, down, more, mine, no, want, please, bottle.

1 point: Child uses at least one word to make his or her wants known.

0 points: Child vocalizes but does not use words.

<table>
<thead>
<tr>
<th>20</th>
<th>Names Object Series: 1 Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Story book, small ball, spoon and plastic cup</td>
</tr>
<tr>
<td>Series items</td>
<td>20 (11 objects), 27(3 objects)</td>
</tr>
</tbody>
</table>

Place the five objects on the table, within the child’s reach. Allow the child time to get the objects. As the child picks up an object, ask him or her to name it by asking, What do you have? What is that?

If the child does not independently explore all the objects, pick up the unexplored object(s) one at a time and ask the child to name it.

1 point: Child correctly names at least one object. You may accept poorly articulated words and approximations as long as the child’s intent is clear.

0 points: Child’s words that are not names of objects (e.g., mine, no, eat)

<table>
<thead>
<tr>
<th>21</th>
<th>Combine word and Gesture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she simultaneously uses a gesture and a word or words to express himself. In this type of behavior, for example, the child might say Go and point to the door or say ball and reach for the ball.

1 point: Child uses at least one word and gesture combination.
0 points: child’s words are not accompanies by gestures. Child’s gestures are accompanied only by non-word vocalization.

<table>
<thead>
<tr>
<th>22</th>
<th>Names Picture Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Picture book(pp. 10-15)</td>
</tr>
<tr>
<td>Series item</td>
<td>22 (1 picture), 28 (5 pictures)</td>
</tr>
</tbody>
</table>

Open the Picture Book to pages 10-11 and place it on the table, directly in front of the child. Direct the child’s attention to the pictures of the training items. Ask the child to name the pictures as you point to them. You may prompt him or her saying; **Tell me what this is or What is this?** When you are certain that the child understands the task, proceed with administering the test items (pp. 12-15)

**Training items-** Baby, dog(s)
**Test Items-** a. cookie, b. bird, c. ball, d. bottle, e. ballon(s), f. spoon, g. shoe(s), h. bed, i. apple, j. car, k. kitten, l. book

On the record Form, indicate the item(s) the child correctly names.

**1 point:** Child correctly names at least one picture.

**0 points:** Child does not name any pictures.

<table>
<thead>
<tr>
<th>23</th>
<th>Uses Words Approximately Series: 8 Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
<tr>
<td>Series items</td>
<td>18 (2 words) 23 (8 words)</td>
</tr>
</tbody>
</table>

During testing, listen for any words the child spontaneously and appropriately applies to a specific object or situation. If you do not note these sounds through incidental observation, attempt to elicit them from the child by presenting familiar objects. Words that the child may use include mama, dada, baba, uh-oh, ball and cup.

**1 point:** Child uses at least eight different words appropriately. Accept words such as uh-oh or yeah if they are used meaningfully. You may accept poorly articulated words and approximations as long as the child’s intent is clear.

**0 points:** Child only immediately imitates words spoken by you. Child uses fewer than eight words appropriately.

<table>
<thead>
<tr>
<th>24</th>
<th>Answers Yes or No Verbally in Response to Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Objects of interest</td>
</tr>
</tbody>
</table>

As you play with the child, ask yes/no questions about the objects he or she is playing with. Examples include:

- Do you like that…?
- Do you want the…?
- May I have the…?
1 point: Child uses yes or no (and/or variations such as yeah, uh-huh and uh-uh) appropriately in at least two responses. Child need not use both yes and no.
0 points: Child responds using yes or no to fewer than two questions. Child responds using gestures such as head shaking or nodding, without accompanying verbal response.

<table>
<thead>
<tr>
<th>25</th>
<th>Imitates a Two Word Utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, listen to the child to determine if he or she imitates two word sentences. If the child does not spontaneously imitate any two word sentence, attempt to elicit two-words. You may prompt the child by speaking to him or her in a playful manner or in sing-song voice. Common two-word utterance include Mama go, Daddy eat, Baby drink, Put here, My ball, Big dog and What is this?
1 point: Child imitates a two-word utterance. Also score one point if the child imitates a multiple-word utterance. You may accept poorly articulated words and approximations as long as the child’s intent is clear.
0 points: Child uses one word utterances only or does not use words. Child does not imitate utterances.

<table>
<thead>
<tr>
<th>26</th>
<th>Uses a Two-Word utterances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, listen if the child makes any spontaneous two-word or multiple-word utterances. Common examples of this type of utterance include You do, Where dada?, Want bottle, No night-night and More cookie.
1 point: Child produces at least one utterance that includes two or more words, each of which denotes a different concept. The words must be used in an appropriate manner and must not be separated by distinct pause.
0 points: Child uses two words that denote only one concept (e.g., bye bye, all gone, oh no)

<table>
<thead>
<tr>
<th>27</th>
<th>Names Object Series: 3 Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Story book, small ball, spoon and plastic cup</td>
</tr>
</tbody>
</table>

Place the five objects on the table, within the child’s reach. Allow the child time to explore the objects. Ask the child picks up the object, ask him or her to name it by asking, What do you have? Or What is that?
If the child does not independently explore all of the objects, pick up the unexplored object(s) one at a time and ask the child to name it.
1 point: Child correctly names at least three objects. You may accept poorly articulated words and approximations as long as the child’s intent is clear.
0 points: Child uses words that are not names of objects (e.g., mine, no, eat)

<table>
<thead>
<tr>
<th>28</th>
<th>Names Pictures Series: 5 Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Picture Book (pp. 10-15)</td>
</tr>
<tr>
<td>Series items</td>
<td>22 (1 picture), 28 (5 pictures)</td>
</tr>
</tbody>
</table>

Open the Picture Book to pages 10-11 and place it on the table, directly in front of the child. Direct the child’s attention to the pictures of the training items. Ask the child to name the pictures as you point to them. You may prompt him or her saying; Tell me what this is or What is this? When you are certain that the child understands the task, proceed with administering the test items (pp. 12-15)

Training items: Baby, dog(s)
Test Items: a. cookie, b. bird, c. ball, d. bottle, e. balloon(s), f. spoon, g. shoe(s), h. bed, i. apple, j. car, k. kitten, l. book

On the record Form, indicate the item(s) the child correctly names.
1 point: Child correctly names at least five pictures.
0 points: Child correctly names four or fewer pictures.

<table>
<thead>
<tr>
<th>29</th>
<th>Uses Multiple-Word Utterances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Not specified</td>
<td>None</td>
</tr>
</tbody>
</table>

During testing, record any of the child’s sentences that contain at least three words. Common examples include daddy go home, Give me toy, Do it again, I want that and Me get ball.
1 point: Child uses at least two multiple-word utterances. The utterances do not need to be grammatically correct.
0 points: Child uses two-or one-word utterances exclusively.

Fine motor

<table>
<thead>
<tr>
<th>15</th>
<th>Block series: whole hand Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seted</td>
<td>Block without hole</td>
</tr>
<tr>
<td>Series items</td>
<td>13 (Reaches for Block), 14 (Touch block), 15 (Whole Hande Grasp), 18 (partial Thumb opposition), 22 (Thumb-fingertip Grasp)</td>
</tr>
</tbody>
</table>
Place a block on the table, directly in front of the child, and within his or her reach. Allow the child time to reach for the block. If the child does not reach for the block, place it in his or her hand and allow the child to manipulate it for a short time to generate interest. Once interest is established, readminister the item.

1 point: Child picks up the block using one or both hands. He or she can use a whole hand (palmer) grasp around the block (see accompanying figure).

0 points: Child presses the block against his or her trunk or free arm then picks it up.

### Reaches Unilaterally

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she tends to reach with a single hand (as opposed to using both hands) when you place objects within reach.

1 point: Child tends to reach with a single hand more often than with both hands. Child may alternate the hand used.

0 points: Child reaches with both hands only. Child does not attempt to reach at all.

### Food Pellet Series: Raking Grasp

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trial</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Food pellet</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Series items: 17(Raking Grasp), 20(Whole Hand Grasp), 24(partial Thumb opposition), 26(Thumb-Fingertip Grasp)

Note: inform the caregiver the pellet is made of cereal. Obtain caregiver’s consent before allowing the child to eat a pellet.

Place the pellet approximately 8-10 inches from the edge of the table, in front of the child. Attract the child’s attention to the pellet (e.g., tap near the pellet and then remove your hand).

1 point: Child rakes at the pellet, attempting to grasp the pellet, even if he or she does not succeed in grasping it. Child may use a whole hand, raking type of motion in an attempt to secure child uses a more advanced grasp (i.e., whole hand grasp, partial thumb opposition, thumb-fingertip grasp).

0 points: Child slaps at the pellet, but makes no raking motions to secure the pellet.

### Block series: partial thumb opposition

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Block without hole</td>
<td>2</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Series items: 13( reaches for Block ), 14( Touches Block), 15( Whole hand grasp), 18( partial Thumb Opposition), 22( Thumb-fingertip Grasp)

Place the block on the table, directly in front of the child, and within his or her reach. Allow the child time to reach for the block. If the child does not reach for the block, place it in his or her
hand and allow the child to manipulate if for short time to generate interest. Once interest is established, read minster the item.

