University of Wisconsin-La Crosse

Graduate Studies

Standardized Assessment Tools Commonly Used in Adapted Physical Education

A Critical Analysis Project Submitted in Partial Fulfillment of the Requirements for the
Master of Science in Exercise and Sport Science-Physical Education Teaching
Adapted Physical Education Teaching Concentration

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CRITICAL ANALYSIS PROJECT
FINAL APPROVAL FORM

Candidate: Laura Fraietta

We recommend acceptance of this Critical Analysis Project in partial fulfillment of the candidate's requirements for the degree:

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ABSTRACT

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According to federal law, students with disabilities (SWD) must receive a free appropriate public education, including instruction in physical education. Under subsection 16 in the Individuals with Disabilities Education Act (IDEA) 2004, SWDs must be included in all assessments provided by teachers in which individual accommodations can be implemented. Standardized assessment tools are often used in adapted physical education (APE) to measure a student's present level of performance. Assessment results guide a physical educator to participate in the individualized education program (IEP) process where eligibility, placement, and instructional decisions are made for each student receiving special education services. The purpose of this critical analysis project was to develop an instructional video to describe commonly used standardized assessment tools used in school-based APE programs. The video was designed for general and adapted physical education teachers, related service professionals, special education teachers, parents of SWDs, and other professionals. The video describes the purpose of assessment in APE, including the IEP process. It also provides detailed summaries of various assessment tools including the Test of Gross Motor Development-2 (TGMD-2), Brockport Physical Fitness Test-2 (BPFT-2), Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2), Peabody Developmental Motor Scales-2 (PDMS-2), and the Adapted Physical Education Assessment Scales-2 (APEAS-2). Practical assessment strategies are provided specific to each tool. In addition, many resources related to APE assessment are summarized.

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CHAPTER I

INTRODUCTION

According to the Individuals with Disabilities Education Improvement Act (IDEA 2004), students with disabilities (SWDs) are guaranteed a free appropriate public education, which includes the process of assessment (U.S. Department of Education, 2006). Under IDEA Section 1412: subsection 16, all students are included in state and districtwide assessment programs, which can be accommodated or changed depending on the needs of the student (Wright, 2004). Since physical education is part of special education, this content area must also be assessed. Formal assessment in physical education is an important part of determining a student's present level of performance. When results are analyzed and compared to standards, teachers can make physical education eligibility, placement, and instructional decisions, which are part of the Individualized Education Program (IEP) process (Horvat, Kelly, Block, & Croce, 2019).

The Individualized Education Program (IEP) Process

The IEP is a legal document that is developed for an individual with a disability and is used to meet their unique educational needs within a school district (U.S. Department of Education, 2006). Much of the IEP is based on assessment results from each subject, and is reviewed various times throughout the school year to discuss the student's present level of performance for progress monitoring and updates.

Within the IEP process, there are steps to determine where the student should be placed to provide the most appropriate education services, including specially designed physical education. According to IDEA 2004, SWDs should be placed in their least restrictive environment (LRE). The LRE is where the student can safely and successfully

participate in the educational setting, with accommodations as needed (Wright, 2004). In physical education, SWD may be integrated into general physical education, be grouped in an adapted physical education (APE) class, or be a part of any other instruction to meet their unique individual needs. To determine the LRE for each individual student, teachers must follow the IEP process, which entails referral, identification, eligibility, development of the IEP, implementation of the IEP including placement, and evaluation and reviews (Smith, 2007). Assessment is used often within the IEP process to make appropriate decisions (Horvat, et al., 2019).

Once a student is referred, they must identify as having one of the disabilities stated in IDEA 2004 in order to receive special education services. Along with having a disability, the student must be formally assessed to determine if they are eligible for APE services. Teachers must choose an assessment that is most appropriate for the student, and be able to administer it properly. Typically, a norm-referenced assessment tool is used for eligibility decisions so that the students' results are compared to standards (Horvat, et al., 2019).

The assessment that is being used should also allow for variations in performance and be able to measure a student's performance over a certain amount of time (Mushkin, Williston, Baranowski, Lukshaitis, & Hengstman, 2017). As the teacher collects data and results are evaluated, they need to determine the student's present level of motor performance. According to the National Association for Sport and Physical Education (NASPE) and the American Association for Physical Activity and Recreation (AAPAR), for a student to be eligible for APE services, they must score 1.5 standard deviations below the mean on norm-referenced tests, or classify as at least two years below their age

level on criterion-referenced tests (American Association for Physical Activity and Recreation/National Association for Sport and Physical Education, 2010).

Based on assessment results, physical educators have an important role in determining where the student will learn best and where they can safely and successfully participate in physical education. According to IDEA 2004, SWDs must be offered access to general physical education, unless specially designed physical education, such as APE, is necessary (U.S. Department of Education, 2006). To make an appropriate placement decision, teachers must collect and compare assessment data for the SWD, and the students in the desired setting (Horvat, et al., 2019). Discussing assessment results and determining the LRE for the student are crucial parts of the IEP process. Without the physical educator's input and contribution, administrators will make the decision as to where the child will be placed (Silliman-French & Connor-Kuntz, 2003). Although the physical educator is the expert in where the student should be placed, there are many other considerations for placement. According to NASPE and AAPAR's Adapted Physical Activity Council, part of the placement decision should also be based on fitness, psychomotor skills, socialization, behavior, ability to be in large groups, and parental interests for the child (AAPAR/NASPE, 2010).

When a physical educator has collected and analyzed data from the assessment results, they can create and implement IEP goals within their class. These proposed goals must then be presented to the IEP committee, including parents, and be agreed upon to be placed on the IEP. Teachers should focus on their instructional decisions when they have a student in their class who needs further accommodations and/or supports. A physical education teacher can use most assessments for instructional decisions, which can be

included into their everyday lesson plan activities (Horvat, et al., 2019). Based on the assessment results, the physical education teacher can determine the student's present level of performance for specific skills, which can lead to the creation of short-term objectives or benchmarks and annual IEP goals. These goals can focus on developing and improving competency levels in the psychomotor, cognitive, and affective domains. The goals that are created for the child must be meaningful, measurable, and should be based on assessment data. In the IEP process, measurable goals must be based on the present level of performance and be written so that the student can demonstrate observable progress with a skill (Wright, Wright, & O'Connor, 2014). Goals on the IEP are evaluated throughout the year to review, change, or add anything that would be most appropriate for the student. Progress reports on the goals are also shared with parents to determine if their child is improving in that specific skill area.

In summary, assessments provide information needed for the IEP process. In order for teachers to collect this information, they need to select an assessment tool that is most appropriate for the student. Assessment instruments vary in what they test such as gross motor skills, motor proficiency, and health-related physical fitness. According to IDEA 2004, an appropriate assessment to use in APE is one that is technically sound in relation to the cognitive, affective, and psychomotor domains (U.S. Department of Education, 2006).

Selecting an Appropriate Assessment Instrument

To measure a student's motor performance in physical education, teachers must select an assessment instrument that is age appropriate and assesses the skills that are necessary for a student's motor and/or fitness development. Assessments should allow

for variations in performance and be able to measure a student's performance over a certain period of time (Mushkin, et al., 2007). The instrument should also be reliable and valid for the teacher to receive the most accurate and consistent results. Test reliability refers to the degree to which results are consistent over time. For an assessment instrument to be considered reliable, researchers must use the same protocols for each test and receive similar scores (Joppe, 2000).

If an assessment instrument measures what it is intended to measure, it is considered to be valid (Joppe, 2000). For example, the purpose of the Test of Gross Motor Development-2 (TGMD-2) is to measure locomotor and object control skills. It is a valid instrument because the test items do in fact measure the motor development of a child through locomotor and object control skills (Ulrich, 2000). Another consideration when selecting an assessment tool is the administration of the test. Teachers should be familiar with the content and be able to administer it properly to all students. Manuals and other program materials are often provided within assessment kits, which assist test administrators to understand and administer them effectively.

Commonly Used Assessment Instruments in Adapted Physical Education

There are many assessment instruments that have been designed with SWDs in mind. Instruments that are most commonly used in school-based APE are: Test of Gross Motor Development-2 (TGMD-2) (Ulrich, 2000), Brockport Physical Fitness Test-2 (BPFT-2) (Winnick & Short, 2014), Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2) (Bruininks & Bruininks, 2005), Peabody Developmental Motor Scales-2 (PDMS-2) (Folio & Fewell, 2000), and Adapted Physical Education Assessment Scales-2 (APEAS-2) (SHAPE, 2007). Each instrument is designed for select ages and disabilities

and measures specific skills related to motor performance and fitness. These instruments are considered to be reliable and valid, which is why they are often used in APE[1]. Not only are they used in APE, but most of these assessment instruments have been used in numerous research studies. For example, the TGMD-2 was used on Filipino children with intellectual disabilities to determine its reliability and validity (Capio, Eugia, & Simons, 2015). The BPFT-2 was used to measure physical fitness levels in children with intellectual and developmental disabilities (Collins & Staples, 2017). The BOT-2 was analyzed in a study that focused on students with intellectual disabilities (Wuang, Lin, & Su, 2009). Lastly, the PDMS-2 was used on low birth weight preterm infants to determine its reliability and validity (Tavasoli, Azimi, & Montazari, 2014).

The Motor Team

Along with the APE teacher, other educational personnel, such as occupational and physical therapists, may also contribute to the IEP process. These professionals work together as a motor team to seek the most appropriate instruction for SWDs. Assessment instruments, such as the BOT-2 and the PMDS-2, are designed for related and direct service personnel to use together. Their responsibilities are to administer assessment instruments and share results with the entire motor team and the IEP team (Roth, Zittel, Pyfer, & Auxter, 2017). In some instruments, there are sections specific to fine motor skills that the occupational therapist may assess. Generally, APE and physical therapists utilize the gross motor sections of assessment tools. Once the student is assessed by members of the motor team, results are analyzed and the IEP is developed with input from all members, including parents. Members of the motor team then take

[1] Note: The APEAS-2 is currently under revision by SHAPE America and is not considered valid or reliable at this time to use for eligibility decisions in APE.

responsibility to implement the goals, as well as maintain constant communication with each other. The motor team is a crucial aspect of a child's motor development. Together, the motor team can evaluate students, discuss areas of improvement, and decide what goals can be part of the IEP.

Need for the Project

Assessment refers to any "planned technique used to measure, judge, or diagnose a student's achievement and to make inferences based on that evidence for a variety of purposes, including planning" (Doolittle, 1996). Assessment in any classroom or content area provides a detailed summary of a student's strengths and weaknesses. For adapted physical education, assessment is a required process and is an important component of measuring students' strengths and weaknesses in relation to motor development and fitness skills.

However, some assessment tools are not being used by APE teachers. Often times, teachers choose not to assess their students because there is a lack of assessment tools specific for SWDs, or they lack the knowledge related to assessment in APE (Kowalski & Lieberman, 2011). If SWDs are not referred or assessed, they will not receive the proper placement and instruction they need to be successful in physical education. There is a need for assessment in APE because it allows physical educators to partake in the IEP process, create goals for students, document progress, and instruct to meet the student's individual needs.

Not only is assessment information beneficial to physical educators and students, but parents and other professionals as well. Assessment of student learning is one way to

gain the support of administrators, parents, and colleagues (Nye, Dubay, Gilbert, & Wajciechowski, 2009). Physical educators are not the only people involved in the IEP process. Using effective assessment tools and sharing student information with the motor team (occupational and physical therapists), parents, and other administrators on the IEP team is beneficial when determining the LRE, as well as creating and implementing goals and instructional decisions. This project provides detailed information about the IEP team in relation to the IEP process, and commonly used assessment tools used in APE.

Purpose of the Project

The purpose of this project was to develop an instructional video about assessment instruments that are commonly used in APE. It describes the IEP process, and how assessment is part of this IEP process for SWD. Specifically, eligibility, placement, and instructional decisions as part of the IEP process will be discussed in detail.

The video includes a summary of five of the most commonly used APE assessment instruments including: the TGMD-2, BPFT-2, BOT-2, PDMS-2, and the APEAS-2. The summaries cover information on each assessment instrument including the skills measured, populations designed for, norms, validity and reliability, program materials, and uses in APE. The instructional video is intended for general and adapted physical education teachers, parents, special educators, administrators, related service personnel including occupational therapists and physical therapists, undergraduate and graduate students in general physical education and APE, and others who want to learn more about the IEP process and common assessment instruments used in APE.

Assessment in APE is an important component of determining the LRE for SWDs. For physical educators to decide the LRE for students, they must use their professional judgement and formally assess using a valid and reliable assessment tool. Teachers must choose an assessment that is most appropriate for the student, and be able to administer and interpret it properly. The assessment used should also allow for variations in performance and be able to measure a student's performance over a certain amount of time (Mushkin, et al., 2017). As the teacher collects data and results are summarized, they need to determine where the student stands in relation to motor performance.

Definition of Terms

To best clarify content in this project, the following terms have been used.

Adapted Physical Education (APE): Programs designed to develop physical and motor fitness; fundamental movement patterns; and skills in aquatics, dance, and individual and group games and sports so that the individual with a disability can ultimately participate in community-based physical activity programs to enjoy an enhanced quality of life. These diversified programs generally have the same goals and objectives as general physical education, but are modified when necessary to meet the unique needs of each individual (Kelly, 2006).

Assessment: A wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students (Abbot, 2014).

Criterion-referenced Test: Less standardized tests and involve evaluating performance against an established set of criteria (Horvat, et al., 2019)

Individuals with Disabilities Education Improvement Act (IDEA 2004): A law that makes available a free appropriate public education to eligible children with disabilities throughout the U.S. and ensures special education and related services to those children (U.S. Department of Education, 2006).

Individualized Education Program (IEP): A written statement for a child with a disability that is developed, reviewed, and revised in a meeting that must include: (1) a statement of the child's present levels of academic achievement and functional performance, (2) a statement of measurable annual goals including academic and functional goals, (3) a description of how the child's progress toward meeting the annual goals will be measured, (4) a statement of the special education and related services and supplementary aids and services to be provided to the child, and a statement of the program modifications or supports, (5) an explanation of the extent to which the child will not participate with nondisabled children in the regular class, (6) a statement of any individual appropriate accommodations that are necessary to measure the academic achievement and functional performance of the child, and (7) the projected date for the beginning of the services and modifications, and the anticipated frequency, location, and duration of those services and modifications (U.S. Department of Education, 2006).

Norm-referenced Test: Standardized tests designed to collect performance data that are then compared with reference standards based on normative data provided with the instrument (Horvat, et al., 2019).

Physical Education: According to IDEA 2004, physical education is the development of physical and motor skills, fundamental motor skills and patterns, and skills in aquatics, dance, and individual and group games and sports, including intramural and lifetime sports and includes special physical education, adapted physical education, movement education, and motor development (U.S. Department of Education, 2006).

Standardized Instrument: Tests that specifically describe procedures for administration including, set of conditions, equipment, and instructions (standardized instrumentation) to which data collection must conform in order for the data to be considered valid (Kelly, 2006).

Special Education: Specially designed instruction, at no cost to the parents, to meet the unique needs of a child with a disability, including instruction conducted in the classroom, in the home, in hospitals and institutions, and in other settings; and instruction in physical education (U.S. Department of Education, 2006).

Special Education Process: The multi-step process comprised of seven steps: pre-referral, referral, identification, eligibility, development of the IEP, implementation of the IEP, and evaluation and reviews (Smith, 2007).

Summary

Assessment in APE is an important component of the IEP process. Assessment assists with determining eligibility, the LRE, and instructional decisions for SWDs. Commonly used assessment instruments are ones that are valid, reliable, and can be aligned with specific content in physical education. Standardized assessment tools such as the TGMD-2, BPFT-2, BOT-2, PDMS-2, and APEAS-2 are often used in APE.

The purpose of this project was to provide valuable information to adapted and general physical education teachers, special education teachers, administrators, occupational and physical therapists, and parents about the importance of assessment in APE. The video was designed to summarize common assessment tools used in APE so test administrators can understand, administer, and evaluate them.

Selected assessment instruments and research were reviewed to gain a full understanding of the importance of assessment in APE. The following chapter critiques specific assessment instruments that are commonly used in APE. Information on each assessment tool will include skills measured, populations designed for, norms, reliability and validity, program materials, and the uses in APE.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In physical education, assessing students on motor performance is an effective way for teachers to know if they are developing the necessary motor skills needed for a lifetime. In adapted physical education (APE), standardized assessment tools are often used to measure strengths and needs of students, as well as determining if a student is eligible for APE services as part of special education. According to the Individuals with Disabilities Education Improvement Act (IDEA 2004), children aged 3-21 have the right to a free appropriate public education (U.S. Department of Education, 2006). Within IDEA 2004 under Subsection 16, children with disabilities are included in all assessments with individual accommodations as needed. Therefore, utilizing standardized assessments in APE is critical for the motor development of a student with a disability (SWD).

This literature review will include sample research studies that have used each assessment instrument. It will also present critiques of standardized assessment tools most commonly used in APE such as the Test of Gross Motor Development-2 (TGMD-2) (Ulrich, 2000), the Brockport Physical Fitness Test (BFPT-2) (Winnick & Short, 2014), the Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2) (Bruininks & Bruininks, 2005), Peabody Development Motor Scales-2 (PDMS-2) (Folio & Fewell, 2000), and the Adapted Physical Education Assessment Scales-2 (APEAS-2) (SHAPE, 2007). These assessment tool summaries will focus on the skills measured, intended populations, norms, validity and reliability, materials needed for each assessment tool, and uses in APE.

Assessment Tools Used in Research

The popularity of common standardized assessment instruments used in APE such as the TGMD-2, BPFT-2, BOT-2, PDMS-2, and the APEAS-2 has been demonstrated by their use in many scientific research studies. The TGMD-2 has been determined reliable and valid through research studies for South Korean children (Kim, Kim, Valentini, & Clark, 2014) and for Filipino children with intellectual disabilities (Capio et al., 2015). Another study was done to examine the inter and intrarater reliabilities of the TGMD-3 (Maeng, Pitchford, Webster, & Ulrich, 2017).

The BPFT-2 was used to measure physical fitness in students with intellectual and developmental disabilities (Collins & Staples, 2017). Another study focused on promoting physical fitness for elementary students with intellectual disabilities using test items from the BPFT-2 (Davis, Zhang, & Hodson, 2011). The BOT-2 has also been used in several research studies. An analysis was done of the BOT-2 for students with intellectual disabilities (Wuang et al., 2009). The validity and reliability of the short-form in the BOT-2 have been studied in the United Arab Emirates culture (Hassan, 2001). Another study was done about the validity of the short form used at the preschool level (Venetsanou, Kambas, Aggeloussis, Fatouros, & Taxildaris, 2009).

The PDMS-2 was used in research to determine if the fine motor scales were reliable and valid for children with and without fine motor problems (Hartingsveldt, Cup, & Oostendorp, 2005). A cross-sectional study using the PDMS-2 was done with Portuguese preschool children (Saraiva, Rodrigues, Cordovil, Barreiros, 2013). Another study was conducted to determine the reliability and validity of the PDMS-2 regarding low birth weight preterm infants and their motor development (Tavasoli et al., 2014).

Lastly, the APEAS-2 was used in a study conducted for physical education teachers instructing blind students was used to determine a variety of information including: teacher characteristics, teaching practices, student populations, and facilities. According to the article, the APEAS-2 was administered 7 times across the elementary and secondary level as a means of assessing students. The most common type of assessment that was used was teacher-made assessments or checklists (Haegele & Lieberman, 2016).

Commonly Used Assessment Instruments in PK-12 Adapted Physical Education

Test of Gross Motor Development-2 (TGMD-2) [2]

The Test of Gross Motor Development-2 (TGMD-2) is a very often used assessment instrument to measure a student's gross motor development (Ulrich, 2000). The TGMD-2 measures locomotor and object control skills that are seen throughout childhood motor development (Ulrich, 2000). Twelve skills are assessed on the TGMD-2: run, gallop, hop, leap, horizontal jump, slide, striking a stationary ball, stationary dribble, catch, kick, overhand throw, and underhand roll. This instrument can be used in many ways. According to the TGMD-2 Examiner's Manual, the primary uses are for identification and screening for special education services, instructional programming, assessment of a student's progress, program evaluations, and as a research tool for the motor development of children (Ulrich, 2000).

The TGMD-2 is designed for boys and girls, ages 3-10 years. Not only can it be used with typically developing children, but it is often used for SWD to determine their

[2] Note: At this time, the TGMD is being revised and will be published soon as the TGMD-3.

present level of performance on gross motor skills. When utilizing this assessment tool on SWDs, it is important to consider that there may be modifications implemented to meet their individual needs. When modifying or adapting skills on any assessment, it is important to note that results may be altered and cannot be used for eligibility decisions based on the established standardized procedures related to the norms.

According to the Examiner's Manual, norms for the TGMD-2 were established by sampling 1,208 individuals within 10 states. The testing was completed in the Fall of 1997, Spring of 1998, and Fall of 1998. The geographical regions that were selected were based on three methods. First, physical educators who participated in previous norming procedures were contacted. Second, the PRO-ED research department determined who had purchased the first edition of the TGMD. Lastly, they established major sites within specific places, which resulted in the four geographical regions for the normative sample of 1,208 participants (Ulrich, 2000).

Based on information provided in the Examiner's Manual, the TGMD-2 is norm-referenced and criterion-referenced. The test is criterion-referenced because the procedure is for the child to demonstrate specific performance criteria within each subtest of the locomotor and object control skills. When assessing the student, the test administrator determines if all of the performance criteria are present and provides a score of 1 or 0 based on the performance. The TGMD-2 is also norm-referenced because results of an individual's assessment are compared with standards of results of children the same age within the normative data. Comparing results to other children provides the instructor with information on whether or not the child is developing gross motor skills at a level where they should be in regards to their age (Ulrich, 2000).

Test reliability can be defined as the degree to which results are consistent over a certain amount of time. The task must be done under the same circumstances, and similar scores must be obtained for the instrument to be considered reliable (Joppe, 2000). Based on the TGMD-2 Examiner's Manual, there were three used to determine reliability for the TGMD-2. To consider the TGMD-2 as reliable, the coefficient must be at a minimum of .70. The first source of error variance is called content sampling where the researchers used Cronbach's coefficient alpha. All scores within the normative sample were used to analyze the reliability. Based on the results of the TGMD-2, only one subtest fell within the minimum (.76), which indicates that the test is reliable. The next source of error variance that was used was time sampling. This refers to the test-retest method where a student is tested multiple times and the results of their performance are consistent. This method was tested twice on 75 children, with a 2-week break in between tests. The results of the time sampling source were considered to be reliable due to its magnitude within both tests. The last procedure used is called interscorer differences, which refers to the amount of error in the scores. The TGMD-2 used a method where two people from PRO-ED independently scored sets of 30 random protocols and then compared their results. Based on the results, researchers determined that the TGMD-2 is a reliable assessment tool (Ulrich, 2000).

Along with reliability, the assessment must also be valid. Validity can be defined as whether or not the test measures what it is supposed to measure (Joppe, 2000). To determine the validity of the TGMD-2, researchers used three different procedures. According to the Examiner's Manual, the three procedures were content-description validity, criterion-prediction validity, and construct-identification validity. Content-

description validity, within the TGMD-2, refers to the reasoning of why the items were chosen. The selection of formats and items were determined by three experts who confirmed that skills represented in the TGMD were accurate measures of gross motor development in children. The items selected for testing were considered sufficient in regards to item discrimination and item difficulty criteria, which indicated the validity of the TGMD-2. The next procedure that was used is called criterion-prediction validity, in which two tests are compared to measure similarity between results. The TGMD-2 was compared to the Basic Motor Generalizations subtest of the *Comprehensive Scaled of Student Abilities* (CSSA) (Hammill & Hresko, 1994) and it was determined that there was a strong correlation between the two tests, which supports the validity of the TGMD-2.

Lastly, construct-identification validity was determined for the TGMD-2, and five concepts are said to underlie the assessment instrument. The five constructs are: age differentiation, group differentiation, item validity, subtest correlations, and factor analysis. The first one describes how the TGMD-2 should strongly correlate to chronological age. The second one discusses how the results of gross motor ability should be grouped: on average, below average, or above average. The third is about item validity, where the items of each subtest should compare to the total score of their subtest. The fourth discusses the subtest correlations and how they should relate. The fifth construct is about factor analysis (Ulrich, 2000).

When assessing students with the TGMD-2, there is a variety of equipment needed. According to the Examiner's Manual, the equipment used includes: an 8-10-inch playground ball, 4-inch lightweight ball, basketball, tennis ball, soccer ball, softball, 4-5-inch beanbag, tape, 2 traffic cones, plastic bat, and a batting tee (Ulrich, 2000). Although

these are often used for the assessment, adaptations may be used for students with disabilities.

For example, if an APE teacher were to assess a student with a visual impairment, equipment that is auditory may be more appropriate for that student to be successful with the task. If a student who uses a wheelchair was assessed, adaptations would be made, or alternate assessment instruments would be used. APE teachers should know their student's abilities and what assessment tools are most appropriate for them.

The TGMD-2 is considered to be a valid and reliable assessment instrument that is used to measure a child's gross motor development. It can be used in physical education for a variety of assessment purposes including eligibility, placement decisions for special education services, and instructional decisions. Results of the TGMD-2 are calculated into a Gross Motor Quotient (GMQ), which is the sum of both subtests (locomotor and object control). The GMQ represents a student's overall motor skill performance, which can help determine eligibility for APE services. The TGMD-2 is an effective way to decide if a student is eligible for APE services because it focuses on all the fundamental motor skills that are used in most elementary physical education programs. For placement decisions, the teacher can use the results of the TGMD-2 to make appropriate recommendations about whether or not the student should be placed in general PE or APE. Lastly, the teacher can base their instructional decisions on the student's needs, as identified by the TGMD-2. Teachers can design creative and effective ways to incorporate specific skills within the lesson that the student needs to work on, which allows them to informally assess in a more authentic way.

Brockport Physical Fitness Test-2 (BPFT-2)

Another common assessment instrument frequently used in APE is the Brockport Physical Fitness Test-2 (BPFT-2). This instrument is primarily used to measure a student's health-related physical fitness levels. Physical fitness can be described as characteristics that a person has or attains that relate to performing some type of physical activity (Caspersen, Powell, & Christenson, 1985). Physical fitness is broken into five components within the BPFT-2. These components are: aerobic functioning, muscular strength, muscular endurance, flexibility, and body composition. The BPFT-2 focuses on developing and improving those health components utilizing the 27 test items that are provided within the test. Although there are 27 test items, only 4 to 6 items are typically used to assess each individual. This allows the test administrator to personalize the test to specific students. Some BPFT-2 test items are purposely similar to the FITNESSGRAM/ACTIVITYGRAM (Cooper Institute, 2017) assessment, but are primarily designed for SWD (Winnick & Short, 2014). According to the BPFT-2 Training Guide, the assessment instrument was designed because it was believed that SWD have the same health concerns related to lack of physical activity as their typically developing peers (Winnick & Short, 1999).

The BPFT-2 is designed to assess males and females, with or without a disability, between the ages of 10-17 years. The test is inclusive to assess students with a variety of unique attributes such as intellectual disabilities, visual impairments, spinal cord injuries, cerebral palsy, congenital anomaly, and amputation. Although the test is inclusive to a variety of individuals, there are different adaptations that may need to be used for specific students. A student who is a wheelchair user will need modifications or an alternative assessment to measure aerobic functioning. For a student with a visual impairment,

adaptations such as noise making equipment or physical brailing would be appropriate (Winnick & Short, 2014).

The norms for the BPFT-2 were created through "Project Target", a research study conducted at the College of Brockport, State University of New York. The study was designed to develop a physical fitness test for SWDs between the ages of 10-17 years. The study also aimed to create an educational component to the test, so that physical fitness levels were improved. The norming sample group was 1,542 children with and without disabilities and test items were selected based on youth health concerns. The test items were carefully considered dependent on validity and reliability (Winnick & Short, 2014).

The BPFT-2 is a criterion-referenced test because each test item has specific criteria believed to be a representation of healthy fitness zones. When determining a student's present fitness level, test scores are compared to specific standards and fitness zones. The fitness zones are: healthy fitness zone (HFZ), adapted fitness zone (AFZ), and needs improvement (NI). If a student falls within the healthy fitness zone, their health level is considered to be appropriate, whereas if they fall within the needs improvement zone, they need to improve on the component that is being measured. The adapted fitness zone represents a minimal acceptable level that is achieved by a SWD. Each of the 27 test items vary in their standards and what levels determine a healthy fitness zone based on gender and age (Winnick & Short, 2014).

Based on the conceptual framework for the BPFT-2, the test-retest method was used to determine its reliability. The researchers determined the intraclass R, Cronbach's alpha, and proportion of agreement (p) on each test item for two different administrations

of the test. Coefficients greater than .70 were considered acceptable when measuring the test's reliability. In sum, the test items in the BPFT-2 are considered a reliable measure of health-related physical fitness levels (Winnick & Short, 2005).

To determine the BPFT-2 validity, researchers used three different procedures on the test items chosen for the assessment. The three types of validity are concurrent, construct, and logical. Concurrent validity in the BPFT-2 can be identified when there is a correlation between test items and what the test items are supposed to measure. For example, the correlation between the PACER test and VO2 max is a valid measure of that fitness component. Construct validity within the BPFT is claimed to be when test items represent a construct, which classifies as one of the five health-related fitness components. An example of this would be test items such as skinfolds, bioelectrical impedance analysis, and body mass index represent the subtest body composition. Lastly, logical validity in the BPFT can be either anatomical or functional. In this case, the test item measures some "aspect of fitness with health-related implications" (Winnick & Short, 2005).

A valuable resource in the BPFT-2 kit is the Brockport Physical Fitness Training Guide. In this training guide, there is detailed information about developing health-related physical fitness programs for SWDs. Furthermore, it reviews the five health-related physical fitness components and has guidelines for teachers to follow for them to help improve physical fitness in their students. The training guide thoroughly covers the different disabilities and specific components of the test (Winnick & Short, 1999).

As students enter the middle and secondary levels, lifetime fitness becomes the primary goal in physical education. The BPFT-2 allows teachers to measure a student's

fitness level and develop goals that could potentially be placed on their IEP. For eligibility purposes, if a student did not meet the requirements to fall within the healthy fitness zone of a certain number of components, they could be eligible for APE, depending on a school district's policies. Placement decisions could also be made based on the scores for each item tested. Lastly, instructional decisions closely relate to the BPFT-2 because the kit provides the training guide and manual to follow. Within these, there are specific instructional decisions for each test item in relation to the various disabilities. Based on assessment results, the instructor can determine a student's present level of performance for each test item, and contribute to the IEP process. As mentioned before, the instructor can create long-term or annual IEP goals and short-term objectives to further enhance a student's physical fitness abilities and promote lifetime fitness.

Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2)

The Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2) is another common assessment instrument used in school-based APE programs. This instrument measures fine manual control, manual coordination, body coordination, and strength, and agility. The BOT-2 is comprised of eight subtests: fine motor precision, fine motor integration, manual dexterity, bilateral coordination, balance, running speed and agility, upper-limb coordination, and strength. Although there are test items that measure fine motor skills, APE teachers generally do not assess these components. Therefore, this assessment instrument is often used by the "Motor Team" with members such as the APE teacher, occupational therapist, and physical therapist. The test items that the physical educator generally measures are: bilateral coordination, balance, running speed and agility, upper-limb coordination, and strength. According to the BOT-2 Manual, the

purpose of the instrument is for diagnoses, screening, placement decisions, and developing and evaluating motor training programs. These motor training programs often take the form of APE instruction as part of special education. The assessment includes a complete form and short form that persons can choose depending on how much depth is needed in the evaluation of motor skills (Bruininks & Bruininks, 2005).

The BOT-2 is designed for males and females between the ages of 4-21 years. It is used for typically developing children and is also inclusive for those who have a disability (Bruininks & Bruininks, 2005). Although it is a valid and reliable tool to use in APE, some items on the test may be cognitively and/or physically challenging for certain students. For example, wheelchair users would not be able to perform skills within the running speed and agility subtest. Adaptations or alternate assessment instruments may be used to appropriately measure these skills, but results of the test may be altered. Another consideration when using the BOT-2 is a student with an intellectual disability. Thorough directions and visual demonstrations for each subtest would be beneficial for this student and any student that needs further accommodations.

The normative sample for the BOT-2 was assessed within a 7-month period from November 2004 to May 2005. The sample included 1,520 people aged 4-21 years at 239 sites within 38 states. The normative sample was separated into 12 age groups and children aged 4-12 years were sampled independently, whereas children 13-14, 15-16, and 17-21 years were combined for the sample. Gender, race/ethnicity, and socioeconomic status were randomized for the norming sample. When conducting the assessment, educational services and disability classifications were considered. With regards to the normative sample, 1.4% of the population had an intellectual disability,

3.8% had a speech/language impairment, and 1.1% had other impairments including hearing, orthopedic, and visual impairments, as well as autism and traumatic brain injury. The study included three clinical samples which were developmental coordination disorder (DCD), high-functioning autism/Asperger's disorder, and mild to moderate intellectual disabilities. These conditions were chosen because there are significant motor deficits within each. According to the BOT-2 Manual, 169 of the participants in the norming sample received special education services across all ages (Bruininks & Bruininks, 2005).

The BOT-2 is a norm-referenced assessment tool. It is norm-referenced because results from each subtest are compared to specific standards such as age-equivalents, percentiles, standard scores, and scale scores. To determine a score for the BOT-2, a total motor composite is calculated. This determines the sum of all scores from each subtest, which can then be used to measure if the student is well below average, below average, average, above average, or well above average (Bruininks & Bruininks, 2005).

To determine the reliability of the BOT-2, the authors used three different measures: internal consistency, test-retest method, and interrater reliability. Internal consistency reliability within the BOT-2 refers to the consistency of the scores across all ages in each subtest. The creators separated each subtest into two parts depending on the content and difficulty. Once they were split in half, the correlation between the total points of both halves were calculated. The score was then adjusted using the Spearman-Brown formula and the internal consistency of the test was shown. The second type of reliability used is called the test-retest method. The test was administered to 134 participants twice within a range of 7-42 days. For each of the two tests, the participants

were tested by the same administrator to ensure that it was valid. The last measure of reliability was interrater reliability. For the BOT-2, 47 participants were rated by two different examiners in one test administration. One examiner administered the test, while the other observed. They each independently scored the participant's performance and then compared their results. The correlation between the scores was high (.84-.99), proving that the BOT-2 is a reliable assessment tool (Bruininks & Bruininks, 2005).

Validity of the BOT-2 was determined by using four procedures: test content, internal structure, clinical group differences, and relationships with other test of motor skills. Test validity refers to whether the test measures what it is intended to measure. A survey was sent out which asked professionals if the items within the first edition of the instrument (BOTMP) were useful. According to the results, 9 items were rated poor by 20% of the respondents, and 8 of the 9 items were eliminated from the second edition (BOT-2). The authors then created 22 new test items which were put through three stages: pilot, national tryout, and standardization.

The second type of validity used was called internal structure. Three age groups were assessed within four composites: fine motor control, manual coordination, body coordination, and strength and agility. In conclusion, for all three age groups, the comparative fit index (CFI) values exceeded a .95, proving the test is valid. Clinical group was another technique that measured the validity of the BOT-2. Researchers focused on participants who had developmental coordination disorder, intellectual disability, and autism/Asperger's disorder. Overall, the BOT-2 can be used to determine motor performance deficits within students who have these types of disabilities. The last measure of validity was the relationship with other measures. The BOT-2 was tested and

compared to the original version (BOTMP), the Peabody Developmental Motor Scales-2 (PDMS-2), and the Test of Visual-Motor-Skills-Revised (TVMS-R). Based on the comparison, the BOT-2 is considered a valid tool for measuring motor performance (Bruininks & Bruininks, 2005).

There are some factors to consider when administering the BOT-2 such as time, space, equipment, task complexity, and effective demonstrations. It is important that there is enough time given to assess the participant, as well as making sure there is enough space for them to perform the task. For example, the shuttle run requires 50 feet of running space, in which the space that is being utilized must exceed 50 feet. Another consideration is the equipment needed for each test. Some of the tests require a tennis ball, balance beam, stopwatch, a target, and something to measure the distances. The BOT-2 kit provides the test administrator with some of the required equipment like the tennis ball, balance beam, and target. Lastly, demonstrating many tasks to the participant is essential for them to comprehend and perform the tasks (Bruininks & Bruininks, 2005).

Based on results from evaluation with the BOT-2, the physical educator can contribute to the IEP process. If the student's scores fall outside the pre-established age equivalents, percentiles, standard scores, or scale scores, they may be eligible for APE based on a school districts' criteria. Utilizing the short form can help with general screening of a student, and the complete form can summarize their overall motor performance. The short form is comprised of only 14 test items selected from the eight subtest categories. These 14 test items were selected because they range in motor ability and can provide the administrator reliable results for a student's overall motor proficiency in a short period of time. The short form is only used for screening purposes, whereas the

complete form can be used for eligibility, placement, and instructional decisions. Based on the student's present level of performance and scores, the physical educator can decide which physical education setting is least restrictive. The APE teacher can then make instructional decisions that are appropriate to the student's goals and can help the student succeed to their best ability (Bruininks & Bruininks, 2005).

Peabody Developmental Motor Scales-2 (PDMS-2)[3]

The PDMS-2 is a commonly used assessment instrument in preschool and elementary APE. It is often used by the Motor Team to assess fine and gross motor skills. Subtests in the PDMS-2 are reflexes, stationary, locomotion, object manipulation, grasping, and visual-motor integration. Although the test measures fine motor skills like the BOT-2, APE teachers do not assess these areas. Instead, the physical and/or occupational therapist generally assesses fine motor skills.

There are 249 test items within 6 subtests. The results of the subtests are used to determine composites which are categorized as: Gross Motor Quotient, Fine Motor Quotient, and Total Motor Quotient. The Gross Motor Quotient combines the results of all subtests that measure the use of large muscles. The Fine Motor Quotient combines the subtests that measure the use of small muscles. The combination of both Gross and Fine Motor Quotients is called the Total Motor Quotient. These composites are important when gathering and analyzing results (Folio & Fewell, 2000).

The PDMS-2 is designed for boys and girls, ages birth to 6 years (0-72 months). Although the test measures between these ages, test items and subtests are specific to

[3] Note: At this time, the PDMS is being revised and will be published soon.

certain ages. For example, object manipulation subtests are only given to children who are 12 months and older. The test can be used with students with or without disabilities. However, some subtests may be difficult for students who have visual impairments or are wheelchair users (Folio & Fewell, 2000).

The norms for the PDMS-2 were developed for a sample of 2,003 children within 46 states, plus a Canadian province, during the winter of 1997 and the Spring of 1998. The selection of the participants was decided two different ways. First, PRO-ED looked in their system to see who had purchased the original version of the assessment tool (PDMS), and those people were contacted. Second, mailing lists were accessed for occupational therapists and physical therapists within each region and they were contacted to participate in the norming process. The participants who responded were asked to test about 20-30 children, in which the sample resulted in an even number of boys and girls. Based on the normative sample, 90% of the participants did not have a disability, resulting in only 10% that fell into some category of a disability (Folio & Fewell, 2000).

The PDMS-2 test is both norm-referenced and criterion-referenced. It is norm-referenced because the participant's results from each subtest are compared to children of the same age and gender within the norming sample. It is also criterion-referenced because each skill in the subtests has specific criteria. The criteria are aligned with a number that is ultimately used for the score procedures. A score of "0" indicates the child did not demonstrate the criteria of the skill, whereas a "1" means the child showed some components of the skill. A score of "2" indicates the child demonstrated proficiency. Within the Guide to Item Administration Manual, all subtests and test items

are listed, and it provides a detailed procedure and criteria section so the test administrator knows what to look for and how to score the child (Folio & Fewell, 2000).

Three types of reliability were determined for the PDMS-2: content sampling, time sampling, and interscorer reliability. Cronbach's alpha was used in content sampling and results determined that 90% of the coefficient alphas reached acceptable reliability (.80) within the six age groups. The test-retest method was used for time sampling reliability in which two groups were tested. The first group tested children ages 2-11 months old and the second group tested children 12-17 months old. After the data were collected, the results were compared, and it was determined that the values were of sufficient magnitude (.73-.96), proving that the PDMS-2 is a reliable assessment tool. To measure interscorer reliability, two staff from PRO-ED independently scored 3 and 11-month old's and 15-36-month old's using a total of 60 random protocols. The PDMS-2 can be considered reliable because the lowest coefficient within the interscorer differences was .96 (Folio & Fewell, 2000).

Three types of validity were established for the PDMS-2. The first was content-description validity, which was tested by determining how and why test items were chosen. The authors used research to determine which subtests would be appropriate for the PDMS-2 at certain age levels and it was concluded that reflexes, stationary, locomotion, object manipulation, grasping, and visual-motor integration were the most appropriate. The second type of validity was criterion-prediction validity and two tests were done based on the normative sample. The first test was when researchers took the scores from the PDMS-2 and correlated them to the first edition of the assessment (PDMS). Based on the results, there was a high correlation between both tests. The

second test was comparing scores of the PDMS-2 to scores of the Mullen Scales of Early Learning (Mullen, 1995), which resulted in a coefficient that was above .80. Construct-identification was the last type of validity used and based on confirmatory factor analyses, differentiation, and item validity, the PDMS-2 is a valid tool that measures both gross and fine motor skills (Folio & Fewell, 2000).

Along with the Examiner's Manual, the PDMS-2 kit comes with a "Guide to Item Administration" and a "Motor Activities Program". Within the "Motor Activities Program", there are two sections that show the test administrator how to use the program and provides a section for instructional units and practical teaching activities. Section one discusses the design and implementation of effective motor intervention programs, an introduction to the instructional units and subtests, illustrations of uses of the motor activities program, and adaptations for special learning and motor needs. Section two provides an overview of units and activities within all subtests of the PDMS-2. Described within each subtest are objectives, reasons for teaching the skill, related skills in natural environments, critical elements used, and instructional strategies that are helpful when administering the test.

The PDMS-2 is a common assessment tool that is used to determine eligibility, placement, and instructional decisions at the preschool and elementary levels for APE. The APE teacher can collect the student's score and compare it to age equivalents and standards to determine eligibility based on a school district's criteria. Assessment results of the PDMS-2 can also be used as part of least restrictive environment or placement decisions for the student. If the student performs well below the norms, it may be appropriate to place them in APE, whereas if they score average or above average, the

most appropriate placement may be general physical education. Instructional decisions such as skill focus, teaching strategies, adaptations, and equipment can be directed towards the needs of the student in order for them to be successful in physical education (Folio & Fewell, 2000).

Adapted Physical Education Assessment Scales-2 (APEAS-2)[4]

The Adapted Physical Education Assessment Scales-2 (APEAS-2) is an assessment instrument frequently used by APE teachers. This instrument was designed to measure four areas of motor performance, as well as adaptive behaviors related to physical education participation. The four motor areas assessed are: perceptual motor function, object control, locomotor skills, and physical fitness. According to the APEAS-2 Test Manual, adaptive behaviors refer to a student's behavior that may diminish their ability to safely and successfully participate in GPE (SHAPE, 2007). The APEAS-2 is designed specifically for SWDs and the APE teacher can use results to determine eligibility, placement, and instructional decisions (SHAPE, 2007).