1 Point: Child grasps the bock so that his or her thumbs partially opposed to the fingers (see accompanying figure). The palm may be used as well as the thumb and fingers. Also give a score of 1 if child uses a more advanced grasp (e.g., thumb-fingertip).

0 points: Child fully flexes and adducts (bend and come together) fingers when he or she grasps the block.

<table>
<thead>
<tr>
<th>Transfers Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
</tbody>
</table>

During testing, observe the child’s play with ring to see if he or she retransfers the ring from one hand to the other. If you do not observe this during testing, you may give the child the ring and encourage him or her to hold it.

1 point: child transfers the ring from hand to hand.

0 points: child releases the ring with one hand, then picks it up with other hand, child uses another part of the body (e.g. mouth or trunk) or resets hands or ring on the table to facilitate the transfer.

<table>
<thead>
<tr>
<th>Food Pellet Services: Whole Hand Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
</tr>
</tbody>
</table>

Note. Inform the caregiver the pellet is made of cereal. Obtain caregiver’s consent before allowing the child to eat pellet.

Place the pellet approximately 8-10 inches from the edge of the table, in front of the child. Attract the child’s attention to the pellet (e.g., tap near the pellet and then remove your hand).

1 point: child uses his or her whole hand to grasp the pellet. The fingers should extend and abduct (straighten and spread apart) as the child approaches the pellet and then flex and adduct (bend and come together) as he or she grasps it. If child uses a more advanced grasp (e.g. partial thumb opposition, thumb-fingertip grasp).

0 points: Child does not grasp the pellet. Child uses both hands to pick up pellet. Child uses a ranking grasp or an open hand to slap the pellet and slide it across the table.

<table>
<thead>
<tr>
<th>Transfers Block</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
</tbody>
</table>
During testing, observe the child’s play with a block to see if he or she transfers the block from one hand to other. If you do not observe this behavior during testing, give the child a block and encourage him or her to hold it.

**1 point**: child transfers the block from hand to hand.

**0 points**: Child releases the block with one hand, then picks it up with the other hand. Child uses another part of the body (e.g., mouth or trunk) or rests hands on the table to facilitate the transfer.

<table>
<thead>
<tr>
<th>Block Series: Thumb-Fingertip Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seted</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
</tr>
</tbody>
</table>

Place the block on the table. Directly in front of the child and within his or her reach. Allow the child time to reach for the block. If the child does not reach for the block, place it in his or her hand and allow the child to manipulate it for a short time to generate interest. Once interest is established, readminister the item.

**1 point**: child uses the pads of his or her thumb and any of the fingertips to grasp the block (see accompanying figure).

**0 point**: child holds block against palm, rather than towards fingertips.

<table>
<thead>
<tr>
<th>Brings Spoons or Blocks to Midline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
</tbody>
</table>

Hold one spoon or block in each hand and bang them together. The n offer them to the child and invite him or her to bang them together. Observe the child to see if he or she brings the objects together at the midline.

**1 point**: child b rings the spoons or blocks together at his or her midline.

**0 points**: child drops one or both objects, or attempts to bring objects together but they do not meet, or objects come together but not at midline.

<table>
<thead>
<tr>
<th>Food Pellet Series: Partial Thumb Opposition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
</tr>
</tbody>
</table>

Note. Inform the caregiver the pellet is made of cereal. Obtain caregiver’s consent before allowing the child to eat a pellet.

Place the pellet approximately 8-10 inches from the edge of the table, in front of the child. Attract child’s attention to the pellet (e.g., tap near the pellet and then remove your hand).
1 point: Child grasps the pellet so that the thumb is at least partially opposed to the palm. Also give a score of 1 if child uses a more a more advanced grasp (e.g., thumb-fingertip grasp).
0 points: child uses a whole hand grasp or raking grasp, child uses an open hand to slap the pellet and slide it across the table.

<table>
<thead>
<tr>
<th>Lifts cup by handle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
</tbody>
</table>

Place the cup within the child’s reach, making sure that the handle points toward the child. Allow the child time to pick up the cup.
1 point: Child lifts the cup by the handle using one hand finger(s) do not need to be threaded through the cup handle.
0 point: child lifts cup, but not using handle. Child uses two hands to lift cup child grasps handle, but doesn’t lift cup.

<table>
<thead>
<tr>
<th>Food Pellet Series: Thumb- Fingertip Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
<tr>
<td><strong>Series items</strong></td>
</tr>
</tbody>
</table>

Note: inform the caregiver the pellet is made of cereal. Obtain caregiver’s consent before allowing the child to eat a pellet.

Place the pellet approximately 8-10 inches from the edge of the table, in front of the child. Attract the child’s attention to the pellet (e.g., tap near the pellet and then remove your hand).
1 point: Child uses the pads of the thumb and any fingertip to grasp the pellet (see accompanying figure).
0 points: Child does not use a thumb-fingertip grasp.

<table>
<thead>
<tr>
<th>Turns Pages of Book</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Social sitting</td>
</tr>
</tbody>
</table>

Place the book in front of the child. Open the book to the first page encourage the child to hold the book, turn the pages, and look at the pictures, you may help the child holed the book and may demonstrate how to turn the pages.
1 point: Child attempts to turn a page or several pages at once, even if the effort is clumsy and he or she does not completely turn the page(s)
0 point: Child accidentally turns pages (e.g., by hitting book or slapping pages).

<table>
<thead>
<tr>
<th>Grasp Series: Palmer Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
</tbody>
</table>
## 28. Seated

**Crayon or pencil and sheet of blank unlined white paper**

<table>
<thead>
<tr>
<th>Trials</th>
<th>Not timed</th>
</tr>
</thead>
</table>

**Series items**

28 (palmar), 34 (Transittional), 37 (Intermediate [Tripod]), 48 (Dynamic)

Place the paper on the table, in front of the child. Place the crayon or pencil in the middle of the paper. Encourage the child to make marks on the paper such as scrabble, draw a picture, or write. If the child does not grasp the crayon or pencil, you may demonstrate how to make marks on the paper using a second crayon or pencil.

1 **point**: Child grasps the crayon or pencil using a palmer grasps (whole hand fisted) while making a mark on the paper. Child may either end of the crayon to make marks, provided grasp is accurate. The writing end of the crayon or pencil may be nearer the index finger, with the hand turned thumb down (radial cross palmer grasp: see bottom right) also give credit if the child grasps the crayon or pencil using his or her fingers and any thumb opposition.

0 **points**: Child finger curl around crayon, but child does not grasp writing instrument firmly in palm.

## 29. Isolates Extended Index Finger

**Position**

Seated

<table>
<thead>
<tr>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
</table>

| Pagboard | 1 | Not timed |

## 30. Scribbles Spontaneously

**Position**

Seated

<table>
<thead>
<tr>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
</table>

| Crayon or pencil and sheet of blank unlined white paper | 1 | Not timed |

Place the paper on the table, in front of the child. Place the crayon in the middle of the paper. Encourage the child to make marks on the paper such as to scribble, draw a picture, or write.

1 **point**: Child spontaneously and purposely scribbles on the paper.

0 **points**: Child accidentally marks on the paper while playing with the crayon.

## 31. Block Stacking Series: 2 Blocks

**Position**

Seated

<table>
<thead>
<tr>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
</table>

| 12 blocks | 3 | Not timed |

**Series items**

31 (2 blocks), 38 (6 blocks), 54 (8 blocks)
Place all 12 blocks on the table, in front of you. Stack three of the blocks, saying, **Look at my tower.** Place three of the block in form of the child and say, **Now you make a big tower.** Point to a spot on the table near your tower. Leave your tower standing as a model for the child; however, allow the child to use the blocks in your tower if he or she wants, if the child constructs a tower of three blocks, push the remaining nine blocks to the child and say, make your tower as big as you can. Use all the blocks. These procedures constitute Trial 1. For subsequent trials, push all 12 blocks to the child and say, **Build another tower. Make it as big as you can.** Present three trials. Do not hand the child any blocks or direct or guide the building of the structure in any manner.

On the Record Form, indicate the number of blocks in the child’s tallest tower.

**1 Point:** Child stacks at least two blocks in any trial. Base must be a single block. Do not count a block as part of the tower unless child releases it and it remains balanced. Do not count the block that causes the structure to fall.

**0 points:** Child only adds blocks to your tower. Child groups two or more blocks as the base. Child builds tower with blocks next to each other, rather than single tower of blocks.

<table>
<thead>
<tr>
<th>Imitates Stroke Series: Random</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
<tr>
<td>Series items</td>
</tr>
</tbody>
</table>

Place the paper on the table, in front of the child. Then place one crayon on the paper. Using the other crayon, draw a straight vertical line on the paper, moving the crayon rapidly toward the child while saying, **See? It goes zip! You do it!** Allow the child time to reproduce the stroke. Regardless of the child’s performance, draw a horizontal line on the paper, moving the crayon from your right to your left while saying, **Now make it go this way. Zip! You do it!** You may hold the paper in place for child. If the child makes a definite stroke in any direction, make circular strokes on the paper and say, **Now make it go this way. You do it.**

**1 point:** Child produces a stroke in any direction.

**0 points:** Child does not produce a stroke on the paper.

<table>
<thead>
<tr>
<th>Places 10 Pellets in Bottle (60 seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
</tr>
<tr>
<td>Seated</td>
</tr>
</tbody>
</table>

*Note. Inform the caregiver the pellet is made of reveal. Obtain caregiver’s consent before allowing the child to eat a pellet.*

Place two pellets and the bottle on the table in front of you. Pick up a pellet and drop it in the bottle while the child is watching. Place 10 pellets in front do the child so that they are not touching each other or the bottle. **Say, I want to find out how many pellets you can put in the bottle as far as you can. I'll tell you when to stop.** Ready......Go! Hold the bottle for the child. Begin timing when the child picks up the first pellet. Stop timing when the child has placed 10 pellets in the bottle or 60 seconds elapse. The child must drop in the pellets one at a
time, if the child tries to drop more than one pellet in the bottle at a time, continue timing, but say, **No, just one at a time.** If the child does not pick up a pellet, continue timing as you place the other pellet in front of you into the bottle and repeat the instructions. If the child knocks the bottle over or takes the pellet out, continual timing as you reposition the bottle and note how many pellet at remained inside.

1 point: Child place 10 pellets in the bottle in 60 seconds or less, one pellet at a time.

0 points: Child place 9 or fewer pellets in the bottle in 60 seconds. The child repeatedly places more than on food pellet in the bottle at a time.

<table>
<thead>
<tr>
<th>34</th>
<th>Grasp Series: Transitional Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Crayon or pencil and set of blank unlined white paper</td>
</tr>
<tr>
<td>Series items</td>
<td>28 (palmar), 34 (Transitional), 37 (intermediate [Tripod]), 48 (Dynamic)</td>
</tr>
</tbody>
</table>

Place the paper on the table, in front of the child. Place, the crayon or pencil in the middle of the paper. Encourage the child to make marks on the paper such as scribble, draw picture, or write. If the child does not grasp the crayon or pencil you may demonstrate how to make marks on the paper using a second crayon or pencil.

1 point: Child grasps the crayon or pencil using his or her finders in partial thumb opposition and makes a mark on the paper. The writing end of the crayon or pencil should be at the thumb and index finger side, and the non-writing end may project out or near the child’s palm. The grasp is usually on the middle to proximal portion of the crayon.

0 points: Child uses a palmer grasp or other less-advanced grasp.

<table>
<thead>
<tr>
<th>35</th>
<th>Coins in Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Bank and 5 small coins (pennies, nickels, and/or dimes)</td>
</tr>
</tbody>
</table>

*Note. Small parts are involved in the task. Closely monitor the use of the materials to prevent the child from placing coins into his or her mouth. Keep the coins in a safe place, away from the child, when you are not administering this item. Ensure that that stopper/cap is tightly in place.*

Place the coin bank in front of the child. Show the child the five coins. Place once coin in front of the child and tell the child to put it in the bank, pointing to the slot in the coin bank. If the child does not attempt to put the coin in you may demonstrate by putting no more than two coins in the coin bank. Present the remaining coins one at a time.

1 point: Child place at least three coins into the slot.

0 points: Child place two or fewer coins into the slot.

<table>
<thead>
<tr>
<th>36</th>
<th>Connecting Blocks: Apart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Connection blocks set</td>
</tr>
</tbody>
</table>
Note. Prior to using the connecting blocks for the first time, separate and reconnect the blocks several times in order to facilitate the child’s manipulating the blocks.

Before you present the blocks to the child, connect them together as a compact, stacked unit. Show the child the unit and demonstrate taking off a large and a small block. Put the blocks back together, give the unit to the child, and ask him or her to take them all apart.

1 point: Child takes all the blocks apart
0 points: Child does not take all the blocks apart or stops before all the blocks are separated.

<table>
<thead>
<tr>
<th>37</th>
<th>Grasp Series: intermediate (Tripod) Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>Crayon or pencil and set of blank unlined white paper</td>
</tr>
<tr>
<td>Series items</td>
<td>28 (palamar), 34 (Transitional), 37 (intermediate [Tripod]), 48 (Dynamic)</td>
</tr>
</tbody>
</table>

Place the paper on the table, in front of the child. Place the crayon or pencil in the middle of the paper. Encourage the child to make marks on the paper such as scribble, draw a picture, or write. If the child does not grasp the crayon or pencil, you may demonstrate how to make marks on the paper.

1 point: Child grasps the crayon or pencil using a static tripod (thumb and two fingers) or quadruped (thumb and three fingers) grasp (see accompanying figure) and makes a mark on the paper. There are no fine, localized movements of the finger joints, the hand moves as a fixed unit, and the non-involved (ring and little) fingers tend to be only minimally flexed. The crayon should be held somewhat distally (at the one-third to one-half portion of the crayon near the writing end). The pads of the index finger and thumb should be grasping the crayon or pencil. The non-writing end must project outward from between fingers. Also give a score of 1 if child uses a dynamic tripod grasp.

0 points: Child uses a transitional grasp or other less advanced grasp.

<table>
<thead>
<tr>
<th>38</th>
<th>Block Stacking Series: 6 Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Seated</td>
<td>12 blocks</td>
</tr>
<tr>
<td>Series items</td>
<td>31 (2 blocks), 38 (6 blocks), 54 (8 blocks)</td>
</tr>
</tbody>
</table>

Place all 12 blocks on the table, in front of you. Stack three of the blocks, saying Look at My tower. Place three of the blocks in front of the child and say, now you make a big tower. Point to spot on the table near your tower. Level your standing as a model for the child; however, allow the child to use the blocks, push the remaining nine blocks to the child and say, make your tower as big as you can. Use all the blocks. These procedures constitute Trial 1. for subsequent trials, push all 12 blocks to the child and say, Build another tower, Make it as big as you can. Present three trials. Do not hand the child any blocks or direct or guide the building of the structure in any manner.

On the record form, indicated the number of blocks in the child’s tallest tower
1 point: Child stacks’ at least six blocks in any trial. Base must be a single block. Do not count a block as part of the tower unless the child releases it and it remains balanced. Do not count the block that causes the structure to fall.

0 points: Child only adds blocks to your tower. Child groups two or more blocks as the base. Child builds tower with blocks next to each other, rather than single tower of blocks.

### Uses Hand to Hold Paper in Place

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Crayon or pencil and sheet of blank white paper</td>
<td>1</td>
<td>No timed</td>
</tr>
</tbody>
</table>

During testing, when the child is coloring with the crayon or drawing with the pencil observe if the child holds, the paper in place with one hand. If you have not observed this, place the paper on the table, in front of the child. Then place the pencil or crayon in the middle of the paper, with the writing end pointing away from the child. Encourage the child to make marks on the paper such as scribble or to draw a picture or to write.

1 point: Child holds the paper in place with one hand while he or she scribbles or draws with the other.

0 points: Child does not hold down paper when making marks on the paper. Child leans or lies on paper to hold it in place.

### Imitates Stroke Series Horizontal

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>2 crayon and sheet of blank unlined white paper</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Place the paper on the table, in front of the child. Then place one crayon on the paper using the other crayon, draw a straight vertical line on the paper, moving the crayon rapidly toward the child while saying, See? It goes zip! You do it! Allow the child time to reproduce the stroke. Regardless of the child’s performance, draw a horizontal line on the paper, moving the crayon from your right to your left while saying, Now make it go this way. Zip! You do it. You may hold the paper in place for the child. If the child makes a definite stroke in any direction, make circular strokes on the paper and say, Now make it go this way. You do it.

1 point: Child’s horizontal stroke is within approximately 30º of your horizontal line.

0 points: Child’s does not make horizontal stroke.

### Imitates Stroke Series: Vertical

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>2 crayon and sheet of blank unlined white paper</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>
Place the paper on the table, in front of the child. Then place one crayon on the paper using the other crayon. Draw a straight vertical line on the paper, moving the crayon rapidly toward the child while saying, **See? It goes zip! You do it!** Allow the child time to reproduce the stroke. Regardless of the child’s performance, draw a horizontal line on the paper, moving the crayon from your right to your left while saying, **Now make it go this way. Zip! You do it.** You may hold the paper in place for the child. If the child makes a definite stroke in any direction, make circular strokes on the paper and say, **Now make it go this way. You do it.**

1 point: Child’s vertical stroke is within approximately 30\(^\circ\) of your vertical line.

0 points: Child does not make vertical stroke.

### Connecting Blocks: Together

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor sitting</td>
<td>Connecting block set</td>
<td>1</td>
<td>No timed</td>
</tr>
</tbody>
</table>

Note. Prior to using the connecting block for the first time, separate and reconnect the blocks several times in order to facilitate the child’s manipulating the blocks.

Disconnect the blocks before you present them to the child. Place the blocks on the table in front of you and demonstrate connation them using three blocks. Disconnect the blocks, give all six blocks to the child, and tell the child to put all of them together.

1 point: Child puts all the blocks together. At least two connector knobs on each block should be correctly aligned and secured to another block. The blocks do not need to be assembled into stacks and rows, but must all be connected.

0 points: Child leaves one or more blocks unconnected.