The APEAS-2 is designed for boys and girls between the ages of 4.6-17 years in the elementary and secondary levels. There are 23 test items in the elementary level and 20 items in the secondary level. Although the APEAS-2 is primarily designed for SWDs, some students may have trouble with certain test items. For example, test item number 1 "ocular control" in the elementary level would be challenging for a student who is visually impaired or blind. This item requires the student to follow a moving object with their eyes, therefore, an alternate test items would be most appropriate for this student.

[4] Note: The APEAS-2 is currently under revision by SHAPE America and is not considered valid or reliable at this time to use for eligibility decisions in APE.

Another test item that a student may have trouble performing would be item 14 listed under the secondary level. This item is "agility run", which a child in a wheelchair would not be able to perform (SHAPE, 2007).

To develop the norms of the APEAS-2, the Los Angeles Unified School District administered the APEAS-2 to students aged 5-18 years in the Spring of 2005. A total of 2,295 students from the elementary and secondary levels were used as the norming sample. Of the 2,295, only 63 students were identified as having a disability (SHAPE, 2007).

The APEAS-2 is both norm-referenced and criterion-referenced. It is norm-referenced because the results for each student are compared to standards and then converted to percentiles. Within the APEAS-2, the norms are categorized by age and gender. It is also criterion-referenced because each test item has specific criteria that the student attempts to meet when performing the task. The criteria within each test item varies depending on the skill. As for reliability of the APEAS-2, 70 itinerant APE teachers participated in an in-service training session. Each APE teacher administered the APEAS-2 to a minimum of 10 students to ensure it is reliable. Information on the validity of the APEAS-2 is not available. The APEAS-2 is currently being researched by SHAPE in order to establish validity (SHAPE, 2007).

Along with the APEAS-2 Manual, the kit provides an online scoring feature that can be useful for test administrators. This feature consists of an eScoresheet and a Performance Profile, which allows the test administrator to score and calculate a student's performance online for each test item, as well as create a student profile. The test administrator can simply enter in the raw score values for each subtest and the

eScoresheet will calculate the percentile rank, standard deviation, and standard scores. This feature is beneficial because information is saved for all test items, which allows the APE teacher to monitor student progress for reports and IEP meetings (SHAPE, 2007).

Although the APEAS-2 is currently not considered to be valid, it could be a useful tool in the future for determining APE eligibility, placement, and instructional decisions. For example, a school district could have eligibility criteria that states a student is eligible for APE services, if they score 1.5 standard deviations below the mean, or 2 years below their age level in relation to the four components of the APEAS-2. Additionally, the APEAS-2 online scoring could assist with eligibility criteria.

The APEAS-2 includes an adaptive behaviors section, which can also be used for placement and instructional decisions. This section primarily focuses on the student's behavior regardless of their motor performance. It is used to determine if the student has the ability to safely and successfully participate in general physical education. Listed in the adaptive behavior section are eight categories related to behavior, motor, medical, cognitive, and functional domains. For example, the first item, "peer interaction", has specific criteria ranging from 1-3 on the student's behavior with peers. The administrator then scores the student based on what is observed.

The APE teacher can use the student's motor abilities and/or behaviors to decide the LRE for physical education. As for instructional decisions, APE teachers can utilize different teaching styles, skill focus, equipment, and facilities to ensure the student will be successful in physical education (SHAPE, 2007).

Summary

Assessment instruments are used in APE to measure a student's present level of gross motor performance or fitness levels. The TGMD-2, BPFT-2, BOT-2, and PDMS-2 are valid and reliable assessment instruments that are appropriate to use for many SWDs. These are some of the most frequently used assessments in PK-12 APE (Horvat, et al., 2019). Although the APEAS-2 is not currently considered valid, research is being conducted through SHAPE America to alleviate problems. These assessments can be used throughout the IEP process to determine eligibility, placement, make instructional decisions, and monitor progress. Based on assessment results, APE teachers can create short-term objectives and long-term IEP goals that can help develop the skills that the student needs to reach a competent level in physical education.

CHAPTER III

CRITICAL ANALYSIS

Introduction

Utilizing assessment in adapted physical education (APE) is critical when determining a student's present level of performance. It also plays an important role

when determining eligibility, placement, and instructional decisions as part of the special education process. There are many standardized assessment instruments that can be used in APE, along with teacher-made rubrics. Some of the most common standardized instruments used in APE are the Test of Gross Motor Development-2 (TGMD-2), Brockport Physical Fitness Test-2 (BPFT-2), Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2), Peabody Developmental Motor Scales-2 (PDMS-2), and the Adapted Physical Education Assessment Scales-2 (APEAS-2).

This chapter provides specific information about considerations and suggestions when administering each of the assessment instruments, and how each can be used in APE. A detailed description of the instructional video that accompanies this project is also provided. Additional resources such as YouTube videos, textbooks, book chapters, websites, and journal articles are also summarized in this chapter. Professionals in the APE field can use these resources when choosing appropriate assessment tools and administering them to students in their classes. Lastly, recommendations are presented for future research studies related to assessment tools used in APE, as well as recommendations for additional critical analysis projects.

Special Considerations Prior to Administering Assessment Instruments

Test of Gross Motor Development-2 (TGMD-2)

There are many important considerations when administering the TGMD-2. Each skill in the object control section involves the use of specific equipment. It is vital that test administrators gather this equipment beforehand so that it is available for

administration. Each skill also has detailed instructions that the administrator must follow when setting up, providing verbal directions, and giving visual demonstrations to the student. Appendix A in the manual and under each skill on the test provides materials needed and the directions to follow. An example can be seen under "Catch" in the object control section. The materials needed for this item are a 4-inch plastic ball, tape, and 15 feet of clear space. Following that, there are specific directions that must be followed: "Mark off two lines 15 feet apart. The child stands on one line and the tosser on the other. Toss the ball underhand directly to the child with a slight arc aiming for his or her chest. Tell the child to catch the ball with both hands. Only count those tosses that are between the child's shoulders and belt. Repeat a second trial".

It is important to become familiar with the equipment and directions of each test item prior to administering the TGMD-2 to ensure the best results. Additionally, becoming familiar with all performance criteria for each skill is beneficial when scoring. If approved by parents, videotaping the full assessment is a good way to more easily and accurately score the test, review student performance, and reflect on the overall administration of the test. Reviewing the video will help with future preparation and instruction for administering the TGMD-2.

Brockport Physical Fitness Test-2 (BPFT-2)

Similar to the TGMD-2, the Brockport test also has special considerations for administration. First, administrators need to determine the student's disability in order to proceed with the test. Once a disability is determined, the administrator needs to carefully select the test items that are most appropriate for that student. For some

students with physical disabilities, it is recommended that the administrator consult with the physical therapist to determine ability levels and test items.

It is important to have appropriate facilities and equipment which are found under each test item in the manual. For example, the bench press requires a barbell or weights that weigh 35 pounds total and a bench or mat. Another piece of equipment needed for the Brockport is a skinfold caliber to measure body fat. It is important that equipment be collected for administration if the kit does not provide it.

Another consideration would be to thoroughly read the test manual prior to administration. The manual provides instructions on how to administer each test item, scoring and trials, test modifications, and its own recommendations when giving the test. For example, the recommendations seen under the bench press are: conducting practice sessions prior to the test, provide demonstrations, have students practice the skill with lower weight and progress to the full amount for the test, as well as deliver positive reinforcement throughout the task. Reading the manual prior to administering the test is important because it provides useful information about each test item. The Brockport test kit also comes with an instructional DVD that provides excellent demonstrations to properly perform all the skills. It goes through each of the 27 test items and how to administer the task with specific equipment and facilities. Lastly, it is essential to know the child that is being assessed and their abilities. Knowing this will allow test administrators to make necessary adaptations to the task or equipment to ensure student success.

Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2)

Some considerations when administering the BOT-2 are time, space, equipment, and demonstrations. There are many skills that can be assessed within the five categories that adapted physical educators administer. Therefore, having enough time to complete all test items is important. Since there are many test items, this assessment takes a long time to administer so it is recommended that it be administered in two different sessions. Additionally, preparing for enough space is also a consideration. For example, the shuttle run requires at least 50 feet of clear space in order for the students to safely complete the task.

Some test items also require specific equipment, which should be gathered prior to administering the test, if it is not already provided within the kit. A tennis ball, stopwatch, and something to measures distances with are a few items that are needed. When administrating the BOT-2, it is recommended that the easel provided is used during the test. This administration easel provides directions, pictures, trials, scoring procedures, equipment, and space needed for all test items. This is also a good tool for students to see when they are being assessed because it shows them exactly what they need to do.

Lastly, providing verbal cues and physical demonstrations of each task to the student is essential for proper administration. Depending on the student's disability and age, demonstrations will be needed because of the complexity of some of the tasks. Within the BOT-2, there are many different tasks that are not commonly seen in a physical education setting. For example, under subtest 4 "bilateral coordination", item 3 is "jumping in place-same sides synchronized". This item requires students to jump with the same arm and leg forward, while the opposite arm and leg back, and repeating that

motion. Another novel task required is item 5 "pivoting thumbs and index fingers" in "bilateral coordination". This task has the student pivot their index fingers and thumbs in a continuous motion like "The Itsy Bitsy Spider". These skills are not typically seen within physical education, but are beneficial when assessing coordination of SWD. For a more detailed explanation for each test item, refer to the YouTube videos listed on page 58.

Peabody Developmental Motor Scales-2 (PDMS-2)

There are many considerations when administering the Peabody. One of the first recommendations would be to know the child's age, disability, and ability levels. Having this knowledge of the child will to determine their "entry level". Getting familiar with the "Guide to Item Administration" provided in the test kit is crucial. Within the guide, every test item is shown with a list of ages, positions, procedures used, and criteria to follow. Since there are 249 test items on the Peabody, the guide provides easy access to information useful for the administration of the test.

Utilizing the "Motor Activities Program" that is also provided with the kit is another consideration. This program lists each test item and has specific objectives, reasons for teaching, related skills in natural environments, critical elements, and instructional strategies. Being familiar with this information prior to administration is highly recommended. Since the population of the Peabody is designed for children aged birth through six years, having a parent present may be beneficial for motivation and comfort. It is also recommended that administrators make the assessment more like a play situation, rather than a test. This encourages the younger population to perform as they would in more authentic setting, which helps administrators see their full abilities,

making it easier to score. Like other assessments, having adequate space and equipment is something to consider.

Adapted Physical Education Assessment Scales-2 (APEAS-2)[5]

Similar to the other assessment instruments, knowing the student and the equipment and space needed are aspects to consider when administering the APEAS. The administrator should carefully determine the student's age because there are two levels in the APEAS: elementary and secondary. This is important because test items are different in each level. Within the manual, there are specific guidelines for equipment, facilities, objectives, procedures, and scoring for all test items. It is recommended that the test administrator become familiar with these guidelines prior to administration.

Utilizing the online software is another consideration when administering the APEAS. The software is beneficial when scoring the student because it automatically calculates standard scores and determines percentiles and standard deviations. Using the online software will also save time and calculate scores accurately. Creating performance profiles for each student on the software is another suggestion because it will save all information for all students assessed, as well as track their progress. There are online videos for the APEAS that can help the teacher understand how to administer each test item. Watching these videos before the test is highly recommended to ensure a successful session. Lastly, becoming familiar with the adaptive behaviors section is also important when assessing the student. This way, test administrators can observe the student in a natural setting and determine what their behavior, motor abilities, medical conditions, and their cognitive and functional abilities are in that setting. Information

[5] Note: The APEAS-2 is currently under revision by SHAPE America and is not considered valid or reliable at this time to use for eligibility decisions in APE.

from the online software and adaptive behaviors section can be presented at IEP meetings and be used to develop IEP goals and objectives.

Use of Assessment in Adapted Physical Education

Assessment instruments play an important role in APE. Test results can be used to guide judgements regarding eligibility, placement, and instructional decisions. For example, if the student scores 1.5 standard deviations below the mean on norm-referenced tests, or classify as being 2 years below their chronological age on criterion-referenced tests, they may be eligible for APE services in some school districts. This is a national recommendation, but if school districts have their own eligibility criteria, that must be followed (AAPAR/NASPE, 2010). Based on assessment results, teachers can use that information to verify that the student is eligible for those services. Furthermore, placement decisions can be made based on assessment results, and teachers can determine what they believe is the least restrictive environment for each student. These placement decisions may include separate APE, inclusion in general physical education, one to one instruction, or any other instruction of setting that meet the needs of the student. Lastly, instructional decisions are everyday choices that teachers make about their planning and implementation of instruction. This can include preparation of lesson plans and tasks or equipment modifications to meet student goals. The following sections discuss each assessment tool and how they can be used in APE.

Test of Gross Motor Development-2 (TGMD-2)

The TGMD-2 can be used in many ways in APE. First, results of the assessment can be used to determine if a student with a disability is eligible for APE services. The TGMD-2 is frequently used for eligibility purposes because it focuses on gross motor skills that

are commonly used in physical education, such as locomotor and object control skills. Based on test results, adapted physical educators can determine the least restrictive environment. The TGMD-2 results can be used at IEP meetings to explain to parents and the IEP team that the placement decision for the student is most appropriate.

After the child is placed in the least restrictive environment, teachers need to create IEP goals and objectives related to the assessment. Therefore, instructional decisions can be made based on individual goals and objectives. For example, if the student's goal is focused on the overhand throw, the teacher may plan a creative activity that is effective for improving the overhand throw. They may also modify the ball that the child is throwing, or the actual task in order to meet student needs. The TGMD-2 is a valid and reliable assessment instrument that can be used in many different ways in APE. Results of the TGMD-2 are especially useful when determining eligibility, placement, and instructional decisions.

Brockport Physical Fitness Test-2 (BPFT-2)

The Brockport is another assessment instrument that can be used in APE. Since the Brockport focuses on the five health-related fitness components (cardiovascular endurance, muscular strength and endurance, flexibility, and body composition), a student may be eligible for APE services based on their performance. For example, if a student scores within the "adapted fitness zone" or "needs improvement" on more than half of the skills measured, they could be eligible for APE services in certain school districts. Based on the fitness results from the Brockport test, placement decisions can be made so that the student can safely and successfully participate in physical education. As mentioned earlier, IEP goals and objectives can be developed from the assessment and

used within the class. In addition, the teacher can make decisions about their instruction, content presented, tasks, and strategies that are appropriate to the student's goals.

The Brockport test kit provides a manual and separate training guide, which provide instructional recommendations for each test item in relation to specific disabilities. This resource is beneficial because it gives practical suggestions when working with students with varying ability levels. In summary, the Brockport test is an assessment instrument that is commonly used in APE to make eligibility, placement, and instructional decisions.

Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2)

The BOT-2 is often used by adapted physical educators to determine if the student is eligible for APE services. It is also used to decide where the child will best learn, as well as to make instructional decisions to help with student success. Adapted physical educators often use the "short form" for general screening purposes. If concerns are found by the APE teacher based on the short form results, they can choose to use the complete test to measure the student's overall motor performance. The results of the test are converted to percentiles, standard scores, scale scores, and age equivalents, which can help with determining eligibility, based on the school district's established criteria. Based on these scores, the test administrator can conclude what descriptive category the child is in: well-above average, above average, average, below average, and well-below average. Depending on what category the child is in, they could be eligible for APE services, and the teacher can make placement decisions that are appropriate for the student.

Test items on the BOT-2 can be seen similar to content presented in many physical education classes because they are closely related to the skill-related fitness components. This is helpful when making instructional decisions because these are simple tasks that can be integrated into everyday lessons, such as agility, speed, and balance. Additional decisions may be made to the equipment and task to ensure that the student will be successful in that setting.

Peabody Developmental Motor Scales-2 (PDMS-2)

The Peabody test is another assessment instrument that is commonly used in APE to determine eligibility, placement, and instructional decisions. Since the Peabody is norm and criterion-referenced, results can determine if the student is 1.5 standard deviations below the mean, or two or more years below their chronological age. Although this is often used to determine eligibility, if the school district has its own eligibility criteria for APE, that criteria must be followed. If the student is eligible for APE services, teachers can make placement decisions that are suitable to individual needs. Once a placement is determined, goals and objectives can then be established and placed on the IEP. Based on the assessment results, these goals and objectives can be related to the skills on the Peabody, depending on the student's needs. It is important that the APE teacher implement these goals within that specific placement so that the student can become competent with certain skills. Additional instructional decisions must be considered when using the Peabody to ensure student success. Teaching strategies, equipment and task modifications, and lesson plan content are things to consider when it comes to providing the most appropriate instruction to students with disabilities.

Adapted Physical Education Assessment Scales-2 (APEAS-2)

Although the APEAS is an assessment tool used to measure overall motor performance and adaptive behaviors related to physical education, it currently should not be used for eligibility decisions. This is because the APEAS is not yet considered a valid or reliable instrument. However, it still can be used to obtain a baseline of where students are in regard to specific perceptual motor, locomotor, object control, and fitness skills. Based on assessment results, teachers can make appropriate placement suggestions for physical education, as well as instructional decisions so that the student can achieve specific goals.

The assessment tools discussed above are commonly used in APE. The table on the following page summarizes general information for each assessment tool including population designed for, what it measures, time it takes to administer, criterion or norm referenced, and cost.

Description of Project Video

The instructional video for this project is entitled *Commonly Used Assessment Instruments in PK-12 Adapted Physical Education.* Within the video, assessment instruments used in APE such as the Test of Gross Motor Development-2, Brockport Physical Fitness Test-2, Bruininks-Oseretsky Test of Motor Proficiency-2, Peabody Developmental Motor Scales-2, and the Adapted Physical Education Assessment Scales-2 are summarized. Additionally, the Individuals with Disabilities Education Improvement Act (IDEA 2004) and the IEP process are discussed in regards to APE.

Table 1. Assessment Tools Used in APE [6]

[6] This table has been adapted from Mushkin, J., Williston, B., Baranowski, M., Lukshaitis, G., & Hengstman, J. (2017). *SPARK Inclusive PE: Strategies for including students with disabilities in general physical education*. San Diego, CA: The Spark Programs.

Assessment	Population Designed For	Measures	Time	Criterion or Norm Referenced	Cost & Source
Test of Gross Motor Development-2 (TGMD-2)	3-10 years	Locomotor & Object Control Skills	25+ minutes	Both	$133.00 (Entire Kit) Proedinc.com
Brockport Physical Fitness Test-2 (BPFT-2)	10-17 years	Health-Related Fitness	Varies	Criterion	$46.00 (Manual) Humankinetics.com
Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2)	4-21 years	Gross & Fine Motor Skills	60+ minutes	Norm	$933.90 (Entire Kit) Pearsonclinical.com
Peabody Developmental Motor Scales-2 (PDMS-2)	0-72 months	Gross and Fine Motor Skills	Varies	Both	$557.00 (Entire Kit) Pearsonclinical.com
Adapted Physical Education Scales-2 (APEAS-2)	4.6-17 years	Gross Motor and Fitness Skills & Adaptive Behaviors	Varies	Both	$179.00 for teachers $399.00 for Universities Apeasonline.org

In-depth depth information about the skills measured, populations designed for, norms, validity and reliability, program materials, and uses in APE are presented for each assessment instrument.

This resource is beneficial to APE teachers, general physical education teachers, parents, special educators, administrators, related service personnel including occupational therapists and physical therapists, and undergraduate and graduate students in general and APE who want to learn about common assessment instruments used in APE. The video script for this project can be found under Appendix H. The video and this document are posted on the website for the University of Wisconsin-La Crosse Center on Disability Health and Adapted Physical Activity.

Resources for Assessment in Adapted Physical Education

This section summarizes a variety of resources such as journal articles, book chapters, textbooks, websites, and YouTube videos that are related to assessment in APE.

Journal Articles

1. Lavay, B., Sakai, J., Ortiz, C., & Roth, K. (2015). Tablet technology to monitor physical education IEP goals and benchmarks. *Journal of Physical Education, Recreation, and Dance,* 86(6), 16-23.

This journal article discusses how technology can be used by teachers when assessing students in APE. Specific applications and other resources are provided for use in APE. The benefits of using tablet technology in APE are thoroughly presented, including collecting data, progress monitoring, and developing IEP goals.

2. Menear, K., Sims, S., & Phillips, J. (2007). Fitness testing of students with disabilities: Comparing and modifying fitness tests to provide quality assessment for all students. *Strategies*, 20(3), 12-21.

This article presents information about assessing fitness skills for students with disabilities. General testing procedures and specific modifications for assessment instruments such as the Brockport Physical Fitness Test-2, FITNESSGRAM, and the Presidential Challenge are discussed. The article also gives pointers about using the three assessment tools and suggestions when assessing students with varying disabilities.

3. Columna, L., Davis, T., Lieberman, L., & Lytle, R. (2010). Determining the most appropriate physical education placement for students with disabilities. *Journal of Physical Education, Recreation, and Dance,* 81(7), 30-37.

This article focuses on determining the best placement for students with disabilities in physical education. An eight-step placement process is presented which includes informal screening, referral, parental permission, schedule assessment protocol, data collection and analysis, determining eligibility, placement decisions, and evaluation. These steps are often used in APE to determine the most appropriate placement. Additionally, eight different placement options are discussed.

4. Breslin, C., & Liu, T. (2015). Do you know what I'm saying? Strategies to assess motor skills for children with autism spectrum disorder. *Journal of Physical Education, Recreation, and Dance,* 86(1), 10-15.

This article discusses how APE teachers can make assessments more suitable to meet the unique needs of students with autism. Utilizing visual supports and adapting equipment and tasks are emphasized. Guidelines and strategies are also provided for teachers to follow when assessing a child with Autism.

5. Block, M., Lieberman, L., & Connor-Kuntz, F. (1998). Authentic assessment in adapted physical education. *Journal of Physical Education, Recreation, and Dance,* 69(3), 48-55.