### Imitates Stroke Series: Circular

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>2 crayons and sheet of blank unlined white paper</td>
<td>1</td>
<td>No timed</td>
</tr>
</tbody>
</table>

Place the paper on the table, in front of the child. Then place one crayon on the paper using the other crayon. Draw a straight vertical line on the paper, moving the crayon rapidly toward the child while saying, **See? It goes zip! You do it!** Allow the child time to reproduce the stroke. Regardless of the child’s performance, draw a horizontal line on the paper, moving the crayon from your right to your left while saying, **Now make it go this way. Zip! You do it.** You may hold the paper in place for the child. If the child makes a definite stroke in any direction, make circular strokes on the paper and say, **Now make it go this way. You do it.**

1 point: Child produces a mostly curved shape. There should not be more than a one inch gap between the beginning and end of the circle. Give credit even if the child initially makes a circular shape then scribbles over it, or continues to draw a series of circles in a spiral fashion.

0 points: Child produces an irregular shape (e.g., contains corners or angles or is asymmetrical) or curved shape with a gap larger than 1 inch.
During testing, observe the child to see if he or she turns from his or her back to the side. If you do not observe this, lay the child supine on the exam surface, making sure he or she is free from restrictions. Ring the bell or shake the rattle to the side of the his or her head, but just out of reach in an attempt to get the child to roll one side and grasp the toy. Repeat on the child’s other side.

1 point: Child turns from his or her back to both the right and left sides.
0 points: Child does not roll to his or her side. Child rolls to one side.

During testing, observe the child to see if he or she pushes up on both hands so that the head and chest are lifted off the exam surface. If you do not observe this, position yourself at the child’s head and present an object several inches above the exam surface in an attempt to attract the child’s attention so that he or she will raise up.

1 point: Child supports his or her weight on both hands. The head and trunk should be raised off the exam surface while hips and upper legs remain on the exam surface.
0 points: Child does not use extended arms to raise his or her trunk, or trunk is not raised off the exam surface.

With the child seated, proved pelvis support by placing your hands around the child’s lower back. According to the child’s ability to sit alone, gradually loosen your hold.

1 point: Child sits alone without support for at least 5 seconds.
0 points: Child sits alone for less than 5 seconds before losing balance and falling over. Child uses his or her arms to prop him-or herself up.
23 Pulls up to sit

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level supine</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Situate yourself at the child’s feet. Place your thumbs in the palms of the child’s hands and wrap your fingers around the back of his or her hands (see accompanying figure). Allow the child to pull to a sitting position. Gradually raise your hands as the child pulls up, but do not pull the child. You may elicit the response by gently tugging on child’s hands.

1 point: Child holds onto your thumbs to pull up to sit.
0 points: Child does not pull him –or herself up to sit, but is merely pulled along buy you.

24 Grasps foot with hands

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level supine</td>
<td>Facial tissue</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

When the child is lying on the exam surface, observe if he or she uses one or both hands to grasp a foot. If the child does not spontaneously grasp his or her foot, draw attention to the feet. For example, you may drape a tissue on one of the child’s socks off, or play with the child’s feet you can bring the child’s feet up toward his or her head and then release them.

1 point: Child brings one or both feet up to his or her hands (above the hips) and grasps a foot.
0 point: Child does not grasp either foot.

25 Rolls from back to stomach

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level supine</td>
<td>Bell or rattle</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she moves from his back to stomach by rolling to the right or to the left. If you do not observe this, shake the bell or rattle at one side of the child but outside his or her reach. If the child does not respond by rolling to his or her stomach, repeat on the other side.

1 point: Child rolls from back to stomach, rolling from either side.
0 point: Child does not roll from back to stomach. Child rolls only to side.

26 Sits Without Support Series :30 Seconds

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Stopwatch</td>
<td>1</td>
<td>30 seconds</td>
</tr>
<tr>
<td>Series items</td>
<td>22 (5 seconds), 26 (30 seconds)</td>
<td>1</td>
<td>30 seconds</td>
</tr>
</tbody>
</table>

With the child seated, provide support by placing your hands around the child’s Lower Back. According to the child’s ability to sit alone, gradually loosen your hold.

1 point: Child sits a long without support f or at least 30 seconds. Child may lose balance once or twice but is able to self- right (does not fall over).
0 point: Child sits alone for less than 30 seconds before losing balance and falling over.
Sits Without Support and Holds Object

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Object of interest and stopwatch</td>
<td>1</td>
<td>60 seconds</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she manipulates an object while sitting without support on the exam surface. If the child is sitting unsupported, you may hand him or her an object. Begin timing after the object is in the child’s hands.

1 point: Child sits alone for at least 60 seconds while manipulating an object
0 point: Child sits alone for less than 60 seconds. Child loses balance while manipulating object

Rotates Trunk While Seated

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Bell or object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

While the child sits without support, ring the bell or show an object to the child to attires his or her attention to the object. Place the object 6-8 inches from the child’s side and slightly behind him or her. Encourage the child to reach for the object. Present the object on both sides of the child.

1 point: Child rotates his or her trunk and reaches for the object. The child may use one arm for support.
0 points: Child moves out of the seated position in order to grasp the object.

Makes stepping Movements

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Stand the child on the floor while supporting him or her by placing your hands under the arms. Lean the child forward to encourage stepping movements.

1 point: Child makes at least two stepping movements that propel him or her forward, even if child does not fully support his or her own weight.
0 points: Child makes fewer than two stepping movements or makes stepping movements (e.g., lifts foot up and down) but does not move forward.

Crawls Series: On Stomach

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prone</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>30 (on stomach), 31 (crawl position), 34 (crawl movement)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Place the child in a prone position. Place an object of interest approximately 12 inches in front of him or her (out of reach). Place the object farther away if it looks like he or she is able to crawl. Encourage the child to get the object.
1 point: Child uses both arms to move forward on stomach approximately 3 feet. Some active trunk and leg movements may be used to assist in movement. Score 1 point if the child shifts to the crawl position or actually moves forward by crawling on hands and knees.

0 points: Child makes forward progress by scooting on the buttocks.

<table>
<thead>
<tr>
<th>31</th>
<th>Crawl Series: Crawl position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Prone</td>
<td>Object of interest</td>
</tr>
<tr>
<td>Series items</td>
<td>30 (on stomach), 31 (crawl position), 34 (crawl movement)</td>
</tr>
</tbody>
</table>

Place the child in prone position. Place an object of interest approximately 12 inches in front of him or her (out of reach). Place the object farther away if it looks like he or she is able to crawl. Encourage the child to get the object.

1 point: Child moves from lying prone to being up on his or her hands and knees. Child need not show forward progress.

0 points: Child moves forward on his or her stomach. The child’s trunk is not elevated above the surface.

<table>
<thead>
<tr>
<th>32</th>
<th>Moves From Sitting to Hands and Knees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Floor sitting</td>
<td>Object of interest</td>
</tr>
</tbody>
</table>

Observe if the child moves from a seated position to hands and knees. If you do not observe this, place an object just out of the child’s reach and encourage him or her to get the object.

1 point: Child moves from a seated position to hand and knees.

0 points: Child loses balance when changing positions or does not move from seated position to hand and knees.

<table>
<thead>
<tr>
<th>33</th>
<th>Supports Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Standing</td>
<td>None</td>
</tr>
</tbody>
</table>

Stand the child on the floor and hold his or her hands so that the arms are extended at shoulder height. If the child appears able to support the weight while standing, slowly loosen your hold on him or her. Observe the child to see if he or she stands momentarily, using your hands for balance but not for support.

Keep your hands for balance but not for support.

1 point: Child supports his or her own weight for at least 2 seconds, using your hands for balance only.

0 points: Child supports his or her own weight for less than 2 seconds, or requires additional adult support to remain standing.
### Crawls Series: Crawl Movement

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prone</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

**Series items**: 30 (on stomach), 31 (crawl position), 34 (crawl movement)

Place child in a prone position. Place an object of interest approximately 12 inches in front of him or her (out of reach). Place the object farther away if it looks like he or she is able to crawl. Encourage the child to get the object.

**1 point**: Child makes forward progress of at least 5 feet by crawling on his or her hands and knees.

**0 points**: Child moves forward less than 5 feet by crawling or forward progress is made by crawling on stomach.

### Raises Self to Standing Position

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

During testing, observe the child to see if he or she pulls to a standing position from a seated position using a chair, table leg or other convenient object for support. If you do not observe this, sit down next to the child so that he or she can pull up on you. Encourage the child to get up, or place him or her next to a stable chair and place an object on the edge of the chair to entice the child to get up.

**1 point**: Child raises self to a standing position, using a chair or other convenient object for support.

**0 points**: Child does not pull himself or herself up to a standing position. Child loses balance or requires adult assistance to pull himself or herself up.

### Bounces while Standing

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Stand the child on the floor and hold his or her hands so that the arms are extended at shoulder height. If the child appears able to support the weight while standing, slowly loosen your hold on him or her according to the ability to stand unsupported. Encourage him or her to bounce by modeling the movement with your legs or gently move the child’s arm up and down to encourage bouncing.

**1 point**: Child bounces up and down at least twice by alternately bending and straightening the knees. Support may be used.

**0 points**: Child does not bend knees to bounce. Child only bends knees to move downward, but does not straighten to move upward.

### Walks Series: With Support

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>
If the child is freely walking, you do not need to follow the administration procedure and may score from incidental observation. If the child is not walking freely, stand the child on the floor and hold his or her hands so that the arms are extended at the shoulder height. Encourage the child to walk toward you. If the child walks with coordinated steps, slowly release your grasp on the child’s hands according to his or her ability to walk unsupported.

**1 point:** Child walks by making coordinated, alternating stepping movements. He or she may hold on to one or both of your hands for support. Score 1 point if the child is freely walking.

**0 points:** Child makes stepping movements with one foot only. Child does not move forward. Child requires more than an adult’s hands for support.

### 38 Walks Sideways With Support

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Stand the child next to support (e.g., two chairs placed side by side), and observe if he or she moves from one point to another by walking sideways. If the child can stand with support but has not walked, place an object of interest on the furniture just out of reach so that he or she must walk sideways to reach the object of interest.

**1 point:** Child walks sideways while holding on to furniture for support and balance. Child should lift and move one foot, then lift and place the other foot next to the first foot while holding on to the furniture. Score 1 point if the child walks sideways without support.

**0 points:** Child does not walk sideways.

### 39 Sit Down With Control

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

**Note.** Be prepared to support the child if he or she appears unstable when attempting to sit.

When the child stands (with or without support), observe how he or she lowers to a sitting position.

**1 point:** Child purposely lowers from a standing to sitting position in a controlled manner.

**0 points:** Child fails to a sitting position.

### 40 Stands Alone

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

Stand the child on the floor and hold his or her hands so that the arms are extended at shoulder height. Slowly release your grasp on the child’s hands.

**1 point:** Child stands alone for at least 3 seconds after you release his or her hands.

**0 points:** Child stands alone for less than 3 seconds or does not release the adult’s hands.
In a playful manner, place the child on his or her back on the floor, away from any objects that could be used for support. Encourage the child to stand up.

1 point: Child comes to a standing position, rolling first to a prone or quadruped (hands and feet on the floor) position, without using any support. Score 1 point if the child rolls to one side and stands without using any support (demonstrating a more advanced standing technique).

0 points: Child does not stand up or stands up only with support.

If the child is freely walking, you do not need to follow the administration procedure and may score from incidental observation. If the child is not walking freely, stand the child on the floor and hold his or her hands so that the arms are extended at the shoulder height. Encourage the child to walk toward you. If the child walks with coordinated steps, slowly release your grasp on the child’s hands according to his or her ability to walk unsupported.

1 point: Child takes at least three steps without support, even if the gait is stiff-legged and wobbly.

0 points: Child takes fewer than three steps without support. Child does not attempt to walk unsupported.

If the child is freely walking, you do not need to follow the administration procedure and may score from incidental observation. If the child is not walking freely, stand the child on the floor and hold his or her hands so that the arms are extended at the shoulder height. Encourage the child to walk toward you. If the child walks with coordinated steps, slowly release your grasp on the child’s hands according to his or her ability to walk unsupported.

1 point: Child takes at least 5 steps independently, displaying coordination and balance.

0 points: Child takes 4 or fewer steps independently. Child’s gait is stiff-legged and wobbly.
Using an overhand motion, throw the ball gently toward the child so that it lands in front of the child. Allow him or her to retrieve it. If the child does not retrieve the ball, hand the ball to the child and encourage him or her to throw it. If the child does not throw the ball, retrieve it, throw it to the child again, and urge him or her to throw it back.

**1 point:** Child purposely throws the ball forward using either an underhand or overhead motion.

**0 points:** Child drops or rolls the ball or flings it backward.

---

### Squats without Support

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>Object of interest</td>
<td>1</td>
<td>Not timed</td>
</tr>
</tbody>
</table>

While the child is standing, place an object on the floor and encourage the child to pick it up.

**1 point:** Child moves from standing to squatting to standing while maintaining his or her balance without using any support.

**0 points:** Child sits down to retrieve the object.

---

### Stands Up Series: Mature

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>None</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>41(alone), 46 (mature)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In a playful manner, place the child on his or her back on the floor, away from any objects that could be used for support. Encourage the child to stand up.

**1 point:** Child rolls to one side and stands without using any support. Score 1 point if the child sits straight up, without first rolling into a prone or quadruped (hands and feet on floor) position before standing.

**0 points:** Child requires support to stand. Child rolls into prone or quadruped position before standing.

---

### Walks Up Stairs Series: Both Feet on Each Step, With Support

<table>
<thead>
<tr>
<th>Position</th>
<th>Materials</th>
<th>Trials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing</td>
<td>stairs</td>
<td>1</td>
<td>Not timed</td>
</tr>
<tr>
<td>Series items</td>
<td>47(both feet, with support), 57 ( both feet, alone), 64 (alternating feet, alone)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Place the child at the bottom of the set of stairs. If the child does not spontaneously begin to climb the stairs, walk up the stairs and stand close by the child in case he or she loses her balance, but do not hold the child’s hand. You may continue to encourage the child to climb the stairs.

If the child is able to walk up the stairs while using the wall or handrail for support, tell the child to walk up again without using the wall or handrail.
1 point: Child walks up at least three steps, using the wall or handrail for support and placing both feet on each step before stepping up to the next. Child must remain upright when he or she is climbing up both steps. Score 1 point if the child walks up the stairs without using the wall or handrail for support.

0 points: Child walks up two or fewer steps. Child moves up the stairs by sitting down and scooting up each step.

<table>
<thead>
<tr>
<th>48</th>
<th>Walks Backward 2 Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Standing</td>
<td>None</td>
</tr>
</tbody>
</table>

Demonstrate walking backward as you hold the child’s hand and encourage him or her to walk backward alongside you. Release the child’s hand and encourage him or her to continue taking steps backwards.

1 point: Child takes at least two steps backward unassisted.

0 points: Child takes less than two steps backward, or child walks backward and loses balance after one or two steps. Child requires adult support to walk backwards.

<table>
<thead>
<tr>
<th>49</th>
<th>Walk Down Stairs Series: Both Feet on Each Step, With Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Standing</td>
<td>Stairs</td>
</tr>
</tbody>
</table>

Series items: 49 (both feet, with support), 58 (both feet, alone), 67 (Alternating feet, alone)

After the child has walked up at least three steps, encourage the child to walk down the steps. Stand close by the child in case he or she loses balance, but do not hold child’s hand.

If the child is able to walk down the stairs while using the wall or handrail for support, tell the child to walk down again using the wall or handrail.

1 point: Child walks down at least three steps, using the wall or handrail for support and placing both feet on each step before stepping down to the next step. Score 1 point if the child walks down the steps without using the wall or handrail.

0 points: Child walks down two or fewer steps. Child moves downstairs by climbing backwards on hands and knees. Child moves down stairs by sitting down and scooting down each step.

<table>
<thead>
<tr>
<th>50</th>
<th>Runs With Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Materials</td>
</tr>
<tr>
<td>Standing</td>
<td>Large ball</td>
</tr>
</tbody>
</table>

Roll the ball across the floor and encourage the child to run and get the ball.

1 point: Child runs with good coordination. The child’s gait should be rapid and even, with a narrow base of support (with legs under torso).

0 points: Child runs with uneven gait, with legs spread more than shoulder width apart.
Stand beside the child and hold one hand. Ask the child to lift his or her foot. You may demonstrate by lifting your left foot as you encourage the child to lift his or hers. You may also point to the foot to indicate which foot should be lifted. Attempt to release the child’s hand (according to the child’s ability to balance), so that the child balances on one foot alone.

On the Record Form, indicate how long the child was able to balance on his or her right foot with support and without support (if that occurs).

1 point: Child balances on his or her right foot while you hold one of his or her hands. Score 1 if the child stands alone on right foot.

0 points: Child does not balance on foot. Child balances on foot but requires more support than holding an adult’s hand.

Stand beside the child and hold one hand. Ask the child to lift his or her foot. You may demonstrate by lifting your left foot as you encourage the child to lift his or hers. You may also point to the foot to indicate which foot should be lifted. Attempt to release the child’s hand (according to the child’s ability to balance), so that the child balances on one foot alone.

On the Record Form, indicate how long the child was able to balance on his or her right foot with support and without support (if that occurs).

1 point: Child balances on his or her right foot while you hold one of his or her hands. Score 1 if the child stands alone on right foot.

0 points: Child does not balance on foot. Child balances on foot but requires more support than holding an adult’s hand.

Demonstrate walking sideways while holding the child’s hand and encourage him or her to walk sideways alongside you. Release the child’s hand and encourage him or her to continue taking steps sideways.