This article discusses the six characteristics of authentic assessment in adapted physical education. It explains how measuring a student's performance in more natural

settings is better than utilizing standardized assessments that are done in fixed settings. The creation and benefits of teacher-made rubrics are also discussed within the text.

Book Chapters

1. Roth, K., Zittel, L., Pyfer, J., & Auxter, D. (2017). Principles and methods of adapted physical education and recreation (12th ed). Burlington, MA: Jones & Bartlett Learning.

   Within this textbook, chapter three specifically talks about the purpose of assessment in adapted physical education. It goes into detail about the different types of assessment, factors to consider when selecting assessments, administration and interpretation of results, and many other important aspects of assessment in APE.

2. Hodge, S., Lieberman, L., & Murata, N. (2012). Essentials of teaching adapted physical education. Scottsdale, AZ: Holcomb Hathaway Publishers.

   Chapter six within this textbook has information about assessment in APE. Specifically, the authors discuss the types of assessment including norm and criterion-referenced, curriculum-based, authentic, intervention-based, functional, and instruments specific to APE. This chapter also discusses the selection of appropriate assessments, utilizing it in APE, how it is used in the IEP process, and how APE teachers can use assessment data to present before, during, and after the IEP meeting.

3. Block, M. (2016). A teacher's guide to adapted physical education: Including students with disabilities in sports and recreation (4th ed). Baltimore, MD: Brookes Publishing

   Within this textbook, chapter four discusses program planning and assessment in APE. It goes into detail about how and why assessment is used in APE, the six planning and assessment processes, and reasons why assessment is used to make placement decisions.

4. Dunn, J., & Leitschuh, C. (2014). Special physical education (10th ed). Dubuque, IA: Kendall Hunt.

Chapter seven in this textbook discusses assessment in APE. It talks about the need for assessing students with disabilities, the different types of assessment that can be used, and considerations when selecting assessments in APE. Furthermore, it discusses IDEA 2004 and the importance of assessment in the IEP process.

5. Winnick, J., & Porretta, D. (2017). Adapted physical education and sport (6th ed). Champaign, IL: Human Kinetics.

This APE text provides information on measurement, assessment, and program evaluation in chapter four. It goes into detail about standards for assessment including norm and criterion-referenced, along with alternative assessments that can be used. Additionally, it discusses specific test instruments that can be used for measuring different skills (fundamental motor skills, fitness, and physical activity).

Textbooks

1. Horvat, M., Kelly, L., Block, M., & Croce, R. (2019). Developmental and adapted physical activity assessment. Champaign, IL: Human Kinetics

This resource is the most comprehensive text that APE teachers can utilize because it provides all the information APE teachers would need to know when assessing students with disabilities in APE. Specifically, chapter 5 provides information about eligibility, placement, and instruction decisions and why these decisions are important in APE. Furthermore, chapters 6 and 7 discuss common assessment tools used in APE that measure motor development, motor skill performance, and fitness. Instruments such as the TGMD-2, BOT-2, PDMS-2, and BPFT-2 are mentioned, along with other standardized assessment tools.

2. Kowalski, E., & Lieberman, L. (2011). Assessment for everyone: Modifying NASPE assessments to include all elementary school children. Reston, VA: National Association for Sport and Physical Education.

This booklet provides information on how APE specialists can adapt assessment tools to meet the unique needs of every student. Seven chapters are presented which discuss the universal design for learning approach, how to assess fundamental motor skills, dance, game, fitness, and aquatic skills, as well as how to develop teacher-made rubrics in more authentic settings.

3. Farrall, M., Wright, P., & Wright, P. (2014). All about tests and assessments. Hartfield, VA: Harbor House Law Press.

This book is divided into fifteen chapters, which list frequently asked questions about assessment in special education. This is a beneficial resource for parents to review because most questions are derived from parents who want to learn more about how assessment plays an important role in their child's life. Teachers can also benefit from this because they can see parent viewpoints, and develop ways about how they can better help parents understand the assessment process.

4. Pierangelo, R., & Giuliani, G. (2012). Assessment in special education: A practical approach. Upper Saddle River, NJ: Pearson.

This text provides detailed information about the use of assessment in special education. This is a helpful resource for APE teachers and other professionals to use when considering assessment for students, and its importance in the IEP process. The text is broken up into two parts. Part one "Foundational concepts in assessment in special education", which is composed of five chapters, and part two "The special education process", which contains fourteen chapters.

Websites

1. Cap'n Pete's Power PE: https://www.capnpetespowerpe.com/assessment

This website is a good resource to use for physical educators. They have a section that provides assessment rubrics and checklists that can be purchased for use in physical education. The assessments vary with locomotor, object control, and fitness skills and can be purchased in bundles. Each rubric has visuals, descriptions, and an easy scoring system.

2. PE Central: http://www.pecentral.org/assessment/assessment.html

PE Central is a resource that provides assessment ideas in physical education. On this website, there are tips, assessment articles, paper and pencil ideas, alternative assessments (rubrics and checklists), report cards, and other ways to assess students in PE.

YouTube Videos

1. BOT-2 Introduction and Overview: https://www.youtube.com/watch?v=oVTx1cLon7s

This video is presented by the authors of the BOT-2 and provides detailed information about the assessment. Additional videos for administering and scoring each skill within the BOT-2 can be found under the YouTube username "Eleanor Clark Slagle". This resource is beneficial for teachers who are considering the BOT-2.

Recommendations for Future Research

The development of this project has prompted many questions for future research studies. Assessment instruments are often reexamined to update content and ensure their validity and reliability. However, more research is needed so APE teachers and other

professionals can continue to utilize these instruments. The following research questions are offered for future study.

1. Which assessment is most effective when assessing students with a visual impairment (or other disabilities)?
2. Which assessment instrument is most commonly used by veteran teachers versus first year teachers?
3. How different are results of an assessment tool if administered by a trained professional versus a teacher who is not trained on the specific tool?
4. Does technology motivate students to perform better on assessments?
5. What are the best uses of using technology during administration of an assessment?
6. Does assessing students with disabilities have a positive effect on their overall performance in physical education?
7. What are the effects of assessing students with disabilities in relation to the psychomotor, cognitive, and affective domains?

Recommendations for Future Critical Analysis Projects

The creation of this project has also provoked ideas for future projects related to standardized assessment tools used in APE. Further research and projects can help educators understand the importance of assessment in APE and how it plays a role in the development of a student's motor performance. Suggestions for future projects include:

1. Develop an instructional video on how to administer and score the TGMD-2 (or any instrument).

2. Create an in-depth video that analyzes just one assessment instrument and its content including all test items.
3. Develop an instructional video of the pros and cons of using standardized assessments versus authentic assessments such as teacher-made rubrics or checklists.
4. An instructional video that demonstrates how to create teacher-made rubrics and use them for students with disabilities in APE.
5. An instructional video on how members on the motor team (APE teachers, occupational and physical therapists) work together to use the BOT-2 (or other assessments).
6. An in-depth video about the IEP process in relation to APE.
7. An instructional video about different placement options for students with disabilities, and the benefits of each placement.

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APPENDIX A

TEST OF GROSS MOTOR DEVELOPMENT-2 (TMGD-2)

TGMD–2

Test of Gross Motor Development–Second Edition

Profile/Examiner Record Form

Section I. Identifying Information

Name _____ School _____

Male ☐ Female ☐ Grade _____ Referred by _____

Date of Testing _____ Reason for Referral _____

Date of Birth _____ Examiner _____

Age _____ Examiner's Title _____

Section II. Record of Scores

First Testing

	Raw Score	Standard Score	Percentile	Age Equivalent
Locomotor				
Object Control				
Sum of Standard Scores				
Gross Motor Quotient				

Second Testing

	Raw Score	Standard Score	Percentile	Age Equivalent
Locomotor				
Object Control				
Sum of Standard Scores				
Gross Motor Quotient				

Section III. Testing Conditions

A. Place Tested _____

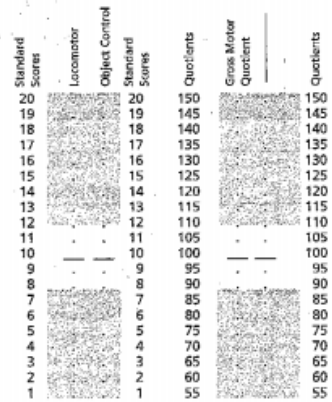
	Interfering				Not Interfering
B. Noise Level	1	2	3	4	5
C. Interruptions	1	2	3	4	5
D. Distractions	1	2	3	4	5
E. Light	1	2	3	4	5
F. Temperature	1	2	3	4	5

G. Notes and other considerations _____

Section IV. Other Test Data

Name of Test	Date	Standard Score	TGMD–2 Equivalent

Section V. Profile of Standard Scores



Additional copies of this form (#9262) may be purchased from
PRO-ED, 8700 Shoal Creek Blvd., Austin, TX 78757-6897
800/897-3202 Fax 800/397-7633 www.proedinc.com

Section VI. Subtest Performance Record

Preferred Hand: Right ☐ Left ☐ Not Established ☐
Preferred Foot: Right ☐ Left ☐ Not Established ☐

Locomotor Subtest

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
1. Run	60 feet of clear space, and two cones	Place two cones 50 feet apart. Make sure there is at least 8 to 10 feet of space beyond the second cone for a safe stopping distance. Tell the child to run as fast as he or she can from one cone to the other when you say "Go." Repeat a second trial.	1. Arms move in opposition to legs, elbows bent			
			2. Brief period where both feet are off the ground			
			3. Narrow foot placement landing on heel or toe (i.e., not flat footed)			
			4. Nonsupport leg bent approximately 90 degrees (i.e., close to buttocks)			
					Skill Score	
2. Gallop	25 feet of clear space, and tape or two cones	Mark off a distance of 25 feet with two cones or tape. Tell the child to gallop from one cone to the other. Repeat a second trial by galloping back to the original cone.	1. Arms bent and lifted to waist level at takeoff			
			2. A step forward with the lead foot followed by a step with the trailing foot to a position adjacent to or behind the lead foot			
			3. Brief period when both feet are off the floor			
			4. Maintains a rhythmic pattern for four consecutive gallops			
					Skill Score	
3. Hop	A minimum of 15 feet of clear space	Tell the child to hop three times on his or her preferred foot (established before testing) and then three times on the other foot. Repeat a second trial.	1. Nonsupport leg swings forward in pendular fashion to produce force			
			2. Foot of nonsupport leg remains behind body			
			3. Arms flexed and swing forward to produce force			
			4. Takes off and lands three consecutive times on preferred foot			
			5. Takes off and lands three consecutive times on nonpreferred foot			
					Skill Score	
4. Leap	A minimum of 20 feet of clear space, a beanbag, and tape	Place a beanbag on the floor. Attach a piece of tape on the floor so it is parallel to and 10 feet away from the beanbag. Have the child stand on the tape and run up and leap over the beanbag. Repeat a second trial.	1. Take off on one foot and land on the opposite foot			
			2. A period where both feet are off the ground longer than running			
			3. Forward reach with the arm opposite the lead foot			
					Skill Score	

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
5. Horizontal Jump	A minimum of 10 feet of clear space and tape	Mark off a starting line on the floor. Have the child start behind the line. Tell the child to jump as far as he or she can. Repeat a second trial.	1. Preparatory movement includes flexion of both knees with arms extended behind body			
			2. Arms extend forcefully forward and upward reaching full extension above the head			
			3. Take off and land on both feet simultaneously			
			4. Arms are thrust downward during landing			
					Skill Score	
6. Slide	A minimum of 25 feet of clear space, a straight line, and two cones	Place the cones 25 feet apart on top of a line on the floor. Tell the child to slide from one cone to the other and back. Repeat a second trial.	1. Body turned sideways so shoulders are aligned with the line on the floor			
			2. A step sideways with lead foot followed by a slide of the trailing foot to a point next to the lead foot			
			3. A minimum of four continuous step–slide cycles to the right			
			4. A minimum of four continuous step–slide cycles to the left			
					Skill Score	
					Locomotor Subtest Raw Score (sum of the 6 skill scores)	

Object Control Subtest

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
1. Striking a Stationary Ball	A 4-inch lightweight ball, a plastic bat, and a batting tee	Place the ball on the batting tee at the child's belt level. Tell the child to hit the ball hard. Repeat a second trial.	1. Dominant hand grips bat above nondominant hand			
			2. Nonpreferred side of body faces the imaginary tosser with feet parallel			
			3. Hip and shoulder rotation during swing			
			4. Transfers body weight to front foot			
			5. Bat contacts ball			
					Skill Score	
2. Stationary Dribble	An 8- to 10-inch playground ball for children ages 3 to 5; a basketball for children ages 6 to 10; and a flat, hard surface	Tell the child to dribble the ball four times without moving his or her feet, using one hand, and then stop by catching the ball. Repeat a second trial.	1. Contacts ball with one hand at about belt level			
			2. Pushes ball with fingertips (not a slap)			
			3. Ball contacts surface in front of or to the outside of foot on the preferred side			
			4. Maintains control of ball for four consecutive bounces without having to move the feet to retrieve it			
					Skill Score	

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
3. Catch	A 4-inch plastic ball, 15 feet of clear space, and tape	Mark off two lines 15 feet apart. The child stands on one line and the tosser on the other. Toss the ball underhand directly to the child with a slight arc aiming for his or her chest. Tell the child to catch the ball with both hands. Only count those tosses that are between the child's shoulders and belt. Repeat a second trial.	1. Preparation phase where hands are in front of the body and elbows are flexed			
			2. Arms extend while reaching for the ball as it arrives			
			3. Ball is caught by hands only			
					Skill Score	
4. Kick	An 8- to 10-inch plastic, playground, or soccer ball; a beanbag; 30 feet of clear space; and tape	Mark off one line 30 feet away from a wall and another line 20 feet from the wall. Place the ball on top of the beanbag on the line nearest the wall. Tell the child to stand on the other line. Tell the child to run up and kick the ball hard toward the wall. Repeat a second trial.	1. Rapid continuous approach to the ball			
			2. An elongated stride or leap immediately prior to ball contact			
			3. Nonkicking foot placed even with or slightly in back of the ball			
			4. Kicks ball with instep of preferred foot (shoelaces) or toe			
					Skill Score	
5. Overhand Throw	A tennis ball, a wall, tape, and 20 feet of clear space	Attach a piece of tape on the floor 20 feet from a wall. Have the child stand behind the 20-foot line facing the wall. Tell the child to throw the ball hard at the wall. Repeat a second trial.	1. Windup is initiated with downward movement of hand/arm			
			2. Rotates hip and shoulders to a point where the nonthrowing side faces the wall			
			3. Weight is transferred by stepping with the foot opposite the throwing hand			
			4. Follow-through beyond ball release diagonally across the body toward the nonpreferred side			
					Skill Score	
6. Underhand Roll	A tennis ball for children ages 3 to 6; a softball for children ages 7 to 10; two cones; tape; and 25 feet of clear space	Place the two cones against a wall so they are 4 feet apart. Attach a piece of tape on the floor 20 feet from the wall. Tell the child to roll the ball hard so that it goes between the cones. Repeat a second trial.	1. Preferred hand swings down and back, reaching behind the trunk while chest faces cones			
			2. Strides forward with foot opposite the preferred hand toward the cones			
			3. Bends knees to lower body			
			4. Releases ball close to the floor so ball does not bounce more than 4 inches high			
					Skill Score	
					Object Control Subtest Raw Score (sum of the 6 skill scores)	

Test of Gross Motor Development–Third Edition

TGMD-3

Profile/Examiner Record Form–Item Analysis

Dale A. Ulrich

Section 1. Identifying Information

Child's Name or ID #: _____

Examiner's Name: _____ Affiliation: _____ Examiner's Email Address: _____

Date of Testing: _____ Date of Birth: _____

Gender: Male ☐ Female ☐ Age in Years: _____ Child's Weight Status: Underweight ☐ Normal ☐ Overweight ☐

Child's Residential Location: City ☐ Suburb of City ☐ Rural or Small Town ☐ Preferred Hand: Right ☐ Left ☐ Not Established ☐ Preferred Foot: Right ☐ Left ☐ Not Established ☐

Section 2. Scoring Notes

- Directions for all test items require you to first give the child a good demonstration of the skill, which includes all of the performance criteria; give the child a practice trial, followed by two test trials that you score.
- Score each performance criterion as:
  - 1 = performs correctly
  - 0 = does not perform correctly
- **Performance criteria scores** are calculated by summing the score on trial 1 and trial 2 for each performance criterion.
- **Skill scores** are calculated by summing all of the performance criteria scores for each skill.
- The total **locomotor subtest score** is calculated by summing all 6 locomotor skill scores.
- The total **ball skills subtest score** is calculated by summing the 7 ball skill scores.
- The total **gross motor test score** is calculated by summing the total locomotor subtest score and the total ball skills subtest score.
- We have learned that test administrator bias occurs when the tester is unsure how to score a performance criterion. When testing a child, if you are unsure of whether the child performed a performance criterion correctly, administer another trial and just look at that performance criterion and score it.
- When testing children with a disability or very young children who appear to be distracted easily, it is recommended that you to have them stand on a small poly spot or other marker and tell them to stand on the marker and watch your demonstration. It is also helpful to use another poly spot or marker as the child's starting position for the locomotor skills. Giving these children more structure during your testing should be helpful.

Section 3. Subtest Performance Record

Locomotor Subtest

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
1. Run	60 feet (18.3 meters) of clear space to run, and two cones or markers	Place two cones 50 feet (15.2 meters) apart. Make sure there is at least 8–10 feet (2.4–3.1 meters) of space beyond the cone for a safe stopping distance. Tell the child to run fast from one cone to the other cone when you say, "Go." Repeat a second trial.	1. Arms move in opposition to legs with elbows bent			
			2. Brief period where both feet are off the surface			
			3. Narrow foot placement landing on heel or toes (not flat-footed)			
			4. Non-support leg bent about 90 degrees so foot is close to buttocks			
					Skill Score	
2. Gallop	25 feet (7.6 meters) of clear space, and two cones or markers	Place two cones 25 feet apart. Tell the child to gallop from one cone to the other cone and stop. Repeat a second trial.	1. Arms flexed and swinging forward			
			2. A step forward with lead foot followed with the trailing foot landing beside or a little behind the lead foot (not in front of the lead foot)			
			3. Brief period where both feet come off the surface			
			4. Maintains a rhythmic pattern for four consecutive gallops			
					Skill Score	
3. Hop	A minimum of 15 feet (4.6 meters) of clear space, and two cones or markers	Place two cones 15 feet apart. Tell the child to hop four times on his/her preferred foot (established before testing). Repeat a second trial.	1. Non-hopping leg swings forward in pendular fashion to produce force			
			2. Foot of non-hopping leg remains behind hopping leg (does not cross in front of)			
			3. Arms flex and swing forward to produce force			
			4. Hops four consecutive times on the preferred foot before stopping			
					Skill Score	
4. Skip	A minimum of 30 feet (9.1 meters) of clear space, and two cones or markers	Place two cones 30 feet apart. Mark off two lines at least 30 feet apart with cones/markers. Tell the child to skip from one cone to the other cone. Repeat a second trial.	1. A step forward followed by a hop on the same foot			
			2. Arms are flexed and move in opposition to legs to produce force			
			3. Completes four continuous rhythmical alternating skips			
					Skill Score	
5. Horizontal jump	A minimum of 10 feet (3.1 meters) of clear space, and tape or markers	Mark off a starting line on the floor, mat, or carpet. Position the child behind the line. Tell the child to jump far. Repeat a second trial.	1. Prior to take off both knees are flexed and arms are extended behind the back			
			2. Arms extend forcefully forward and upward reaching above the head			
			3. Both feet come off the floor together and land together			
			4. Both arms are forced downward during landing			
					Skill Score	

Locomotor Subtest (*continued*)

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
6. Slide	A minimum of 25 feet (7.6 meters) of clear space, a straight line, and two cones or markers	Place two cones 25 feet apart on a straight line. Tell the child to slide from one cone to the other cone. Let the child decide which direction to slide in first. Ask the child to slide back to the starting point. Repeat a second trial.	1. Body is turned sideways so shoulders remain aligned with the line on the floor (score on preferred side only)			
			2. A step sideways with the lead foot followed by a slide with the trailing foot where both feet come off the surface briefly (score on preferred side only)			
			3. Four continuous slides to the preferred side			
			4. Four continuous slides to the non-preferred side			
					Skill Score	

Locomotor Subtest Total Score _____

Ball Skills Subtest

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
1. Two-hand strike of a stationary ball	A 4-inch (10.2-centimeter) plastic ball, a plastic bat, and a batting tee or other device to hold ball stationary	Place ball on batting tee at child's waist level. Tell child to hit the ball hard, straight ahead. Point straight ahead. Repeat a second trial.	1. Child's preferred hand grips bat above non-preferred hand			
			2. Child's non-preferred hip/shoulder faces straight ahead			
			3. Hip and shoulder rotate and derotate during swing			
			4. Steps with non-preferred foot			
			5. Hits ball sending it straight ahead			
					Skill Score	
2. One-hand forehand strike of self-bounced ball	A tennis ball, a light plastic paddle, and a wall	Hand the plastic paddle and ball to child. Tell child to hold ball up and drop it (so it bounces about waist height); off the bounce, hit the ball toward the wall. Point toward the wall. Repeat a second trial.	1. Child takes a backswing with the paddle when the ball is bounced.			
			2. Steps with non-preferred foot			
			3. Strikes the ball toward the wall			
			4. Paddle follows through toward non-preferred shoulder			
					Skill Score	
3. One-hand stationary dribble	An 8–10 inch (20.3–25.4 centimeter) playground ball for ages 3–5 years, a basketball for ages 6–10 years, and a flat surface	Tell the child to bounce the ball at least four times consecutively without moving their feet, using one hand, and then stop by catching the ball. Repeat a second trial.	1. Contacts ball with one hand at about waist level			
			2. Pushes the ball with fingertips (not slapping at ball)			
			3. Maintains control of the ball for at least four consecutive bounces without moving the feet to retrieve the ball			
					Skill Score	

Ball Skills Subtest (*continued*)

Skill	Materials	Directions	Performance Criteria	Trial 1	Trial 2	Score
4. Two-hand catch	A 4-inch (10.2-centimenter) plastic ball, 15 feet (4.6 meters) of clear space, and tape or a marker	Mark off two lines 15 feet apart. The child stands on one line and the tosser stands on the other line. Toss the ball underhand to the child aiming at the child's chest area. Tell the child to catch the ball with two hands. Only count a trial in which toss is near child's chest. Repeat a second trial.	1. Child's hands are positioned in front of the body with the elbows flexed			
			2. Arms extend reaching for the ball as it arrives			
			3. Ball is caught by hands only			
					Skill Score	
5. Kick a stationary ball	An 8–10 inch (20.3–25.4 centimeters) plastic, playground, or soccer ball; tape or a marker; a wall; and clear space for kicking	Mark off one line about 20 feet (6.1 meters) from the wall and a second line 8 feet (2.4 meters) beyond the first line. Place the ball on the first line closest to the wall. Tell the child to run up and kick the ball hard toward the wall. Repeat a second trial.	1. Rapid, continuous approach to the ball			
			2. Child takes an elongated stride or leap just prior to ball contact			
			3. Non-kicking foot placed close to the ball			
			4. Kicks ball with instep or inside of preferred foot (not the toes)			
					Skill Score	
6. Overhand throw	A tennis ball, a wall, and 20 feet (6.1 meters) of clear space	Attach a piece of tape on the floor 20 feet from the wall. Have the child stand behind the tape line facing the wall. Tell the child to throw the ball hard at the wall. Repeat a second trial.	1. Windup is initiated with a downward movement of hand and arm			
			2. Rotates hip and shoulder to a point where the non-throwing side faces the wall			
			3. Steps with the foot opposite the throwing hand toward the wall			
			4. Throwing hand follows through after the ball release, across the body toward the hip of the non-throwing side			
					Skill Score	
7. Underhand throw	A tennis ball, tape, a wall, and 15 feet (4.6 meters) of space	Attach a piece of tape 15 feet from the wall. Have the child stand behind the tape line facing the wall. Tell the child to throw the ball underhand and hit the wall. Repeat a second trial.	1. Preferred hand swings down and back reaching behind the trunk			
			2. Steps forward with the foot opposite the throwing hand			
			3. Ball is tossed forward hitting the wall without a bounce			
			4. Hand follows through after ball release to at least chest level			
					Skill Score	

Ball Skills Subtest Total Score _____

Total Gross Motor Score _____

APPENDIX B

BROCKPORT PHYSICAL FITNESS TEST-2 (BPFT-2)

Brockport Fitness Test

Data Entry Form

This form is a quick and easy way to record student information and develop an appropriate fitness test for students. All possible tests from the Brockport Physical Fitness Test are listed. Simply fill in data for the tests you have a student perform. You can then use this record when completing an individualized Brockport Physical Fitness Test form for analysis of each student's results.