1 point: Child takes at least two step sideways without support.
0 points: Child takes fewer than two steps sideways. Child requires support in order to walk sideways.
Annex 5. Amharic version questionnaire

አዲስ አበባ ከእኔናት በአወን ሁሉ ሁሉ በአወን በአወን

መረጃ ዯርም

ንግዴ ሲወን ሰኔታት የማንቂ እስራንት ከ24- 36ውን እስራንት የሆነው ያሆኑ የምህርት እስራንት መስተካከል የሚለትን የእርስዎ ተግባር 2ኛ ከላይ የእርስዎው መስተካከል ከ2/3 ተገቢው

አማር በእርስዎ የከተማ በ24- 36ውን ከሚለት እድሜ ያላቸው ከሁሉ ሁሉ ተገቢው እድሜ ይታወቂት ይታወቂት የእርስዎ የሚያስችሉ ያስመ рукባ ያስመ рукባ ያስመ рукባ ႋ፡፡ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукבר

አወን እኔ የሚካሄድው እኔ የህጻኑት እድገት መለኪያ ያለል ገፋ ከሚሳተፉት ማድ swims ከሚል እድሜ ይታወቂት ይታወቂት ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукባ ያስመ рукبرا

ምሜ የሚካሄድው እኔ የህጻኑት እድገት መለኪያ ያለል ገፋ ከሚሳተፉት ማድ swims ከሚል እድሜ ይታወቂት ይታወቂት ያስመ рукبرا

ምሜ የሚካሄድው እኔ የህጻኑት እድገት መለኪያ ያለል ገፋ ከሚሳተፉት ማድ swims ከሚል እድሜ ይታወቂት ይታወቂት ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рукبرا ያስመ рук布拉

በተዘዋዋሪ አስተዋጽኦ ተደርጋላችሁ፡፡ ያስመ рук布拉

ተመርጥችኋል፡፡ ያስመ рук布拉

ታደርጋላችሁ፡፡ ያስመ рук布拉

የመጀመርያው ቙ር በመጠይቅን ይካሄዳል፡፡ ያስመ рук布拉

በሎተሪ ዜና ያለያል፡፡ ያስመ рук布拉

ለወድስል፡፡ ያስመ рук布拉

የታገረ ይካሄዳል፡፡ ያስመ рук布拉

ከቡድናችን ፈላል መረጃ ሰብሳቢ ይመጣል፡፡ ያስመ рук布拉

ልጅዎት የጥናቱ ያስመ рук布拉

የታገረ ይካሄዳል፡፡ ያስመ рук布拉

ከበትናችን ፈላል መረጃ ሰብሳቢ ይመጣል፡፡ ያስመ рук布拉

ልጅዎት የጥናቱ ያስመ рук布拉

የተንካባካቢው ዋል ያስመ рук布拉

የታገረ ይካሄዳል፡፡ ያስመ рук布拉

ያወስዳል፡፡ ያስመ рук布拉

ከበትናችን ፈላል መረጃ ሰብሳቢ ይመጣል፡፡ ያስመ рук布拉

ልጅዎት የጥናቱ ያስመ рук布拉

የታገረ ይካሄዳል፡፡ ያስመ рук布拉

የታገረ ይካሄዳል፡፡ ያስመ рук布拉
<table>
<thead>
<tr>
<th>ይወagnar</th>
<th>ይችል</th>
<th>ይወagnar</th>
<th>ይጋልል</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. እንተጠቀም እንተጠቀም ፈጣት ወር እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>2. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>3. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>4. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>5. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>6. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>7. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>8. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>9. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
<tr>
<td>10. እንተጠቀም እንተጠቀም ፈጣት ወር</td>
<td>ወር</td>
<td>ወር</td>
<td></td>
</tr>
</tbody>
</table>
ወንድ 2

እንደንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንንنى

ወንድ 2

አስደንንንንንንንንንንንنى

ወንድ 2

አስደንንንንنى

ወንድ 2

አስደንንنى

ወንድ 2

አስደንنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

ወንድ 2

አስደنى

 Antar K. 1972}
1. የመጋቢት

ወን ከቅርሳ ወወ ከፍተኛ ሽልማት ያይ ሥራ እን ከ 30.48 እ.ም. ከ ከሚችሉ ከጋahrenheit የተመለከት::

አል፣- በነህ ከተማ ከተከታከል ከተውለየ::

2. የንግድ ዓለም

ወን ከቅርሳ ከማጠበብ ያደርገ ያለበት ከፍተኛ ሥራ እን ከሚችሉ ከጋahrenheit የተመለከት::

አል፣- በነህ ከጆና ከተማ ያል ከሚችሉ ከጋahrenheit የተውለየ::

3. የክርንክ ዉሳቢ

ወን ከማስረት ያስፈርድ ከተማ ከፍተኛ ምንክንያት ያለበት ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የአደርግ የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahuntery የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችል

4. የክርንክ ዉሳቢ ያስፈርድ

ወን ከማስረት ያስፈርድ ያል ከተማ ከፍተኛ ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋahrenheit የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችሉ ከጋاهرة የተውለየ:: በተመለከት ሥራ እን ከሚችል
132
133
13. ከልተ መልስ መሠረት (ii)

የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ከማይቅወ መስቀል የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

ልልልል:አስመራ ይህን ቅድማ ይህ ቤት የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ:: ይህ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

14. የጋት መልስ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ:: ይህ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

15. ከልተ መልስ ወንድ::

የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

ልልልል:የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ:: ይህ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::

16. በማን ችልት ያስታ ከስር ይወላል ወንድ::

የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ:: 

ልልልል:የሱ ከልተ መልስ ብቻ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል በተሰቀስ የሚሠራ ይህ መርምት ያሇው ፈንገን ይወላል ወንድ::
17. እንደ ወልሎት (ii)

หนึ่ง የወልሎት እንደ ወልሎት (ii) በማንስጭ ሁለተኛ የሚለት በማንስጭ ይህ ይታወጣል። የሚለት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንስጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀቱም በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል። ያየ ሆነ ከማስቀት በማንሳጭ ይህ ይታወጣል.ls
حضر የተፈለገው ወይም የተለፋው ውጤት ይታያ የእርስትሬታዊ ይችላል ከወሰን በአሁኔታ

አለባለ:- ስም ለተፈለገው ያገኝበትና ከላይ ይታያ መስራትን ከላይም ወይም የተፈለገው ውጤት ከወሰን በአሁኔታ ያላል ከወሰን ያስፈልጉ በአሁኔታ ስም ለተፈለገው ውጤት ይታያ የእርስትሬታዊ ይችል ትወፋ የሚለስ የተፈለገው ውጤት ይታያ የእርስትሬታዊ ይችል ከወሰን በአሁኔታ በአሁኔታ በአሁኔታ

22. የተፈለገው ወይም የተፈለገው ውጤት ይታያ የእርስትሬታዊ ይችል ከወሰን በአሁኔታ

አለባለ:- ስም ለተፈለገው ያገኝበትና ከላይ ይታያ መስራትን ከላይም ወይም የተፈለገው ውጤት ከወሰን በአሁኔታ ያላል ከወሰን በአሁኔታ ያስፈልጉ ትወፋ የሚለስ የተፈለገው ውጤት ይታያ የእርስትሬታዊ ይችል ከወሰን በአሁኔታ በአሁኔታ በአሁኔታ

23. ይህንድ/መንጋን መሃፋትና ይታያ የእርስትሬታዊ ይችል ከወሰን በአሁኔታ

አለባለ:- ስም ለተፈለገው ያገኝበትና ከላይ ይታያ መስራትን ከላይም ወይም የተፈለገው ውጤት ከወሰን በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔታ በአሁኔ ifstream: only
25. የላእን ከፋስ ወን incontr (ii)

ትይክታትን ያወጣ ከፋስ ወን incontr በስሩ ይሰራል። ይጠቃሚነቱን የህጤተውን የሆነ ዩታራትን መካከል መሆኑ ይችሉ። ይህ ያሉ የሚስት የሚለስ ያስታኝ ያስታኝ የህጤተውን የሆነ ዩታራትን መካከል ይችሉ።

26. የተረጋገጡ ይህ ወን incontr (iii)

የተረጋገጡ የቀረበ ዥረት incontr በስሩ ይሰራል። ይጠቃሚነቱን የህጤተውን ይችሉ።

27. የስፋ የጋ ከፋስ ወን incontr ከስ የጥታ

ልእን በሆኔ ከፋስ ወን incontr በስሩ ይሰራል። ይጠቃሚነቱን የህጤተውን ይችሉ። ይህ ያሉ የሚስት የሚለስ ይችሉ። ይህ ያሉ የሚስት የሚለስ ይችሉ። ይህ ያሉ የሚስት የሚለስ ይችሉ።

28. የስፋ ከፋስ ወን incontr ከስ ያስታኝ ያስታኝ መሆኑ

ለእን በሆኔ ከፋስ ወን incontr በስሩ ይሰራል። ይጠቃሚነቱን የህጤተውን ይችሉ።

137
29. hän-hän õella vundit otsivii otsik

30. hän-hän õella vundit otsivii otsik

31. 180 õella Ng oruç

32. õella Ng oruç

33. õella Ng oruç
አልье::

139
42. የእስairie የለ ውስጥ ያለ የስለትfeit የሆነም መሰጡ-

43. ይህም ፋን የihil ውስጥ ያለ የስለትfeit የሆነም መሰጡ-

44. ይህም ፋን የ∮ሬ ውስጥ ያለ የስለትfeit የሆነም መሰጡ-
45. የሰብ መሏች ላወን በግራቀት

የወን የሰብ መሏች ከስፋ ይዘተ እንወ ይዘተ እንወ መሏች ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይዘተ ከስፋ ይዘተ እንወ መሏች ከስፋ ይዘተ ላወን ይgebung እንወ መሏች ከስፋ ይዘተ ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgebung ላወን ይgebung እንወ መሏች ከስፋ ይgeb
48. የጆለም