Student name: _____ Gender: ___Male ___Female

ID No.: _____ IEP (yes or no): _____ Grade (if applicable): _____

Height (feet and inches): _____ Weight: _____ Month and year: _____

Classification (check one)

_____ general (without disability) _____ intellectual disability _____ visual disability

_____ spinal cord injury _____ cerebral palsy _____ congenital anomaly or amputation

Subclassification (check subclassification necessary for test item selection and for reporting results)

Visual (check one)

_____ runs with assistance

_____ runs without assistance

Spinal cord injury (check one)

_____ low-level quadriplegia (LLQ)

_____ paraplegia: wheelchair (PW)

_____ paraplegia: ambulatory (PA)

Cerebral Palsy (check one)

_____ C1 _____ C2U _____ C2L _____ C3 _____ C4 _____ C5 _____ C6 _____ C7 _____ C8

Congenital Anomaly (check one)

_____ one arm only _____ two arms only _____ one leg only _____ two legs only

_____ one arm, one leg (same side) _____ one arm, one leg (opposite sides)

Scores

I. Aerobic Functioning

_____ Mile: run/walk time (min/sec)

_____ 20 m (laps)

_____ 15 m (laps)

_____ TAMT (P/F)

II. Body composition

_____ Height (feet and inches)

_____ Weight (lbs.)

_____ Percent body fat (%)

_____ Triceps (mm)

_____ Triceps + subscapular (mm)

_____ Triceps + calf (mm)

_____ BMI

III. Musculoskeletal Functioning

A. Strength and Endurance

_____ Reverse curl (#)

_____ 40 m push/walk (P/F)

_____ Ramp test (feet)

_____ Push-ups (#)

_____ Seated push-ups (sec.)

_____ Pull-ups (#)

_____ Modified pull-ups (#)

_____ Dumbbell press (#)

_____ Bench press (#)

_____ Grip strength (kg)

_____ Isometric push-ups (sec.)

_____ Extended-arm hang (sec.)

_____ Flexed-arm hang (sec.)

_____ Curl-ups (#)

_____ Modified curl-ups (#)

B. Flexibility or Range of Motion

_____ Trunk lift (in.)

_____ Shoulder stretch, right (P/F)

_____ Shoulder stretch, left (P/F)

_____ Back-saver, right (in.)

_____ Back-saver, left (in.)

_____ Modified Thomas test (0-3)

_____ Modified Apley test (0-3)

_____ Target stretch test (0-2)

- _____ Wrist extension, right
- _____ Wrist extension, left
- _____ Elbow extension, right
- _____ Elbow extension, left
- _____ Shoulder extension, right
- _____ Shoulder extension, left
- _____ Shoulder abduction, right
- _____ Shoulder abduction, left
- _____ Shoulder external rotation, right
- _____ Shoulder external rotation, left
- _____ Forearm supination, right
- _____ Forearm supination, left
- _____ Forearm pronation, right
- _____ Forearm pronation, left
- _____ Knee extension, right
- _____ Knee extension, left

From J. Winnick and F. Short, 2014, *Brockport physical fitness test manual: A health-related assessment for youngsters with disabilities* (Champaign, IL: Human Kinetics).

General Brockport Physical Fitness Test Form

Student name: _____ Gender: ___ Male ___ Female

Age (yr): _____ Height: _____ Weight: _____ Date: _____

Classification: _____ Subclassification: _____

This form identifies all test items on the Brockport Physical Fitness Test (BPFT). It can be used as a resource for developing a fitness test for a particular student, recording results, and matching results to fitness zones. The BPFT typically includes four to six test items: one for aerobic functioning, one for body composition, and at least two for musculoskeletal functioning. (The Target Stretch Test items are considered as a single test for this purpose.) It is recommended that an individualized specific test form for each student consisting only of the items taken on the test be subsequently developed for each student and be used for reporting results to students, parents, and guardians. The results may serve as a basis for developing individualized education programs (IEPs) for students.

Aerobic Functioning

Test item	Units of measure	Test scores	Adapted Fitness Zone (if applicable)	Healthy Fitness Zone
AEROBIC CAPACITY				
Mile run or walk	min/sec			
20 m (laps)	#			
15 m (laps)	#			
AEROBIC BEHAVIOR				
TAMT	P/F		None	

Body Composition

Test item	Units of measure	Test scores	Adapted Fitness Zone (if applicable)	Healthy Fitness Zone
Percent body fat	%		No AFZ for body composition	
Triceps	(mm)			
Triceps + subscapular	(mm)			
Triceps + calf	(mm)			
Body mass index				

Musculoskeletal Functioning

Test item	Units of measure	Test scores	Adapted Fitness Zone (if applicable)	Healthy Fitness Zone
STRENGTH AND ENDURANCE				
Reverse curl	#			
40 m push/walk	P/F			
Ramp test	feet			
Push-ups	#			
Seated push-ups	#			
Pull-ups	#			

Test Item	Units of measure	Test scores	Adapted Fitness Zone (if applicable)	Healthy Fitness Zone
Modified pull-ups	#			
Dumbbell press	#			
Bench press	#			
Grip strength	kg			
Isometric push-ups	sec.			
Extended-arm hang	sec.			
Flexed-arm hang	sec.			
Curl-ups	#			
Modified curl-ups	#			
FLEXIBILITY OR RANGE OF MOTION				
Trunk lift	#			
Shoulder stretch, right	P/F			
Shoulder stretch, left	P/F			
Back-saver sit-and-reach, right	in.			
Back-saver sit-and-reach, left	in.			
Modified Thomas test	0-3			
Modified Apley test	0-3			
Target stretch test	0-2			
Wrist extension, right	0-2			
Wrist extension, left	0-2			
Elbow extension, right	0-2			
Elbow extension, left	0-2			
Shoulder extension, right	0-2			
Shoulder extension, left	0-2			
Shoulder abduction, right	0-2			
Shoulder abduction, left	0-2			
Shoulder external rotation, right	0-2			
Shoulder external rotation, left	0-2			
Forearm supination, right	0-2			
Forearm supination, left	0-2			
Forearm pronation, right	0-2			
Forearm pronation, left	0-2			
Knee extension, right	0-2			
Knee extension, left	0-2			

Interpretation: _____

_____

Needs: _____

_____

From J. Winnick and F. Short, 2014, *Brockport physical fitness test manual: A health-related assessment for youngsters with disabilities* (Champaign, IL: Human Kinetics).

APPENDIX C

BRUININKS-OSERETSKY TEST OF MOTOR PROFICIENCY-2 (BOT-2)

BOT 2

Bruininks-Oseretsky Test of Motor Proficiency, *Second Edition*

Robert H. Bruininks & Brett D. Bruininks

	Year	Month	Day
Test Date			
Birth Date			
Chronological Age			

Preferred Drawing Hand	Right	Left
Preferred Throwing Hand/Arm	Right	Left
Preferred Foot/Leg	Right	Left

Norms Used: ☐ Female ☐ Male ☐ Combined

Examinee Name _____ Sex _____ Grade _____

Examiner Name _____ School/Clinic _____

	Total Point Score	Scale Score Mean = 15, *SD* = 5 (Tables B.1–B.3)	Standard Score Mean = 50, *SD* = 10 (Tables B.4–B.7)	Confidence Interval: 90% or 95% (Tables C.1–C.4) Band	Interval	%ile Rank (Tables B.4–B.7)	Age Equiv. (Tables B.14–B.16)	Descriptive Category (Table C.13)
1 Fine Motor Precision								
2 Fine Motor Integration								
Fine Manual Control		Sum						
3 Manual Dexterity								
7 Upper-Limb Coordination								
Manual Coordination		Sum						
4 Bilateral Coordination								
5 Balance								
Body Coordination		Sum						
6 Running Speed and Agility								
8 Strength Push-up: Knee Full								
Strength and Agility		Sum						
			Sum					
Total Motor Composite								

		Total Point Score	Standard Score (Tables B.8–B.13)	Confidence Interval: 90% or 95% (Tables C.3, C.4) Band	Interval	%ile Rank (Tables B.8–B.13)	Descriptive Category (Table C.13)
SHORTForm	Push-up: Knee Full						

DIRECTIONS

Complete Form

During the testing session, record the examinee's performance on each item.

After the testing session, convert each item raw score to a point score using the conversion table provided. For items needing two trials, convert the better of the two raw scores. Then, record the point score in the appropriate oval in the Point Score column.

For each subtest, add the item point scores, and record the total in the oval labeled Total Point Score and on the appropriate line on the cover page.

Short Form

During the testing session, record the examinee's performance on each Short Form item, listed on page 8.

After the testing session, convert each item raw score to a point score using the conversion table provided. For items needing two trials, convert the better of the two raw scores. Then, record the point score in the appropriate oval in the Point Score column.

Finally, add the item point scores for all 14 Short Form items, and record the total in the oval labeled Total Point Score and on the appropriate line on the cover page.

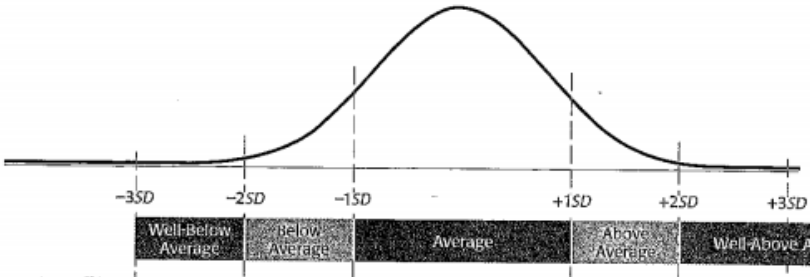
For additional forms, write AGS Publishing, 4201 Woodland Road, Circle Pines, MN 55014-1796; call toll free 800-328-2560 (in Canada 800-263-3558); or visit our Web site www.agsnet.com.

AGS PUBLISHING

A 0 9 8 7 6 5 4 3 2 1

Product Number: 58002

BOT–2 SCORE PROFILE



Composite Score Profile

	Standard Score	____ % Conf. Int.
Total Motor Composite	____	____–____
Fine Manual Control	____	____–____
Manual Coordination	____	____–____
Body Coordination	____	____–____
Strength and Agility	____	____–____

20 30 40 50 60 70 80

Subtest Score Profile

	Scale Score	____ % Conf. Int.
Fine Motor Precision	____	____–____
Fine Motor Integration	____	____–____
Manual Dexterity	____	____–____
Upper-Limb Coordination	____	____–____
Bilateral Coordination	____	____–____
Balance	____	____–____
Running Speed and Agility	____	____–____
Strength	____	____–____

1 5 10 15 20 25 30 35

2

BOT–2 PAIRWISE COMPARISONS

Composite Comparisons	Standard Score	Standard Score Difference	Statistical Significance Level (circle one in each row) (Tables C.7, C.8)	Frequency of Difference (circle one in each row) (Tables C.11, C.12)	Standard Score	
Fine Manual Control			NS <.05 <.01	NI <10% <5% <1%		Manual Coordination
Fine Manual Control			NS <.05 <.01	NI <10% <5% <1%		Body Coordination
Fine Manual Control			NS <.05 <.01	NI <10% <5% <1%		Strength and Agility
Manual Coordination			NS <.05 <.01	NI <10% <5% <1%		Body Coordination
Manual Coordination			NS <.05 <.01	NI <10% <5% <1%		Strength and Agility
Body Coordination			NS <.05 <.01	NI <10% <5% <1%		Strength and Agility
Subtest Comparisons	**Scale Score**	**Scale Score Difference**	**Statistical Significance Level** (circle one in each row) (Tables C.5, C.6)	**Frequency of Difference** (circle one in each row) (Tables C.9, C.10)	**Scale Score**	
Fine Motor Precision			NS <.05 <.01	NI <10% <5% <1%		Fine Motor Integration
Manual Dexterity			NS <.05 <.01	NI <10% <5% <1%		Upper-Limb Coordination
Bilateral Coordination			NS <.05 <.01	NI <10% <5% <1%		Balance
Running Speed and Agility			NS <.05 <.01	NI <10% <5% <1%		Strength
			NS <.05 <.01	NI <10% <5% <1%		
			NS <.05 <.01	NI <10% <5% <1%		
			NS <.05 <.01	NI <10% <5% <1%		

BACKGROUND AND BEHAVIORAL OBSERVATIONS

Are there any considerations that may affect the accuracy of these scores? _____

_____

_____

_____

Were accommodations made for physical impairments? _____

_____

_____

_____

	Poor	Marginal	Good	Excellent
Attention	1	2	3	4
Fluidity of Movement	1	2	3	4
Effort	1	2	3	4
Understanding	1	2	3	4

3

Subtest 1: **Fine Motor Precision**

	Raw Score									Point Score
1 Filling in Shapes—Circle	☐ points	Raw	0	1	2	3				◯
		Point	**0**	**1**	**2**	**3**				
2 Filling in Shapes—Star	☐ points	Raw	0	1	2	3				◯
		Point	**0**	**1**	**2**	**3**				
3 Drawing Lines through Paths—Crooked	☐ errors	Raw	≥21	15–20	10–14	6–9	4–5	2–3	1	0 ◯
		Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4 Drawing Lines through Paths—Curved	☐ errors	Raw	≥21	15–20	10–14	6–9	4–5	2–3	1	0 ◯
		Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5 Connecting Dots	☐ points	Raw	≥0	1–2	3–4	5–6	7–8	9–10	11	12 ◯
		Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
6 Folding Paper	☐ points	Raw	0	1–2	3–4	5–6	7–8	9–10	11	12 ◯
		Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
7 Cutting Out a Circle	☐ points	Raw	0	1–2	3–4	5–6	7–8	9–10	11	12 ◯
		Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Notes & Observations

◯ **Total Point Score Subtest 1 (max = 41)**

Subtest 2: **Fine Motor Integration**

For each item, if the Basic Shape facet is scored 0, then all remaining facets and the total score for that item must also be scored 0.	Basic Shape	Closure	Edges	Orientation	Overlap	Overall Size	Raw Score*	Point Score
1 Copying a Circle	0 1	0 1	0 1			0 1	☐ points	◯
2 Copying a Square	0 1	0 1	0 1	0 1		0 1	☐ points	◯
3 Copying Overlapping Circles	0 1	0 1	0 1	0 1	0 1	0 1	☐ points	◯
4 Copying a Wavy Line	0 1		0 1	0 1		0 1	☐ points	◯
5 Copying a Triangle	0 1	0 1	0 1	0 1		0 1	☐ points	◯
6 Copying a Diamond	0 1	0 1	0 1	0 1		0 1	☐ points	◯
7 Copying a Star	0 1	0 1	0 1	0 1		0 1	☐ points	◯
8 Copying Overlapping Pencils	0 1	0 1	0 1	0 1	0 1	0 1	☐ points	◯

Notes & Observations

◯ **Total Point Score Subtest 2 (max = 40)**

* For Subtest 2: Fine Motor Integration, add the facet scores, record the sum in the Raw Score column, and transfer the raw score for each item directly to the corresponding oval in the Point Score column.

Subtest 3: **Manual Dexterity**

For Items 2 through 5, always conduct the second trial.	Raw Score Trial 1	Raw Score Trial 2											Point Score
1 Making Dots in Circles	circles		Raw	0–4	5–10	11–15	16–20	21–25	26–30	31–35	36–40	41–50	≥51	
			Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
2 Transferring Pennies	pennies	pennies	Raw	0–2	3–4	5–6	7–8	9–10	11–12	13–14	15–16	17–18	19–20	
			Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
3 Placing Pegs into a Pegboard	pegs	pegs	Raw	0–2	3	4	5	6	7	8	9	10	≥11	
			Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
4 Sorting Cards	cards	cards	Raw	0–4	5–6	7–8	9–10	11–12	13–14	15–16	17–20	21–24	≥25	
			Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
5 Stringing Blocks	blocks	blocks	Raw	0–1	2	3	4	5	6	7	8	9	≥10	
			Point	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	

Notes & Observations

Total Point Score Subtest 3 (max = 45)

Subtest 4: **Bilateral Coordination**

Conduct the second trial only if the examinee does not earn the maximum score on the first trial.	Raw Score Trial 1	Raw Score Trial 2							Point Score
1 Touching Nose with Index Fingers—Eyes Closed	touches	touches	Raw	0	1	2	3	4	
			Point	**0**	**1**	**2**	**3**	**4**	
2 Jumping Jacks	jumping jacks	jumping jacks	Raw	0	1	2–4	5		
			Point	**0**	**1**	**2**	**3**		
3 Jumping in Place—Same Sides Synchronized	jumps	jumps	Raw	0	1	2–4	5		
			Point	**0**	**1**	**2**	**3**		
4 Jumping in Place—Opposite Sides Synchronized	jumps	jumps	Raw	0	1	2–4	5		
			Point	**0**	**1**	**2**	**3**		
5 Pivoting Thumbs and Index Fingers	pivots	pivots	Raw	0	1	2–4	5		
			Point	**0**	**1**	**2**	**3**		
6 Tapping Feet and Fingers—Same Sides Synchronized	taps	taps	Raw	0	1	2–4	5–9	10	
			Point	**0**	**1**	**2**	**3**	**4**	
7 Tapping Feet and Fingers—Opposite Sides Synchronized	taps	taps	Raw	0	1	2–4	5–9	10	
			Point	**0**	**1**	**2**	**3**	**4**	

Notes & Observations

Total Point Score Subtest 4 (max = 24)

5

Subtest 5: **Balance**

Conduct the second trial only if the examinee does not earn the maximum score on the first trial.

	Raw Score Trial 1	Raw Score Trial 2	Raw	Point	Point Score
1 Standing with Feet Apart on a Line—Eyes Open	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
2 Walking Forward on a Line	steps	steps	0 / 1–2 / 3–4 / 5 / 6	0 / 1 / 2 / 3 / 4	
3 Standing on One Leg on a Line—Eyes Open	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
4 Standing with Feet Apart on a Line—Eyes Closed	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
5 Walking Forward Heel-to-Toe on a Line	steps	steps	0 / 1–2 / 3–4 / 5 / 6	0 / 1 / 2 / 3 / 4	
6 Standing on One Leg on a Line—Eyes Closed	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
7 Standing on One Leg on a Balance Beam—Eyes Open	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
8 Standing Heel-to-Toe on a Balance Beam	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–5.9 / 6.0–9.9 / 10	0 / 1 / 2 / 3 / 4	
9 Standing on One Leg on a Balance Beam—Eyes Closed	seconds	seconds	0.0–0.9 / 1.0–2.9 / 3.0–4.9 / 5.0–7.9 / 8.0–9.9 / 10	0 / 1 / 2 / 3 / 4 / 5	

Notes & Observations

Total Point Score Subtest 5 (max = 37)

Subtest 6: **Running Speed and Agility**

Conduct the second trial only if the examinee stumbles or falls on the first trial.