49. የጆለም የልለም

50. የወጆለም- የልለም
አንደ-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነ🔎

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

እ ከአ-

አ-

አን-

ወንድ ጥላቁ ሳላ በህነሽ በመ-

ቁጥር በመ-

ተወጡ በላሸ ከአ-

-six-

414
53. ይምላት በማ- (ብ) ይምላት በማ- (ብ) ይምላት በማ- (ብ) ይምላት በማ- (ብ)

54. ኢትወ/አሰብ ይምላት (ብ) ኢትወ/አሰብ ይምላት (ብ) ኢትወ/አሰብ ይምላት (ብ) ኢትወ/አሰብ ይምላት (ብ)

55. ይ (ብ) ይ (ብ) ይ (ብ) ይ (ብ)

56. ሳፋስ ከተማ ይምላት (መብ-

57. በኋ ከተማ ይምላት
146
65. ከነሰ የጋ ከለ ከለ - 214

66. ከነሰ የጋ ከለ ከለ - 214

67. ከሶስ የጋ ከለ (ሀ)
149

68. የማለት ወንድ ውጫ- 114

69. የጠበቀ ከፍተኛ- 6

70. ቤጋጋ- በላል ዋድ ውጫ፣ ወስ-

71. የረጋጋሽ ውጫ- 214
150
151
152
![Image of a page from a document with Amharic text.](image-url)
154
155

87. የهجיר ዓለምን/መምላ (ii)

88. የተከበረው ይመለከት መለAGMENT

89. ይቅርናው ይፈ፦

90. የተደረገ ይ鼐ም
91. ውስፋ ወልስ

92. በታጠቃቀም የጎወን ከ(ፋ)

93.2 ከክንያታስፋ

94. ከፋፋፋ ውስፋ
25. የጋበሬት ምክንያት እና መምት

26. የትውቅ መል美媒

27. መግንባህ መል美媒

28. ይፋን
99. ይብታየት መልከቱ (የልያ ይህ) ከ

እንወቅዌት ወጊ ይብታየት የቅጫ ሳምን ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብٹለት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወ僳ዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልከት:: ከእንወቅዌት ወጊ ይብታየት የቅጫ ይገራረት ይታች ይህ መልክ
103. ከእንግዴ (ወንድ) የስስል

የወንድ እና ከእንግዴ በውጭ የስስል (መስለንተና ይህ) ማስረጃዎቹ የስስል ያስስል እንግዴ እና የስስል ውሃት የስስል የስስል ያስስል ያስስል ማስረጃዎቹ ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስසል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያስስል ያafil
አልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልልல
<table>
<thead>
<tr>
<th>Months</th>
<th>Days</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0 days-10</td>
<td>H</td>
</tr>
<tr>
<td>11</td>
<td>0 days-13</td>
<td>I</td>
</tr>
<tr>
<td>13</td>
<td>15 days</td>
<td>J</td>
</tr>
<tr>
<td>16</td>
<td>16 months</td>
<td>K</td>
</tr>
<tr>
<td>19</td>
<td>19 months</td>
<td>L</td>
</tr>
<tr>
<td>22</td>
<td>15 days</td>
<td>M</td>
</tr>
<tr>
<td>25</td>
<td>28 months</td>
<td>N</td>
</tr>
<tr>
<td>28</td>
<td>30 days</td>
<td>O</td>
</tr>
<tr>
<td>33</td>
<td>38 months</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19 (አትራል)</th>
<th>22 (አምላት የምን)</th>
</tr>
</thead>
<tbody>
<tr>
<td>የጆች በጆች የቻለ ከጆች በሚል</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ከንጉ የጆች</th>
<th>ሁሉ የጆች የቻለ ከጆች በሚል</th>
</tr>
</thead>
<tbody>
<tr>
<td>በጆች የጆች የቻለ</td>
<td>ከጆች በጆች የጆች የቻለ ከጆች በሚል</td>
</tr>
<tr>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>27 (Ք.հ.-Ք. հայ աշխատող)</td>
<td>33 (հ.տ. 24կմ այցելույթ)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>34</th>
<th>35</th>
<th>36</th>
<th>37</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1</td>
<td>0 1</td>
<td>0 1</td>
<td>0 1</td>
</tr>
<tr>
<td>38</td>
<td>የመንፋ ይ.swift በፋ. ያልጭ የመንፋ</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>በInforme ይ.swift በፋ. ያልጭ የመንፋ</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

| 39 | የመንፋ ይ.swift በፋ. | 0 | 1 |
|    | በInforme ይ.swift በፋ. | 0 | 1 |

| 40 | የተለያዩ ያ ያሉት | 0 | 1 |
|    | ያሉት ያ ያሉት | 0 | 1 |

| 41 | የተለያዩ ያሉት | 0 | 1 |
|    | ያሉት ያሉት | 0 | 1 |

| 42 | የሚና ከመንፋ ያሉት | 0 | 1 |
|    | ያሉት ያሉት | 0 | 1 |

<p>| 43 | የሚና ከመንፋ ያሉት | 0 | 1 |</p>
<table>
<thead>
<tr>
<th>Table 1</th>
<th>44</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>44</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 የሆ</td>
<td>በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0 የሆ</td>
<td>በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2</th>
<th>45</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3</th>
<th>46</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ የአስተዳደር እንወ ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4</th>
<th>47</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያጡ ያሆ</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0 የሆ በ20 በሆ የአስተዳደር ድንጋጌ የህግ ያሆን ያሆ</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### 1 ይል

<table>
<thead>
<tr>
<th>የጉዳት ያለውን በወን ያለው የወን ያለው ይወቅ ::</th>
</tr>
</thead>
</table>

### 61

| ያሸቡ ከጉዳት ይህ ይህ ይህ ይህ ከጉዳት ይህ ይህ ይህ ከጉዳት ይህ ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጥፋት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉ đaት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይሁን ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይህ ይህ ከጉዳት ይ.htm
<table>
<thead>
<tr>
<th>0</th>
<th>ወጎል ከፋወት እምወን ፈጠየቅ ያለፈ ከእል ከእል</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>ይወጣት ሰዓት ይቻላል</td>
</tr>
<tr>
<td>1</td>
<td>ይህ ፍወት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>0</td>
<td>ይህ ፍወት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>9</td>
<td>ይወጣት ሰዓት ይቻላል</td>
</tr>
<tr>
<td>1</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>10</td>
<td>ይወጣት ሰዓት ይቻላል : 1 ይወጣዉ</td>
</tr>
<tr>
<td>1</td>
<td>10 (1 ይወጣዉ) : 13(4 ይወጣዉ)</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>11</td>
<td>ይወጣት ሰዓት ይቻላል</td>
</tr>
<tr>
<td>1</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና ሰዓት ያሆና : : እምወን በሚለው ሳንгад ያቀረበ ያቀረበ ያቀረበ ያቀረበ : : ያቀረበ ያቀረበ ያቀረበ ያቀረበ : :</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>12</td>
<td>ይወጣት ሰዓት ይቻላል</td>
</tr>
<tr>
<td>1</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና ሰዓት ያሆና : : ሳንгад ያቀረበ ያቀረበ ያቀረበ ያቀረበ : : ያቀረበ ያቀረበ ያቀረበ ያቀረበ : :</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>13</td>
<td>ይወጣት ሰዓት ይቻላል : (4 ይወጣዉ)</td>
</tr>
<tr>
<td>1</td>
<td>10 (4 ይወጣዉ) : 13(4 ይወጣዉ)</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : : ያቀረበ ያቀረበ ያቀረበ ያቀረበ : : ያቀረበ ያቀረበ ያቀረበ ያቀረበ : :</td>
</tr>
<tr>
<td>1</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
<tr>
<td>0</td>
<td>ይወጣት ሰዓት ይቻላል ሰዓት ይቻላል ሰዓት ያሆና ሰዓት ያሆና : :</td>
</tr>
</tbody>
</table>
177
1 የወወ መለከያ እስከ ከረጋ እር/**<ወወ ያስወጣ እር** 34. ይህ እስከ ከረጋ እር** 34. መለከያ እስከ ከረጋ እር** እር** 34. ያስወጣ እር**

2 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

3 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

4 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

5 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

6 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

7 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

8 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

9 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

10 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

11 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

12 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

13 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

14 ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር** 34. ያስወጣ እር**

15 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

16 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

17 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

18 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

19 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

20 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

21 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

22 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

23 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

24 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

25 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

26 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

27 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

28 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**

29 ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር** 34. ያስወጡ እር**
### 15
#### ይ-Sah ኤለት : ዲፋᴱ ወልሎም

<table>
<thead>
<tr>
<th>15</th>
<th>ይ-Sah ኤለት እና የልልሎም ይ.Address:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>እልክ ኤልክ እና በكة ዋፋاء : እልክ ኤልክ እና የልልሎም ይ.Address:</td>
<td>1</td>
</tr>
</tbody>
</table>