	Raw Score Trial 1	Raw Score Trial 2	Raw	Point	Point Score
1 Shuttle Run	seconds	seconds	≥16.0 / 14.0–15.9 / 13.0–13.9 / 12.0–12.9 / 11.0–11.9 / 10.0–10.9 / 9.0–9.9 / 8.0–8.9 / 7.5–7.9 / 7.0–7.4 / 6.5–6.9 / 6.0–6.4 / ≤5.9	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12	
2 Stepping Sideways over a Balance Beam	steps	steps	0 / 1–2 / 3–5 / 6–9 / 10–14 / 15–19 / 20–24 / 25–29 / 30–39 / 40–49 / ≥50	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10	
3 One-Legged Stationary Hop	hops	hops	0 / 1–2 / 3–5 / 6–9 / 10–14 / 15–19 / 20–24 / 25–29 / 30–39 / 40–49 / ≥50	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10	
4 One-Legged Side Hop	hops	hops	0 / 1–2 / 3–5 / 6–9 / 10–14 / 15–19 / 20–24 / 25–29 / 30–34 / 35–39 / ≥40	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10	
5 Two-Legged Side Hop	hops	hops	0 / 1–2 / 3–5 / 6–9 / 10–14 / 15–19 / 20–24 / 25–29 / 30–39 / 40–49 / ≥50	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10	

Notes & Observations

Total Point Score Subtest 6 (max = 52)

6

Subtest 7: **Upper-Limb Coordination**

For items 5 and 6, conduct the second trial only if the examinee does not earn the maximum score on the first trial.

	Raw Score Trial 1	Raw Score Trial 2	Raw	0	1	2	3	4	5	6	7	Point Score
1 Dropping and Catching a Ball—Both Hands	catches		Point	0	1	2	3	4	5			
2 Catching a Tossed Ball—Both Hands	catches		Point	0	1	2	3	4	5			
3 Dropping and Catching a Ball—One Hand	catches		Point	0	1	2	3	4	5			
4 Catching a Tossed Ball—One Hand	catches		Point	0	1	2	3	4	5			
5 Dribbling a Ball—One Hand	dribbles	dribbles	Point	0	1	2	3	4–5	6–7	8–9	10	
6 Dribbling a Ball—Alternating Hands	dribbles	dribbles	Point	0	1	2	3	4–5	6–7	8–9	10	
7 Throwing a Ball at a Target	throws		Point	0	1	2	3	4	5			

Notes & Observations

Total Point Score Subtest 7 (max = 39)

Subtest 8: **Strength**

For item 1, conduct the second trial only if the examinee stumbles or falls on the first trial.

	Raw Score Trial 1	Raw Score Trial 2	Raw	≤12	13–18	19–24	25–30	31–36	37–42	43–48	49–54	55–60	61–66	67–72	73–84	≥85	Point Score
1 Standing Long Jump	inches	inches	Point	0	1	2	3	4	5	6	7	8	9	10	11	12	
2a Knee Push-ups **OR** (circle one) **2b** Full Push-ups	push-ups		Raw	0	1–2	3–5	6–10	11–15	16–20	21–25	26–30	31–35	≥36				
			Point	0	1	2	3	4	5	6	7	8	9				
3 Sit-ups	sit-ups		Raw	0	1–2	3–5	6–10	11–15	16–20	21–25	26–30	31–35	≥36				
			Point	0	1	2	3	4	5	6	7	8	9				
4 Wall Sit	seconds		Raw	0	1–4	5–14	15–24	25–44	45–59	60							
			Point	0	1	2	3	4	5	6							
5 V-up	seconds		Raw	0	1–4	5–14	15–24	25–44	45–59	60							
			Point	0	1	2	3	4	5	6							

Notes & Observations

Total Point Score Subtest 8 (max = 42)

SHORTForm

Subtest 1: Fine Motor Precision

	Raw Score	Raw	≥21	15–20	10–14	6–9	4–5	2–3	1	0	Point Score
3 Drawing Lines through Paths—Crooked	____ errors	Point	0	1	2	3	4	5	6	7	
		Raw	0	1–2	3–4	5–6	7–8	9–10	11	12	
6 Folding Paper	____ points	Point	0	1	2	3	4	5	6	7	

Subtest 2: Fine Motor Integration

	Basic Shape	Closure	Edges	Orientation	Overlap	Overall Size	Raw Score*	Point Score
2 Copying a Square	0 1	0 1	0 1	0 1		0 1	____ points	
7 Copying a Star	0 1	0 1	0 1	0 1		0 1	____ points	

Subtest 3: Manual Dexterity

	Raw Score Trial 1	Raw Score Trial 2	Raw	0–2	3–4	5–6	7–8	9–10	11–12	13–14	15–16	17–18	19–20	Point Score
2 Transferring Pennies	____ pennies	____ pennies	Point	0	1	2	3	4	5	6	7	8	9	

Subtest 4: Bilateral Coordination

	Raw Score Trial 1	Raw Score Trial 2	Raw	0	1	2–4	5	6–8	9–10	Point Score
3 Jumping in Place—Same Sides Synchronized	____ jumps	____ jumps	Point	0	1	2	3			
6 Tapping Feet and Fingers—Same Sides Synchronized	____ taps	____ taps	Raw	0	1	2–4	5–9	10		
			Point	0	1	2	3	4		

Subtest 5: Balance

	Raw Score Trial 1	Raw Score Trial 2	Raw	0	1–2	3–4	5	6	Point Score
2 Walking Forward on a Line	____ steps	____ steps	Point	0	1	2	3	4	
7 Standing on One Leg on a Balance Beam—Eyes Open	____ seconds	____ seconds	Raw	0.0–0.9	1.0–2.9	3.0–5.9	6.0–9.9	10	
			Point	0	1	2	3	4	

Subtest 6: Running Speed and Agility

	Raw Score Trial 1	Raw Score Trial 2	Raw	0	1–2	3–5	6–9	10–14	15–19	20–24	25–29	30–39	40–49	≥50	Point Score
3 One-Legged Stationary Hop	____ hops	____ hops	Point	0	1	2	3	4	5	6	7	8	9	10	

Subtest 7: Upper-Limb Coordination

	Raw Score Trial 1	Raw Score Trial 2	Raw	0	1	2	3	4	5	Point Score
1 Dropping and Catching a Ball—Both Hands	____ catches		Point	0	1	2	3	4	5	
			Raw	0	1	2	3	4–5	6–7	8–9	10	
6 Dribbling a Ball—Alternating Hands	____ dribbles	____ dribbles	Point	0	1	2	3	4	5	6	7	

Subtest 8: Strength

	Raw Score	Raw	0	1–2	3–5	6–10	11–15	16–20	21–25	26–30	31–35	>35	Point Score
2a Knee Push-ups **OR** (circle one) **2b** Full Push-ups	____ push-ups	Point	0	1	2	3	4	5	6	7	8	9	
3 Sit-ups	____ sit-ups	Raw	0	1–2	3–5	6–10	11–15	16–20	21–25	26–30	31–35	>35	
		Point	0	1	2	3	4	5	6	7	8	9	

Notes & Observations

Total Point Score Short Form (max = 88)

* For Subtest 2: Fine Motor Integration, add the facet scores, record the sum in the Raw Score column, and transfer the raw score for each item directly to the corresponding oval in the Point Score column.

8

APPENDIX D

PEABODY DEVELOPMENTAL MOTOR SCALES-2 (PDMS-2)

PDMS-2

Profile/Summary Form

Peabody Developmental Motor Scales

Second Edition

Section I. Identifying Information

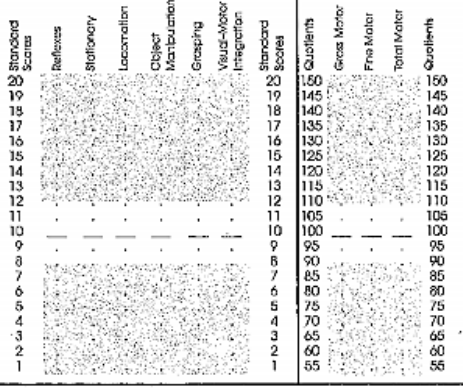
Child's Name _____ Female ☐ Male ☐

	Year	Month	Day	
Date Tested				Examiner's Name
Date of Birth				Examiner's Title
Chronological Age				
Prematurity Adjustment				
Corrected Age				
Age in Months				

Section II. Record of Scores

PDMS-2	Raw Score	Age Equivalent	%ile	Standard Scores		
Reflexes						
Stationary						
Locomotion						
Object Manipulation						
Grasping						
Visual-Motor Integration						
Sum of Standard Scores				☐	☐	☐
				GMQ	FMQ	TMQ
Quotients				◯	◯	◯
Percentiles						

Section III. Profile of Scores



7 8 9 10 08 07 06 05

Additional copies of this form (#9284) may be purchased from
PRO-ED, 8700 Shoal Creek Blvd., Austin, TX 78757-6897
800/897-3202, Fax 800/397-7633, www.proedinc.com

PDMS-2

Examiner Record Booklet

Peabody Developmental Motor Scales

Second Edition

Section I. Identifying Information

Child's Name _____ Female ☐ Male ☐

First Administration	Year	Month	Day
Date Tested			
Date of Birth			
Chronological Age			
Prematurity Adjustment			
Corrected Age			
Age in Months			

Examiner's Name _____

Examiner's Title _____

Subtest Results

	Raw Score		Raw Score
Reflexes		Object Manipulation	
Stationary		Grasping	
Locomotion		Visual-Motor Integration	

Second Administration	Year	Month	Day
Date Tested			
Date of Birth			
Chronological Age			
Prematurity Adjustment			
Corrected Age			
Age in Months			

Examiner's Name _____

Examiner's Title _____

Subtest Results

	Raw Score		Raw Score
Reflexes		Object Manipulation	
Stationary		Grasping	
Locomotion		Visual-Motor Integration	

Third Administration	Year	Month	Day
Date Tested			
Date of Birth			
Chronological Age			
Prematurity Adjustment			
Corrected Age			
Age in Months			

Examiner's Name _____

Examiner's Title _____

Subtest Results

	Raw Score		Raw Score
Reflexes		Object Manipulation	
Stationary		Grasping	
Locomotion		Visual-Motor Integration	

Fourth Administration	Year	Month	Day
Date Tested			
Date of Birth			
Chronological Age			
Prematurity Adjustment			
Corrected Age			
Age in Months			

Examiner's Name _____

Examiner's Title _____

Subtest Results

	Raw Score		Raw Score
Reflexes		Object Manipulation	
Stationary		Grasping	
Locomotion		Visual-Motor Integration	

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Section II. Record of Item Performance

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
Gross Motor Scales							
Reflexes							
1 Start: 1-11 months	2	WALKING REFLEX With hands around trunk, hold child in standing position (facing away). Tilt child slightly forward. Brush top of child's feet against edge of table, then hold child so feet are resting on table.	2 Lifts 1 foot, then the other, in forward walking movement within 3 seconds 1 Lifts 1 foot within 3 seconds 0 Feet and legs remain still				
2	4	POSITIONING REFLEX: Asymmetrical Tonic Neck Reflex (Integrated) *(Lying on back, head toward examiner)* Turn child's face so left cheek is parallel to surface. Hold his or her head in that position for 3 seconds and observe child's reaction. Repeat procedure to right side.	2 Does not move arms and legs as a result of head being turned 1 Arms and legs respond as described below, but can move arms and legs out of position while head is turned 0 Reflex still present [When face is turned left, left arm and leg extend while right arm and right leg flex. When face is turned right, right arm and right leg extend while left arm and left leg flex. Reflex disappears by 6 months.]				
3	6	LANDAU REACTION Hold child suspended horizontally, stomach toward floor, side toward you with your hands under his or her chest and stomach.	2 Raises head above horizontal plane, extends trunk, and symmetrically raises hips and legs into full extension 1 Extends head above plane and extends trunk but hips and legs remain below horizontal 0 Head and hips remain below horizontal				
4	6	PROTECTING REACTION—Forward [Either kneel on floor or stand facing table so when child is tilted forward, he or she can reach surface.] Hold child in suspended horizontal position, stomach parallel to floor, buttocks toward you, then quickly tilt child's head toward the surface.	2 Extends arms, straightens elbows, and bears weight on open palms 1 Extends arms or puts hands on surface, elbows bent, but doesn't bear weight 0 Fails to extend arms or put hands on surface				
5	6	PROTECTING REACTION—Side *(Sitting, back toward you)* With hands at hips, support child in sitting position, then quickly tilt child 45 degrees to one side.	2 Breaks fall by extending arm and supporting self with open palm for 2 seconds 1 Breaks fall by falling on forearm 0 Falls on side				
6	6	PROTECTING REACTION—Forward *(Sitting, back toward you)* With hands at hips, support child in sitting position, then quickly tilt child 45 degrees forward.	2 Breaks fall by extending one or both arms and supporting self with one or both open palms for 2 seconds 1 Extends one or both arms and falls forward 0 Fails to extend arms				
7	9	RIGHTING REACTION—Forward *(Sitting, back toward you)* Place your hands on child's shoulders and pull him or her backward 20 degrees from vertical. (Be prepared to catch child if no reaction occurs.)	2 Extends arms and head forward to recover balance and returns to upright sitting position 1 Extends arms forward and to floor to recover balance and returns to upright sitting position 0 Fails to extend arms or head forward				
8	10	PROTECTING REACTION—Backward *(Sitting, facing you)* Place your hands on child's chest and push gently and rapidly backward at least 45 degrees. (Have someone prepared to catch child or stop fall if no reaction occurs.)	2 Stops fall by extending arm(s) backward and supporting weight on open palm(s) 1 Rotates trunk to one side and extends arm but continues to fall 0 Fails to extend arms				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
		Stationary					
1 Start: 1–2 months	0	ROTATING HEAD *(Lying on stomach, head turned to side with cheek resting on surface; examiner out of eyesight)* Shake **rattle** 3 times behind child's head. Repeat procedure with opposite cheek resting on surface.	2 Lifts and turns head so opposite cheek touches surface (both sides) 1 Lifts and turns head so opposite cheek touches surface (1 side only) 0 Head remains as positioned				
2	0	ALIGNING TRUNK *(Sitting, facing you)* Support child in sitting position by holding his or her wrists and arms. Observe position of child's back.	2 Holds back in rounded position for 3 seconds 1 Holds back in rounded position for 1–2 seconds 0 Arches back immediately				
3	1	ALIGNING HEAD—Front *(Sitting, head hanging forward, back to you)* With hands around trunk, support child in sitting position. Observe head alignment in relation to trunk.	2 Holds head so that a 45-degree angle (or greater) exists between chin and chest 1 Holds head up slightly from chest 0 Chin touches chest				
4	1	ALIGNING HEAD—Back *(Lying on back, pulled to sitting)* Grasp child's hands and wrists and gently pull him or her to a sitting position. Observe head alignment during movement cycle and head position at end of cycle.	2 Holds head so that a 45-degree angle (or greater) exists between back of head and back 1 Holds head up slightly from back 0 Head touches back				
5 Start: 3 months	2	ALIGNING HEAD *(Lying on back, pulled to sitting)* Grasp child's hands and wrists and gently pull to a sitting position. Observe head alignment during movement cycle and head position at end of cycle.	2 Holds head in midline through 75%–100% of movement cycle 1 Holds head in midline through 50%–74% of movement cycle 0 Holds head in midline for less than 50% of cycle				
6	2	EXTENDING HEAD *(Held in a suspended vertical position with head toward ceiling, feet toward floor)* Pick child up (facing you) with your hands around trunk. Observe head alignment.	2 Raises head at midline and holds it in alignment for 3 seconds 1 Raises head at midline and holds it in alignment for 1–2 seconds 0 Head remains extended backward or flexed forward				
7 Start: 4–5 months	2	ALIGNING HEAD *(Held at shoulder)* Hold child at your shoulder with one hand under buttocks and other on child's back. (Head is not supported.) Gently bounce child up and down 3 times.	2 Holds head in midline for 2–3 bounces 1 Holds head in midline for 1 bounce 0 Fails to hold head in midline on each bounce				
8	3	ALIGNING HEAD *(Held in suspended vertical position with head toward ceiling, feet toward floor)* Pick child up (facing you) with your hands around trunk. Slowly tilt child 45 degrees to left of midline. Without pausing, return to midline and tilt 45 degrees to right. Return to midline. Observe alignment of child's head throughout cycle. (Count 4 seconds per segment of movement cycle: left, midline, right, midline.)	2 Holds head in alignment for 75%–100% of movement cycle 1 Holds head in alignment for 50%–74% of movement cycle 0 Holds head in alignment for less than 50% of cycle				
9	3	STABILIZING TRUNK *(Sitting)* Support child in sitting position (side toward you) by holding his or her hips. Child's hands can be placed on surface for additional support.	2 Holds trunk off legs in a 30-degree angle for 5 seconds 1 Holds trunk off legs in less than a 30-degree angle for 5 seconds 0 Trunk remains in contact with legs				

Item #	Age in Months	Item NAME, Position, and Description	Score Criteria	Administration 1	2	3	4
10 Start: 6 months	4	ALIGNING HEAD *(Sitting, supported with pillows around hips)* Dangle **toy on a string** 12 in. in front of child. Slowly move toy in 180-degree arc, from in front of child to his or her left side, back to front, and then to right side. (Count 4 seconds per segment of movement cycle: left, front, right, front.)	2 Holds head aligned for 8 seconds while rotating head to follow toy 1 Holds head aligned for 4–7 seconds while rotating head to follow toy 0 Holds head aligned for less than 4 seconds				
11	5	SITTING Place child in sitting position, hands on surface beside knees. When balance is secure, release child.	2 Maintains balance for 8 seconds 1 Maintains balance for 3–7 seconds 0 Maintains balance for less than 3 seconds				
12 Start: 7–9 months	6	SITTING/REACHING *(Sitting, pillows supporting hips)* Attract child's attention to **toy on a string** suspended at midline 12 in. in front of child's chest.	2 Maintains balance for 8 seconds while extending arms and hands to grasp toy 1 Maintains balance for 5–7 seconds while extending arms and hands to grasp toy 0 Maintains balance for less than 5 seconds				
13	6	PULLING TO SIT *(Lying on back, feet toward you)* Hold index fingers out, touching child's hands, if necessary, to get child to grasp them. Once fingers are grasped, say, "Get up." Pull your hands back so child's arms become straight.	2 Pulls up to sitting position 1 Pulls up 45–90 degrees from the surface 0 Pulls up less than 45 degrees or remains lying on surface				
14 Start: 10–11 months	6	SITTING Place child in sitting position and release your support.	2 Sits unsupported for 60 seconds 1 Sits unsupported for 30–59 seconds 0 Sits for less than 30 seconds				
15	7	SITTING WITH TOY Place child in sitting position and release your support. Place **toy** 12 in. in front of child. Say, "Get the toy."	2 Retrieves toy, returns to upright sitting, and maintains balance for 30 seconds 1 Retrieves toy, returns to upright sitting, and maintains balance for 15–29 seconds 0 Fails to retrieve toy, return to upright sitting, or maintain balance for 15 seconds				
16 Start: 12–15 months	9	SITTING Place child in sitting position and release your support. Give **toy** to child and say, "Play with the toy."	2 Maintains balance for 60 seconds while manipulating toy 1 Maintains balance for 30–59 seconds while manipulating toy 0 Maintains balance for less than 30 seconds				
17	10	RAISING TO SIT *(Lying on back)* Place child on back on floor. Attract child's attention to **toy** and then place it on chair where child can see it. Say, "Get the toy."	2 Pulls up to sitting position, using chair for support 1 Grasps chair and rotates body in effort to raise up 0 Remains lying on floor				
18	10	SITTING UP *(Lying on stomach)* Place child on stomach on floor. Attract child's attention to **toy**; then hold toy out of child's reach, about 2 ft. above floor. Say, "Get the toy."	2 Raises to sitting position 1 Attempts to maneuver into sitting position 0 Remains lying on floor				
19 Start: 16–26 months	13	KNEELING Place child in a kneeling position, buttocks not resting on heels. Keeping toy at child's eye level and about 2 ft. away, move it in arc to one side of child. Say, "Watch the **toy**." Return toy to starting position and then move it in arc to other side. (Take about 4 seconds for each segment of movement cycle: front to left, left to front, front to right, right to front.)	2 Maintains balance for 5 seconds while rotating head 1 Maintains balance for 2–4 seconds 0 Maintains balance for less than 2 seconds				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
20 Start: 27–48 months	31–32	STANDING ON 1 FOOT Stand on 1 foot, hands on hips with free leg bent back at knee. Say, "Put your hands on your hips and stand on 1 foot like I did."	2 Stands on 1 foot with hands on hips for 3 seconds 1 Stands on 1 foot with hands on hips for 1–2 seconds 0 Requires help to stand on 1 foot				
21	41–42	STANDING ON 1 FOOT Stand on 1 foot, hands on hips with free leg bent back at knee. Say, "Put your hands on your hips and stand on 1 foot like I did."	2 Stands on 1 foot with hands on hips for 5 seconds 1 Stands on 1 foot with hands on hips for 2–4 seconds 0 Stands on 1 foot for less than 2 seconds				
22 Start: 49–66 months	43–44	STANDING ON TIPTOES Stand on tiptoes with hands held overhead for 3 seconds. Say, "Hold your hands over your head and stand on your tiptoes like I did."	2 Stands on tiptoes with arms held overhead and without moving feet for 3 seconds 1 Stands on tiptoes with arms held overhead and without moving feet for 1–2 seconds 0 Moves feet or heels remain on floor				
23	45–46	STANDING ON 1 FOOT Stand on 1 foot, hands on hips with free leg bent back at knee for 5 seconds. Say, "Put your hands on your hips and stand on 1 foot like I did."	2 Stands on 1 foot with hands on hips and without swaying more than 20 degrees for 5 seconds 1 Stands on 1 foot with hands on hips and without swaying more than 20 degrees for 2–4 seconds 0 Stands on 1 foot for less than 2 seconds or sways more than 20 degrees				
24 Start: 57–71 months	51–52	STANDING ON TIPTOES Stand on tiptoes with hands held overhead for 8 seconds. Say, "Hold your hands over your head and stand on your tiptoes like I did for as long as you can."	2 Stands on tiptoes with arms held overhead, without moving feet, and without swaying more than 20 degrees for 8 seconds 1 Stands on tiptoes with arms held overhead, without moving feet, and without swaying more than 20 degrees for 5–7 seconds 0 Stands on tiptoes for less than 5 seconds or sways more than 20 degrees				
25	53–54	STANDING ON 1 FOOT Stand on 1 foot with hands on hips for 10 seconds, then on other foot for 10 seconds. Say, "Put your hands on your hips and stand on each foot like I did." Count seconds out loud to encourage child to balance longer.	2 Stands on 1 foot, then on other foot, with hands on hips and without swaying more than 20 degrees for 6 seconds on each foot 1 Stands on one foot, then on other foot, with hands on hips and without swaying more than 20 degrees for 1–5 seconds on each foot 0 Stands on only 1 foot (does not change feet) or sways more than 20 degrees				
26	57–58	IMITATING MOVEMENTS *(Standing)* Stand 3 feet from child. Say, "I am going to move my arms and I want you to copy my movements." Do practice move (one not on test) to see if child understands. Do not use verbal cues. Present 6 positions one at a time at 1-second intervals.	2 Imitates 4 positions accurately 1 Imitates 1–3 positions accurately 0 Fails to imitate any position accurately				
27	59–60	STANDING ON 1 FOOT Stand on 1 foot with hands on hips for 10 seconds, then on the other foot for 10 seconds. Say, "Put your hands on your hips and stand on 1 foot and then the other like I did." Count seconds out loud to encourage child to balance longer.	2 Stands on each foot with hands on hips and without swaying more than 20 degrees for 10 seconds 1 Stands on each foot with hands on hips and without swaying more than 20 degrees for 5–9 seconds 0 Stands on each foot for less than 5 seconds, sways more than 20 degrees, or stands on only 1 foot				