### 16
#### ይ-Sah ኤለት : ዲፋ男主 ወልሎም

<table>
<thead>
<tr>
<th>16</th>
<th>ይ-Sah ኤለት እና የልልሎም ይ.Address:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>እልክ ኤልክ እና በكة ዋፋاء : እልክ ኤልክ እና የልልሎም ይ.Address:</td>
<td>1</td>
</tr>
</tbody>
</table>

### 17
#### ይ-Sah ኤለት : ዲፋ女主 ወልሎም

<table>
<thead>
<tr>
<th>17</th>
<th>ይ-Sah ኤለት እና የልልሎም ይ.Address:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>እልክ ኤልክ እና በكة ዋፋاء : እልክ ኤልክ እና የልልሎም ይ.Address:</td>
<td>1</td>
</tr>
</tbody>
</table>

### 18
#### ይ-Sah ኤለት : ዲፋ为主体 ወልሎም

<table>
<thead>
<tr>
<th>18</th>
<th>ይ-Sah ኤለት እና የልልሎም ይ.Address:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>እልክ ኤልክ እና በكة ዋፋاء : እልክ ኤልክ እና የልልሎም ይ.Address:</td>
<td>1</td>
</tr>
</tbody>
</table>

### 19
#### ይ-Sah ኤለት : ዲፋorph ወልሎም

<table>
<thead>
<tr>
<th>19</th>
<th>ይ-Sah ኤለት እና የልልሎም ይ.Address:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ውጤ</td>
<td>እና በኋሉ ከሽማ እና ወወ ወሎች ከተሎካል ይታጠቸው ይሆናል ነው።</td>
<td></td>
</tr>
<tr>
<td>0 ውጤ</td>
<td>እና ከሽማው ይህምን ያላው ገላው የሚያሳያ ይታጠቸው እና ከሽማው ይህምን የሚያሳያ እና ወሎች የሚያሳያ ነው።</td>
<td></td>
</tr>
</tbody>
</table>

| 20 | የጉስትና ወጪ በበኩለ ይካሎ የማለት ይችላሉ |
| 0 ውጤ | ሁሉ የመሳሳትንና ይካሎ የማለት ይችላሉ ያስትና ነው። |
| 1 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ እና ወሎች የሚያሳያ ነው። |
| 0 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ ያስትና ነው። |

| 21 | የጉስትና ወጪ በበኩለ ይካሎ የማለት ይችላሉ |
| 0 ውጤ | ሁሉ የመሳሳትንና ይካሎ የማለት ይችላሉ ያስትና ነው። |
| 1 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ እና ወሎች የሚያሳያ ነው። |
| 0 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ ያስትና ነው። |

| 22 | የጉስትና ወጪ በበኩለ ይካሎ የማለት ይችላሉ |
| 0 ውጤ | ሁሉ የመሳሳትንና ይካሎ የማለት ይችላሉ ያስትና ነው። |
| 1 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ እና ወሎች የሚያሳያ ነው። |
| 0 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ ያስትና ነው። |

| 23 | ይህምን ወጪ በበኩለ ይካሎ የማለት ይችላሉ |
| 0 ውጤ | ሁሉ የመሳሳትንና ይካሎ የማለት ይችላሉ ያስትና ነው። |
| 1 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ እና ወሎች የሚያሳያ ነው። |
| 0 ውጤ | ማስታወቀ ይህምን የማለት ይችላሉ ያስትና ነው። |

| 24 | የጉስትና ወጪ በበኩለ ይካሎ የማለት ይችላሉ |
| 0 ውጤ | ሁሉ የመሳሳትንና ይካሎ የማለት ይችላሉ ያስትና ነው። |
| 17 (နိုင်ငံတကာ ပို့ ထား အမြန် ပြောင်းလဲ သည် စိတ်) | 20 (စိတ်-ဓာတ် စီးပွား) |
| 24 (ပြည် နိုင်ငံတကာ ပို့ ထား) | 26 (နိုင်ငံတကာ ပို့ ထား အမြန် ပြောင်းလဲ သည် စိတ်) |

29

30

31

32

33

34
1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

26.

27.

28.

29.

30.

31.

32.

33.

34.

35.

36.

37.

38.

39.
<table>
<thead>
<tr>
<th>40</th>
<th>እሆን ተከታዩ ያደርጋ ይጋት ይታው ያሆ ይ : መጋdisposed of the tribe : 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>41</th>
<th>እሆን ተከታዩ ያደርጋ ይጋት ይታው ያሆ ይ : መጋdisposed of the tribe : 41</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>42</th>
<th>ይጋት ያስፋፋ ይታው ያሆ ይ : መጋdisposed of the tribe : 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>43</th>
<th>ያስፋፋ ይታው ያሆ ይ : መጋdisposed of the tribe : 43</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

184
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Text Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1</td>
<td>የ_flight stage እንወሰን የወስድ ያለው መጋቢዎቹ ይካል።</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>የ_flight stage እንወሰን የወስድ ያለው መጋቢዎቹ ይካል።</td>
</tr>
<tr>
<td>26</td>
<td>1</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td>29</td>
<td>1</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስᒃር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td>30</td>
<td>1</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ከሳም ያስታbestos ቻሉ 30 ምስክር 0 ምስክር 1 22 (5 ምስክር) 26 (30 ምስክር)</td>
</tr>
</tbody>
</table>

186
<table>
<thead>
<tr>
<th>31</th>
<th>የተጠቃወነት ሁኔታ: የማናቸው</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 (ምወር )፣31 (ማናቸው )፣34(ማናቸው ያማከቅብ )</td>
<td>ይህ ከተካባወ ከፋይ የሚጠቀም የሆነ ህጋዊ የሚባል የመጨማር ያማከቅብ ያል ይገኝ ይታከረ ይናላል ይሳል ይብከር ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ለማድረስ ያማካከራ የሚካስቸ ከፋይ ይታከረው ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>32</th>
<th>ከተጠቃወነት የማህ.transaction የማንሂ የሚልክ የሚስልንስ</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 (ማህ )፣32(ማህ )፣34(ማህ ያማከቅብ )</td>
<td>ወይ ከተጠቃወነት የማህ.transaction የማንሂ የሚልክ የሚስልንስ የሚችል ይህን ለማድረስ የሚከራከር ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ከተጠቃወነት የመለስ የሚጠቀም የሚባል የሚታፈ የሚጠቀም የሆነ ህጋዊ የሚባል የመጨማር ያማከቅብ ያል ይገኝ ይታከረ ይናላል ይሳል ይብከር ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>33</th>
<th>የነበረ ከተለ መስማማ ይስልንስ</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 (ማህ )፣33(ማህ )፣34(ማህ ያማከቅብ )</td>
<td>ወይ ከተጠቃወነት የመለስ የሚጠቀም የሚባል የሚታፈ የሚጠቀም የሆነ ህጋዊ የሚባል የመጨማር ያማከቅብ ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ከተጠቃወነት የመለስ የሚጠቀም የሚባል የሚታፈ የሚጠቀም የሆነ ህጋዊ የሚባል የመጨማር ያማከቅብ ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>34</th>
<th>የተጠቃወነት የማህ.የመጨማር</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 (ማህ )፣34(ማህ )፣34(ማህ ያማከቅብ )</td>
<td>ወይ ከተጠቃወነት የማህ.የመጨማር የሚጠቀም የሆነ ህጋዊ 100 ለማሸያ የመጨማር ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ከተጠቃወነት የማህ.የመጨማር የሚጠቀም የሆነ ህጋዊ 100 ለማሸያ የመጨማር ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>35</th>
<th>የመራጆ መሆኑ ይስልንስ</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 (ማህ )፣35(ማህ )፣34(ማህ ያማከቅብ )</td>
<td>ወይ ከተጠቃወነት የመራጆ መሆኑ የሚወረስ የሚጠቀም ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ከተጠቃወነት የመራጆ መሆኑ የሚወረስ የሚጠቀም ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>36</th>
<th>የመራጆ ትምህርት ይስልንስ</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 (ማህ )፣36(ማህ )፣34(ማህ ያማከቅብ )</td>
<td>ወይ ከተጠቃወነት የመራጆ ትምህርት የሚጠቀም ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 የጥል</td>
<td>ወይ ከተጠቃወነት የመራጆ ትምህርት የሚጠቀም ያል ይገኝ ይስላለ ለማስረክት ያማከቅብ ያለበትም፡፡</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
37 ፋሬና ድር ይወል ጥወን ወቅ እስከ ዝቅ

38 ይህንን ድር ይወል ጥወን

39 ይህንን ድር ይወል ጥወን

40 ይህንን ድር ይወል

41 ይህንን ድር ይወል : እስከ ዝቅ

42 ይህንን ድር ይወል : እስከ ዝቅ
49

50

51

52

53

190
Assurance by principal investigator and approval by primary advisor

Assurance of principal investigator

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the Research Publications Office in effect at the time of grant is forwarded as the result of this application.

Name of the student: Helen Tesfayohannes

Date.____________________  Signature _____________________

Approval of the primary Advisor

Name of the primary advisor: Dr. Mulugeta Betre

Date.____________________  Signature _____________________

191