Item #	Age in Months	Item NAME, Position, and Description	Score Criteria	Administration 1	2	3	4
28	59–60	SIT-UPS *(Lying down on mat)* Demonstrate sit-ups on mat. Place child in starting position on mat. Hold child's feet and say, "Do as many sit-ups as you can." Stop child after 30 seconds.	2 Completes 3 sit-ups in 30 seconds 1 Completes 1–2 sit-ups in 30 seconds 0 Fails to complete any sit-ups				
29	68–72	SIT-UPS *(Lying down on mat)* Demonstrate sit-ups on mat. Place child in starting position on mat. Hold child's feet and say, "Do as many sit-ups as you can." Stop child after 30 seconds.	2 Completes 5 sit-ups in 30 seconds 1 Completes 3–4 sit-ups in 30 seconds 0 Completes less than 3 sit-ups				
30	72	PUSH-UPS *(Lying face down on mat)* Demonstrate 3 push-ups. Say, "Do as many push-ups as you can." Stop child after 20 seconds.	2 Completes 8 push-ups in 20 seconds 1 Completes 4–7 push-ups in 20 seconds 0 Completes less than 4 push-ups				
		Locomotion					
1 Start: 1–2 months	0	THRUSTING LEGS *(Lying on back)* Stimulate leg thrusts by holding child's feet and pushing them toward his or her body so knees are flexed, legs bent, and heels almost touching buttocks. Then pull child's feet out until legs are fully extended. Repeat motions. Let go of child's feet. Observe for more than 1 minute.	2 Bends and straightens legs (alternately or together) 2 times 1 Bends and straightens legs (alternately or together) 1 time or moves only 1 leg 0 Does not move legs				
2	0	TURNING FROM SIDE TO BACK *(Lying on side, legs bent to maintain balance, examiner in back of child)* Shake **rattle** 3 times behind child's back. Repeat procedure with child lying on opposite side.	2 Rolls onto back (both sides) 1 Rolls onto back (1 side only) 0 Remains on side				
3	0	THRUSTING ARMS *(Lying on back)* Stimulate arms by bringing child's hands together at midchest with elbows bent. Then stretch arms out to sides until elbows are straight and hands touch surface. Repeat. Let go of child's hands. Observe for 1 minute.	2 Bends and straightens arms (alternately or together) 2 times 1 Bends and straightens arms (alternately or together) 1 time or moves only 1 arm 0 Does not move arms				
4	2	BEARING WEIGHT *(Standing)* Hold child in a standing position facing you with his or her feet resting on table or counter top. Observe leg position and whether child can bear weight for 3 seconds.	2 Bears weight with knees flexed and feet flat for 3 seconds 1 Bears weight with knees flexed and toes touching surface for 3 seconds or with knees flexed and feet flat for 1–2 seconds 0 Fails to bear weight or legs remain straight with only toes touching surface				
5 Start: 3–4 months	2	EXTENDING TRUNK *(Lying on stomach, head turned to side, forearms resting on surface)* Attract child's attention by shaking **rattle** 1 in. above surface. Continue to shake rattle and move it 6 in. above child's head.	2 Elevates head and upper trunk 45 degrees, bearing weight on forearms or hands for 3 seconds 1 Elevates head and upper trunk 45 degrees, bearing weight on forearms or hands for 1–2 seconds 0 Elevates head less than 45 degrees				
6	3	SYMMETRICAL POSTURE *(Lying on back; feet toward you)* Shake **rattle** 18 in. from child's nose and then move it to within 12 in.	2 Brings both hands together at midline within 5 seconds (hands come up together) while maintaining midline head and body posture 1 Brings 1 hand to midline and moves the other out of midline while maintaining midline head and body posture 0 Hands remain out of midline position				

Item #	Age in Months	Item NAME, Position, and Description	Score Criteria	Administration 1	2	3	4
7 Start: 5 months	4	PROPPING ON FOREARMS *(Lying on stomach, chin and forearms resting on surface)* Attract child's attention to **toy on a string** and then suspend it 12 in. above child's face.	2 Elevates head and upper trunk 45 degrees and bears weight on forearms for 5 seconds 1 Elevates head and upper trunk 45 degrees and bears weight on forearms for 3–4 seconds 0 Elevates head and upper trunk, bearing weight for less than 3 seconds, or fails to elevate trunk				
8	4	ROLLING *(Lying on back, feet toward you)* Shake **rattle** at midline 12 in. above child's face. Slowly move rattle in arc toward surface. Repeat procedure to other side.	2 Rolls to side with opposite arm crossing midline (both sides) 1 Rolls to side with opposite arm crossing midline (one side only) 0 Remains on back				
9 Start: 6 months	4	EXTENDING ARMS AND LEGS *(Lying on stomach, head toward you)* Attract child's attention to **toy on a string** that you dangle at midline 12 in. from child's head. Observe child's arms and legs for 5 seconds.	2 Extends arms and legs (alternately or together) off surface for 3 seconds 1 Extends arms and legs (alternately or together) off surface for 1-2 seconds, or moves only arms or legs for 3 seconds 0 Arms and legs remain inactive				
10	5	FLEXING LEGS *(Lying on back, bare feet)* If child has socks on, remove them and then gently bend both legs toward child's face, wiggle and then release them.	2 Brings feet to mouth for play or grabs feet with hands (both feet must come up, alternately or together) 1 Raises feet 90 degrees or less or brings 1 foot to mouth 0 Legs remain on surface				
11	5	EXTENDING ARMS AND LEGS *(Lying on back, head in midline)* Attract child's attention to **toy on a string** that you dangle at midline 12 in. from child's head. Observe child's arms and legs for 5 seconds.	2 Raises arms and legs (alternately or together) in smooth, fluid movements within 5 seconds after toy is presented 1 Raises arms and legs (alternately or together) within 6–7 seconds after toy is presented 0 Arms and legs remain inactive				
12	6	EXTENDING ARM *(Lying on stomach, chin and forearms resting on surface)* Attract child's attention to **toy on a string** just out of reach. Say, "Get the toy."	2 Raises upper trunk, shifts weight to side, lifts free arm, and reaches toward toy 1 Raises upper trunk, shifts weight to side, and lifts free arm without reaching toward toy 0 Both arms remain in contact with surface				
13 Start: 7 months	6	FLEXING BODY *(Lying on back, bare feet)* Gently bend both legs toward head 3 times. Do not place feet in child's hands, but encourage child to grasp them by saying, "Get your feet."	2 Grasps both feet and holds them for 3 seconds 1 Grasps both feet and holds them for 1–2 seconds or grasps 1 foot and holds it for 3 seconds 0 Legs remain on surface				
14	6	PUSHING UP *(Lying on stomach, head turned to side, forearms resting on surface)* Attract child's attention to **rattle.** Shake rattle 12 in. in front of child's forehead and 6 in. above child's head.	2 Elevates head and stomach by pushing up with arms, bearing weight on palms for 5 seconds 1 Elevates head and stomach by pushing up with arms, bearing weight on palms for 3–4 seconds 0 Bears weight for less than 3 seconds				
15	6	EXTENDING ARM *(Lying on back)* Shake **toy on a string** and then hold it 12 in. to right of child's head and 12 in. above surface. Repeat procedure to opposite side.	2 Shifts weight to side and supports self with arm for 3 seconds while extending opposite arm to reach for toy (both sides) 1 Shifts weight to side and supports self with arm for 1–2 seconds while extending opposite arm to reach for toy (1 or both sides) 0 Remains on back				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
16	7	ROLLING *(Lying on back)* Shake **rattle** at midline 12 in. above child. Lower rattle to surface on child's left, out of child's reach. Repeat procedure on opposite side.	2 Rolls from back to stomach (both sides) 1 Rolls from back to stomach (1 side only) 0 Remains on back				
17 Start: 8 months	7	ROLLING *(Lying on back)* Attract child's attention to **toy** by shaking it to side of child. Repeat procedure on opposite side.	2 Rolls from back to stomach, leading with hips and thighs, followed by stomach and then shoulders (both sides) 1 Rolls from back to stomach (1 side only) 0 Remains on back				
18 Start: 9 months	8	MOVING FORWARD *(Lying on stomach)* Place **toy** 5 ft. in front of child. Say, "Get the toy."	2 Moves forward 3 ft. using arms 1 Moves forward at least 2 ft. but less than 3 ft. using arms 0 Moves less than 2 ft.				
19 Start: 10 months	9	RAISING SHOULDERS AND BUTTOCKS *(Lying on stomach)* Sit 3 ft. in front of child. Hold your hands out to child and say, "Come here."	2 Raises and bears weight on hands and knees for 5 seconds and rocks back and forth for 2 cycles 1 Raises and bears weight on hands and knees for 1–5 seconds 0 Remains on stomach				
20	9	CREEPING *(Hands and knees)* Place **toy** on floor 6 ft. in front of child. Say, "Get the toy." Move toy back as child approaches.	2 Creeps forward on hands and knees, using a cross-lateral pattern (opposite arms and legs moving together) for 5 ft. 1 Creeps forward on hands and knees using cross-lateral pattern for 4 ft. or creeps without using cross-lateral pattern for 5 ft. 0 Remains stationary or moves on stomach				
21	9	SCOOTING *(Sitting)* Sit beside child on floor. Say, "Watch me." Demonstrate scooting by using your hands to propel your body forward on your buttocks to retrieve toy. Place **toy** 5 ft. in front of child. Say, "Scoot like I did and get the toy."	2 Maintains sitting posture and uses hands and legs to scoot forward 3 ft. 1 Maintains sitting posture and scoots forward 1–2 ft. 0 Moves less than 1 ft. forward				
22 Start: 11 months	9	PIVOTING *(Sitting)* Place child in sitting position on floor. Attract child's attention to **toy**, then place it 2 ft. from child's right side. Say, "Turn and get the toy." Repeat procedure on opposite side.	2 Turns on buttocks using legs or arms to pivot body 90 degrees (both sides) 1 Turns on buttocks using legs or arms to pivot body 90 degrees (1 side only) 0 Pivots less than 90 degrees				
23	9	STANDING *(Sitting next to stable object, such as chair or table)* Attract child's attention to **toy**, then place it on edge of stable object, out of child's reach. Say, "Get the toy."	2 Raises to standing position using stable object for support 1 Attempts to raise to standing, but returns to sitting 0 Makes no attempt to stand				
24	10	CREEPING *(Sitting on floor to one side of you)* Sit with legs straight and knees touching. Attract child's attention to **toy**, then place toy on the other side of your legs so child will have to climb across your legs to retrieve it. Say, "Get the toy."	2 Creeps completely over your legs 1 Creeps onto your legs 0 Remains stationary or creeps up to your legs				
25	10	BOUNCING *(Standing)* Have child hold your index fingers. Stimulate bouncing by moving your hands up and down 2 times.	2 Bounces 3 times by flexing knees 1 Bounces 1–2 times by flexing knees 0 Stiffens legs or sits down				
26 Start: 12 months	10	CRUISING *(Standing next to low table)* Place child in standing position at end of table. Place **toy** on opposite end of table. Say, "Get the toy."	2 Takes 4 steps sideways (holding on to table) 1 Takes 1–3 steps sideways (holding on to table) 0 Remains stationary				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
27	10	LOWERING Place child in standing position with side next to stable object (chair or low table) for support. Place **toy** on floor in front of child. Say, "Sit down and play with the toy."	2 Lowers to sitting position without falling 1 Lowers self, but falls in process 0 Remains standing				
28	10	STEPPING With child facing you, support child in standing position with your hands around trunk. Say, "Let's walk."	2 Takes 4 alternating steps in place or forward 1 Takes 2–3 alternating steps in place or forward 0 Fails to take alternating steps				
29 Start: 13 months	11	PIVOTING Place child in sitting position straddling one line of **taped 3 × 3 ft. cross.** Attract child's attention to **toy**, then place it on line 2 ft. behind child. Say, "Turn and get the toy."	2 Pivots 180 degrees (straddles line in opposite direction), while remaining seated 1 Pivots 90–179 degrees (body midline fails to straddle line), while remaining seated 0 Pivots less than 90 degrees				
30	11	STANDING Place child in standing position next to stable object (chair or low table). Stand 4 ft. in front of child with your arms outstretched. Say, "Come here."	2 Frees hands and body from support and maintains balance in standing position for 5 seconds 1 Frees hands and body from support and maintains balance in standing position for 2–4 seconds 0 Fails to release support				
31	11	STANDING Place child in standing position away from anything that can be used for support. Release your support of child. (Be ready to catch child if necessary.)	2 Maintains balance for 3 seconds before showing instability or dropping to floor 1 Maintains balance for 1–2 seconds before showing instability or dropping to floor 0 Immediately shows signs of instability or drops to floor				
32	11	STEPPING From in front, support child in standing position by holding 1 hand. Say, "Let's walk."	2 Takes 4 alternating steps in place or forward 1 Takes 2–3 alternating steps in place or forward 0 Fails to take alternating steps				
33 Start: 14 months	12	STANDING UP *(Sitting cross-legged on floor)* Demonstrate standing up from sitting position. Place palms of hands on floor beside hips. Push down with hands, straighten arms, and shift weight to feet. Stand up without turning body more than 20 degrees to either side. Say, "Get up like I did."	2 Stands without turning body more than 20 degrees 1 Stands but turns body 21–90 degrees 0 Turns body more than 90 degrees or fails to stand				
34	12	WALKING *(Standing)* From the side, support child by holding 1 hand. Say, "Let's walk."	2 Uses alternating steps to walk 8 ft. 1 Uses alternating steps to walk 4–7 ft. 0 Walks less than 4 ft.				
35	12	WALKING *(Standing)* Hold **toy** 2 ft. in front of child. Say, "Come get the toy." Move back as needed to keep toy just out of reach.	2 Walks unaided for 5 steps 1 Walks unaided for 1–4 steps 0 Remains stationary or sits down				
36	13	STANDING AND MOVING BALANCE *(Standing)* Place **toy** on floor 2 ft. in front of child. Say, "Get the toy and bring it to me."	2 Picks up toy, returns to standing, and takes 3 steps without losing balance 1 Picks up toy, returns to standing, and takes 1–2 steps before losing balance 0 Remains stationary or loses balance when picking up toy				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
37 Start: 15–16 months	14	CREEPING UP STAIRS *(Sitting on floor, facing stairs)* Place **toy** on 3rd step. Say, "Get the toy." Move toy up as child gets closer. (Be prepared to catch child if necessary.)	2 Creeps up 2 steps on hands and knees 1 Creeps up 1 step on hands and knees 0 Remains on 1st step				
38	14	WALKING Stand 10 ft. in front of child and hold your arms out. Say, "Come to me." **[Record the time it takes to walk 10 ft. for use in Item 41.]** _____ Time to walk 10 ft.	2 Walks 10 ft. with narrow base of support, heel–toe gait, using a reciprocal pattern for at least half the distance 1 Walks 4–9 ft. with narrow base of support, heel–toe gait, using a reciprocal pattern for at least half the distance 0 Walks with wide base of support (feet positioned at shoulder width) and/or arms held out to sides, parallel to surface				
39 Start: 17–18 months	15–16	CREEPING DOWN STAIRS *(On stairs, knees on 4th step, hands on 5th step)* Stand 2 or 3 steps below child. Say, "Come to me." Move backward as necessary.	2 Creeps backward down 3 steps without support (from adult or rail) 1 Creeps backward down 1–2 steps without support (from adult or rail) 0 Remains on 4th step				
40	15–16	WALKING UP STAIRS *(Standing, facing flight of stairs, close to railing or wall)* Place **toy** on 6th step. Get behind child and say, "Walk up the steps and get the toy."	2 Walks up 4 steps with support from wall or rail (may place 1 or both feet on each step) 1 Walks up 1–3 steps with support from wall or rail 0 Remains stationary or drops to hands and knees to ascend steps				
41 Start: 19–20 months	17–18	WALKING FAST Run away from child and say, "Catch me!" _____ Record time to walk 10 ft. _____ Time recorded in Item 38	2 Walks 10 ft. in ½ the time recorded in Item 38 1 Walks 10 ft. in more than ½ but less than ¾ of the time recorded in Item 38 0 Walks 10 ft. in ¾ or more of the time recorded in Item 38				
42	17–18	WALKING BACKWARD Walk backward while pulling **pull toy**. Give cord to child and say, "You pull it like I did."	2 Walks backward 5 steps (may or may not pull toy while walking) 1 Walks backward 2–4 steps 0 Takes less than 2 steps backward				
43 Start: 21–22 months	17–18	WALKING DOWN STAIRS *(Standing on 4th step, next to wall or railing, facing down)* Stand beside child and offer him or her your finger. Say, "Let's walk down the steps."	2 Walks down 4 steps with support only from examiner's finger (may place 1 or both feet on each step) 1 Walks down 1–3 steps with support only from examiner's finger 0 Remains stationary or lowers to sitting to descend steps				
44 Start: 23–24 months	17–18	WALKING BACKWARD Demonstrate walking backward using a normal stride (heels not touching toes). Say, "Walk backward like I did."	2 Walks backward 5 steps 1 Walks backward 2–4 steps 0 Walks backward less than 2 steps				
45	19–20	RUNNING Stand 12 ft. in front of child. Say, "Run to me as fast as you can."	2 Runs forward 10 ft. 1 Runs forward 5–9 ft. 0 Walks or runs less than 5 ft.				
46	19–20	STANDING **Taped line (2 in. × 2 ft.)** Stand on line with 1 foot in front of other, toe of back foot touching heel of front foot. Say, "Stand on the line like I did."	2 Stands on line with 1 foot in front of other for 2 seconds; toe of back foot is within 3 in. of front foot 1 Places 1 foot on line and attempts to place other foot on line 0 Makes no attempt to place 2nd foot on line				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
47 Start: 25–26 months	21–22	WALKING SIDEWAYS Face child and say, "Watch me." Step sideways, leading with same foot, for 10 ft. Say, "Walk like I did."	2 Walks sideways for 10 ft., leading with same foot 1 Walks sideways 4–9 ft., leading with same foot for half the steps 0 Remains stationary or walks in a manner other than sideways				
48	21–22	WALKING LINE **Taped line (4 in. × 8 ft.)** Walk on the line with 1 foot on line and other foot beside it. Say, "Walk on the line like I did."	2 Walks with 1 foot on line for 6 ft. 1 Walks with 1 foot on line for 4–5 ft. 0 Walks for less than 4 ft. on line				
49	23–24	JUMPING FORWARD **Taped line on floor (2 in. × 2 ft.)** Using 2-footed takeoff and landing, jump forward 12 in. from starting line. Say, "Jump like I did." Measure distance from line to point where nearest heel touches floor.	2 Jumps forward 4 in., maintaining balance 1 Jumps less than 4 in. forward, maintaining balance 0 Steps forward or falls				
50	23–24	JUMPING UP Demonstrate jumping up with your feet together, knees flexed, and body propelled upward. Say, "Jump like I did."	2 Jumps up 2 in. with feet together 1 Jumps up with feet barely leaving floor, or jumps up 2 in. with 1 foot leading the other 0 Keeps toes in contact with floor				
51 Start: 27–30 months	23–24	JUMPING DOWN *(Standing on step 7 in. high)* Stand in front of child and say, "Jump down."	2 Jumps down without assistance; 1 foot may lead 1 Steps down without assistance 0 Needs assistance to get down				
52	23–24	WALKING UP STAIRS *(Standing, facing flight of stairs, at middle of step width)* Place **toy** on 6th step. Say, "Walk up the steps without holding on."	2 Walks up 4 steps without support from wall or rail (may place 1 or both feet on each step) 1 Walks up 4 steps using rail or wall for support 0 Remains stationary or drops to hands and knees to ascend stairs				
53	25–26	WALKING DOWN STAIRS *(Standing on 4th step, facing down stairs, next to wall or railing)* Stand 2 steps below child. Say, "Walk down to me." Move down as child begins to descend.	2 Walks down 4 steps without support by placing 1 or both feet on each step 1 Walks down 1–3 steps without support 0 Remains stationary or uses wall or rail for additional support				
54	25–26	WALKING BACKWARD Demonstrate walking backward 10 ft. using a normal backward stride (without touching heels to toes). Say, "Walk backward like I did."	2 Walks backward 10 ft. without heels touching toes 1 Walks backward 1–9 ft. 0 Walks backward less than 1 ft.				
55	25–26	JUMPING UP *(Standing next to wall)* **Mark on wall at standing reach and line 2 in. higher** Demonstrate jumping up and touching wall as high as you can. Point to line and say, "Jump up and touch as high as you can."	2 Jumps up and touches line or above 1 Jumps up and touches between mark and line 0 Keeps toes in contact with floor or fingers touch below mark				
56	27–28	WALKING LINE **Taped line (4 in. × 8 ft.)** Using a normal stride (heels not touching toes), walk forward 3 steps on line. Say, "Keep your hands on your hips and walk on the line like I did."	2 Takes 3 steps forward on line with hands on hips and without heels touching toes 1 Takes 1–2 steps forward on line with hands on hips and without heels touching toes 0 Walks with one foot off the line				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
57 Start: 31–34 months	27–28	WALKING UP STAIRS *(Standing at foot of stairs)* Get behind child and say, "Walk up the steps."	2 Walks up 4 steps, placing 1 foot on each step, using wall or rail for support 1 Walks up 1–3 steps, placing 1 foot on each step, using wall or rail for support 0 Remains stationary or places both feet on each step and uses support				
58	29–30	JUMPING DOWN *(Standing on stable object 16–21 in. high)* Say, "Jump down."	2 Jumps down without assistance, 1 foot may lead 1 Steps down without assistance 0 Needs assistance to get down				
59	29–30	WALKING ON TIPTOES Walk on tiptoes with your hands on hips for 5 steps. Say, "Keep your hands on your hips and walk on your tiptoes like I did."	2 Walks on tiptoes for 5 steps with hands on hips and without heels touching floor 1 Walks on tiptoes for 1–4 steps with hands on hips and without heels touching floor 0 Walks with heels touching floor				
60 Start: 35–38 months	29–30	RUNNING SPEED With **taped lines (2 in. × 2 ft.) 30 ft. apart**, place child with toes behind starting line. Stand 1 yd. behind finish line and say, "Run to me as fast as you can." Time from when child starts running to when he or she crosses finish line.	2 Runs 30 ft. in 6 seconds or less 1 Runs 30 ft. in 7–9 seconds 0 Walks or runs 30 ft. in more than 9 seconds				
61	31–32	JUMPING FORWARD *(Standing with toes on line)* **Taped line (2 in. × 2 ft.)** Demonstrate jumping forward using 2-footed takeoff and landing. Say, "Jump like I did."	2 Jumps forward 24 in. using 2-footed takeoff and landing 1 Jumps forward 12–23 in. using 2-footed takeoff and landing 0 Jumps forward less than 12 in., steps forward, or falls				
62	31–32	JUMPING DOWN *(Standing on stable object 18–24 in. high)* Say, "Jump down with both feet together."	2 Jumps down without assistance using 2-footed takeoff and landing 1 Jumps down, taking off with 1 foot and landing on both feet without assistance, or takes off with 2 feet and falls on landing 0 Needs assistance to get down				
63	33–34	JUMPING HURDLES **String (or rope) tied between 2 chair legs, 2 in. off floor and 3 ft. apart** (Tie loosely to prevent tripping.) Stand 6 in. away from and facing string. Using 2-footed takeoff and landing, jump over string. Say, "Jump over the string like I did."	2 Jumps over string without tripping using 2-footed takeoff and landing 1 Jumps over string without tripping using 1-footed takeoff and landing 0 Steps over, or jumps but remains on same side				
64 Start: 39–42 months	33–34	WALKING ON TIPTOES **Taped line (4 in. × 8 ft.)** Walk on tiptoes, hands on hips, for entire length of line. Say, "Keep your hands on your hips and walk on your tiptoes like I did."	2 Walks on tiptoes for entire length of line with hands on hips and without heels touching floor 1 Walks on tiptoes for 1–7 ft. with hands on hips and without heels touching floor 0 Walks on tiptoes for less than 1 ft. on line				
65 Start: 43–45 months	35–36	WALKING UP STAIRS *(Standing centered at foot of stairs)* Place a **toy** on the 6th step. Stand behind child and say, "Walk up the steps and get the toy."	2 Walks up 4 steps without support, placing 1 foot on each step 1 Walks up 1–3 steps with support from wall or rail and placing 1 foot on each step, or walks up 4 steps without support but placing both feet on each step 0 Remains stationary or places both feet on each step and uses support				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
66	37–38	RUNNING SPEED **Taped lines (2 in. × 2 ft.) 45 ft. apart** Place the child within 6 in. behind a taped line on the floor and then stand 3 ft. behind finish line. Say, "Run to me as fast as you can without stopping."	2 Runs 45 ft. in 6 seconds or less 1 Runs 45 ft. in 7–9 seconds 0 Walks or runs 45 ft. in more than 9 seconds				
67	39–40	JUMPING FORWARD **Taped line (2 in. × 2 ft.)** Demonstrate jumping forward using a 2-footed takeoff and landing. Say, "Jump like I did."	2 Jumps forward 26 in. using 2-footed takeoff and landing 1 Jumps forward 12–25 in. using 2-footed takeoff and landing 0 Jumps forward less than 12 in. or falls				
68 Start: 46–50 months	41–42	WALKING LINE **Taped line (4 in. × 8 ft.)** Using a normal stride (heels not touching toes), walk forward on line. Say, "Keep your hands on your hips and walk on the line like I did. Try not to step off the line."	2 Walks forward 4 ft. without stepping off line, with hands on hips and without heels touching toes 1 Walks forward 4 ft. on line, stepping off 1 time, with hands on hips and without heels touching toes 0 Steps off line more than once				
69	41–42	RUNNING FORM Say, "When I say go, run fast and keep running until I say stop." Stop child after 10 seconds.	2 Runs with arms moving back and forth across body and at or below waist, balls of feet used to push forward, toes pointed forward, a high knee and heel lift, and trunk leaning forward 1 Runs with arms held out to side, or feet remain flat during the run 0 Walks at any time during 10-second period				
70	41–42	WALKING LINE FORWARD **Taped line (4 in. × 8 ft.)** Using a normal stride (heels not touching toes) and with hands on hips, walk forward on line. Say, "Keep your hands on your hips and walk on the line like I did. Try not to step off the line."	2 Walks forward 8 ft. on line without stepping off, with hands on hips, without heels touching toes, and without swaying more than 20 degrees 1 Walks forward 8 ft. on line and steps off 1 time, with hands on hips, without heels touching toes, and without swaying more than 20 degrees 0 Steps off line more than once or sways more than 20 degrees				
71	43–44	WALKING DOWN STAIRS *(Standing on 4th step, facing down stairs)* Stand 2 or more steps below child and say, "Walk down the steps without holding on." Move down as child descends.	2 Walks down 4 steps, placing 1 foot on each step without support 1 Walks down 4 steps, placing both feet on 1 or 2 steps without support 0 Remains stationary or places both feet on each step for 3 or more steps				
72 Start: 51–54 months	43–44	JUMPING FORWARD ON 1 FOOT **Taped line (2 in. × 2 ft.)** Jump forward on 1 foot without letting other foot touch floor. Say, "Jump forward like I did." Measure from line to point where back of heel touches floor.	2 Jumps forward 6 in. on 1 foot without other foot touching floor 1 Jumps forward 2–5 in. on 1 foot without other foot touching floor 0 Jumps less than 2 in. or 2nd foot touches floor				
73	45–46	JUMPING UP *(Standing next to wall)* **Mark on wall at standing reach and line (2 in. × 1 ft.) 3 in. higher** Demonstrate jumping up and touching wall as high as you can. Point to line and say, "Jump and touch as high as you can."	2 Jumps up and touches line or above 1 Jumps up and touches between mark and line 0 Toes remain in contact with floor or fingers touch mark or below				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
74	45–46	RUNNING BALANCE/COORDINATION Demonstrate running and stopping on command. Say, "When I say go, run until I say stop. Then stop as quickly as you can. Stay still until I say go. Then run until I say stop." Stop child after 3 cycles.	2 Runs and stops within 2 steps without falling 1 Runs and stops in 3 or more steps without falling 0 Fails to run or takes more than 3 steps to stop				
75 Start: 55–58 months	45–46	WALKING LINE BACKWARD **Taped line (4 in. × 8 ft.)** Using normal stride (heels not touching toes) and with hands on hips, walk backward on line. Say, "Put your hands on your hips and walk backward like I did."	2 Walks backward 4 ft. without stepping off line more than once, with hands on hips, and without heels touching toes 1 Walks backward 4 ft. on line and steps off 2–5 times with hands on hips and without heels touching toes 0 Steps off line more than 5 times				
76	47–48	JUMPING FORWARD **Taped line (2 in. × 2 ft.)** Demonstrate jumping forward using a 2-footed takeoff and landing. Say, "Jump like I did." Measure from line to point where back of nearest heel touches floor.	2 Jumps forward 30 in. using 2-footed takeoff and landing 1 Jumps forward 20–29 in. using 2-footed takeoff and landing 0 Jumps forward less than 20 in. or falls				
77	47–48	HOPPING Hop forward on 1 foot for 5 hops, then on other foot for 5 hops. Say, "Hop like I did."	2 Hops forward 5 hops on 1 foot, then 3–5 hops on other foot 1 Hops forward 1–4 hops on 1 foot, 1–2 hops on other foot 0 Hops in place, or foot fails to leave ground				
78	51–52	WALKING LINE BACKWARD **Taped line (4 in. × 8 ft.)** With toes touching heels and hands on hips, walk backward on line. Say, "Put your hands on your hips and walk backward touching your heels with your toes like I did. Try not to step off the line."	2 Walks backward 5 steps without stepping off line and with hands on hips and toes touching heels 1 Walks backward 2–4 steps without stepping off line and with hands on hips and toes touching heels 0 Takes less than 2 steps backward				
79	51–52	ROLLING FORWARD *(Crouching on edge of mat)* Demonstrate forward roll. Place child on edge of mat in crouching position. Say, "Turn a forward roll like I did."	2 Completes forward roll without turning more than 15 degrees to either side 1 Completes forward roll but turns more than 15 degrees to either side 0 Fails to complete forward roll				
80 Start: 59–62 months	51–52	GALLOPING Gallop 8–10 ft. (same foot leading). Say, "Gallop like I did."	2 Gallops 10 ft. with weight transferred smoothly and evenly; arms move freely in opposition to legs 1 Gallops 5–9 ft. with weight transferred smoothly and evenly; arms move freely in opposition to legs 0 Gallops less than 5 ft.				
81	53–54	JUMPING FORWARD **Taped line (2 in. × 2 ft.)** From taped starting line, demonstrate jumping forward using 2-footed takeoff and landing. Say, "Jump like I did as far as you can."	2 Jumps forward 36 in. using 2-footed takeoff and landing 1 Jumps forward 20–35 in. using 2-footed takeoff and landing 0 Jumps forward less than 20 in. or falls				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
82	53–54	TURNING JUMP *(Standing with hands on hips, feet 2–4 in. on either side of line)* **Taped line (2 in. × 2 ft.)** With body not deviating more than 20 degrees from vertical, jump and turn 180 degrees. Land with feet opposite original position. Say, "Jump and turn in the air like I did."	2 Jumps and turns so feet land in opposite direction from starting position with hands on hips and body not deviating more than 20 degrees from vertical 1 Jumps and turns at least 90 degrees but less than 180 degrees with hands on hips and body not deviating more than 20 degrees from vertical 0 Turns less than 90 degrees				
83 Start: 63–71 months	53–54	HOPPING FORWARD **2 taped lines (2 in. × 2 ft.), 3 ft. apart** Hop on 1 foot from one line to other, change feet, and hop back to first line. Say, "Hop like I did." If necessary, remind child to change feet when hopping back.	2 Hops on 1 foot from one line to other, changes feet, and hops back to 1st line 1 Hops on 1 foot from one line to other, changes feet, and hops 1–2 hops toward 1st line 0 Hops in place or fails to hop to line				
84	57–58	JUMPING HURDLES **String (or rope) tied between 2 chair legs, 3 ft. apart, 10 in. off floor** (Tie loosely to prevent tripping.) Stand 6 in. away from and facing string. Using 2-footed takeoff and landing, jump over string. Say, "Jump over the string like I did."	2 Jumps over string without tripping using 2-footed takeoff and landing 1 Jumps over string without tripping using 1-footed takeoff and landing 0 Steps over string or jumps but remains on same side				
85	57–58	RUNNING SPEED AND AGILITY **2 taped lines (2 in. × 2 ft.), 10 ft. apart; empty soft drink can** Place can on one line. Have child stand just behind other line. Say, "When I say go, run as fast as you can, pick up the can, and bring it back across the starting line." (Allow 30 seconds of rest between trials.)	2 Completes cycle in 5 seconds or less without tripping or dropping can 1 Completes cycle in 6–10 seconds without tripping or dropping can 0 Takes more than 10 seconds to return to starting line				
86	57–58	SKIPPING Demonstrate skipping for 10 steps. Say, "Skip like I did."	2 Skips 8 steps maintaining balance, using opposing arm and leg movements, and using alternating feet 1 Skips 4–7 steps maintaining balance, using opposing arm and leg movements, and using alternating feet 0 Skips less than 4 steps or holds arms stiffly at sides				
87	59–60	JUMPING SIDEWAYS *(Standing, hands on hips, side to line)* **Taped line (2 in. × 2 ft.)** With feet together and without pausing, jump back and forth (sideways) over line for 3 left–right cycles. Say, "Jump across the line like I did."	2 Jumps back and forth 3 cycles with hands on hips, feet together, and without touching line or pausing between jumps 1 Jumps back and forth 1–2 cycles with hands on hips, feet together, and without touching line or pausing between jumps 0 Lands on line or pauses between jumps				
88	61–62	SKIPPING Demonstrate skipping 10 ft. Say, "Skip like I did."	2 Skips 10 ft. maintaining balance and rhythm, using opposing arm and leg movements, and using alternating feet 1 Skips 5–9 ft. maintaining balance and rhythm, using opposing arm and leg movements, and using alternating feet 0 Skips less than 4 ft. or holds arms stiffly at sides				
89	63–64	HOPPING SPEED **2 taped lines (2 in. × 2 ft.), 20 ft. apart** Place child behind starting line. Say, "Hop on 1 foot to the other line as fast as you can."	2 Hops 20 ft. in 6 seconds or less without losing balance or letting free foot touch floor 1 Hops 20 ft. in 7–10 seconds without losing balance or letting free foot touch floor 0 Hops less than 20 ft. or requires more than 10 seconds				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
		Object Manipulation					
1 Start: 12–16 months	12	CATCHING BALL *(Sitting, legs spread apart facing you, you and child sitting 3 ft. apart)* Roll **ball** from between your legs to child. Say, "Catch the ball."	2 Corrals ball with arms and/or hands without losing balance 1 Corrals ball, but loses balance 0 Misses ball				
2	13	ROLLING BALL *(Sitting, legs spread apart facing you, you and child sitting 3 ft. apart)* Roll **ball** from between your legs to child. Place ball on floor between child's knees. Say, "Roll the ball to me."	2 Rolls ball 3 ft. forward using hand/arm contact 1 Rolls ball 2–3 ft. forward using hand/arm contact 0 Rolls ball forward 2 ft. or less				
3	13	FLINGING BALL *(Standing in an open area)* Give **tennis ball** to child and stand 5 ft. away. Extend your hands to child and say, "Throw the ball to me."	2 Throws ball in any direction by extending arm at shoulder or elbow 1 Releases ball without extending arm at elbow 0 Holds ball or lays it down				
4 Start: 17–20 months	15–16	KICKING BALL *(Standing in an open area)* Kick a stationary **ball** so that it travels 3 ft. forward. Place ball 6 in. in front of child and say, "Kick the ball like I did."	2 Lifts foot and contacts ball 1 Lifts foot and attempts to kick ball 0 Fails to lift foot				
5	15–16	THROWING BALL *(Standing in an open area)* Give **tennis ball** to child and stand 5 ft. away. Say, "Throw the ball to me."	2 Throws ball by extending arm at shoulder or elbow while maintaining balance 1 Throws ball using an extended arm, but loses balance 0 Drops ball				
6 Start: 21–28 months	19–20	KICKING BALL *(Standing in an open area)* Kick a stationary **ball** so it travels 3 ft. forward. Place ball 6 in. in front of child and say, "Kick the ball like I did."	2 Kicks ball forward 3 ft. without it deviating more than 45 degrees to either side of midline 1 Kicks ball forward 3 ft. but it deviates more than 45 degrees from midline 0 Ball travels less than 3 ft.				
7	19–20	THROWING BALL—Overhand *(Standing in an open area)* Demonstrate throwing **tennis ball** overhand at least 3 ft. forward. Give ball to child. Say, "Throw the ball as far as you can."	2 Throws ball forward 3 ft. in the air 1 Throws ball forward 1–2 ft. in the air 0 Drops ball or throws in direction other than forward				
8	23–24	THROWING BALL—Underhand *(Standing in an open area)* Demonstrate throwing **tennis ball** underhand at least 5 ft. Give ball to child. Say, "Throw the ball as far as you can."	2 Throws ball forward 3 ft. in the air 1 Throws ball forward 1–2 ft. in the air 0 Drops ball or throws in any direction other than forward				
9 Start: 29–38 months	23–24	KICKING BALL *(Standing in an open area)* Kick stationary **ball** so it travels 3 ft. forward. Place ball 6 in. in front of child and say, "Kick the ball like I did."	2 Kicks ball forward 3 ft. without it deviating more than 20 degrees to either side of midline 1 Kicks ball forward 3 ft. but it deviates more than 20 degrees from midline 0 Ball travels less than 3 ft. and deviates more than 20 degrees from midline				
10	25–26	CATCHING BALL *(Standing in an open area)* Stand 5 ft. in front of child. Say, "Catch the ball." Toss **ball** so that it arrives at chest height, contacting child's outstretched arms.	2 Presents extended arms directly in front, palms upward or facing each other; attempts to secure ball by bending arms toward chest (may or may not catch ball) 1 Presents extended arms directly in front, palms upward or facing each other; arms remain straight when contacted by ball 0 Turns away from thrown ball				

Item #	Age in Months	Item NAME, *Position*, and Description	Score Criteria	Administration 1	2	3	4
11	27–28	THROWING BALL—Overhand *(Standing in an open area)* Demonstrate throwing **tennis ball** overhand at least 7 ft. Give ball to child. Stand 8 ft. away and say, "Throw me the ball."	2 Initiates throw by moving arm upward and back; ball travels 7 ft. in the air 1 Initiates throw by moving arm down and back, sideways and back, upward, or downward; ball travels 6 ft. or less in the air 0 Drops ball or throws in any direction other than forward				
12 Start: 39–46 months	29–30	THROWING BALL—Underhand *(Standing in an open area)* Demonstrate throwing the **tennis ball** underhand at least 7 ft. forward. Give ball to child. Stand 8 ft. away and say, "Throw me the ball."	2 Initiates throw by moving arm down and back; ball travels forward 7 ft. in the air 1 Initiates throw by moving arm sideways, upward, or forward; ball travels less than 7 ft. in the air 0 Drops ball or throws in any direction other than forward				
13	29–30	KICKING BALL *(Standing in an open area)* Kick stationary **ball** so that it travels at least 6 ft. forward. Place ball 6 in. in front of child and say, "Kick the ball hard like I did."	2 Kicks ball forward 6 ft. using opposing arm and leg movements and initiating kick by extending leg back with bent knee 1 Kicks ball forward 2–6 ft. using opposing arm and leg movements and initiating kick by extending leg back with bent knee 0 Fails to use opposing arm and leg movements or ball travels less than 2 ft.				
14	33–34	CATCHING BALL *(Standing in an open area)* Stand 5 ft. in front of child. Say, "Catch the ball." Toss **ball** so that it arrives at chest height, contacting child's outstretched arms.	2 Catches ball with hands and arms extended 1 Brings arms toward chest in effort to catch after ball contacts hands and arms 0 Turns away from ball or arms remain stationary				
15 Start: 47–52 months	39–40	THROWING BALL—Overhand *(Standing in an open area)* Demonstrate throwing **tennis ball** overhand at least 10 ft. Give ball to child. Stand 11 ft. away and say, "Throw the ball as far as you can."	2 Throws ball forward 10 ft. by moving arm up and back using upper trunk rotation, arms and legs moving in opposition 1 Throws ball forward 3–9 ft. by moving arm up and back or sideways and back using upper trunk rotation, arms and legs moving in opposition 0 Throws ball forward less than 3 ft. or throws ball by moving arm down and back with trunk remaining stationary				
16	39–40	HITTING TARGET—Underhand *(Standing 5 ft. from wall)* From 5 ft. away, toss **tennis ball** underhand to **2-ft. target taped on wall (2 ft. above floor)**. Say, "Throw the ball and hit the target like I did."	2 Hits target 2 of 3 trials using an underhand toss 1 Hits target 1 of 3 trials using an underhand toss 0 Fails to hit target using underhand toss				
17	41–42	CATCHING BALL *(Standing in an open area)* Stand 5 ft. in front of child. Say, "Catch the ball." Toss **ball** so that it arrives at chest height.	2 Catches ball with hands (securing it to chest if necessary) with arms bent 45–90 degrees at the elbows and palms up or facing each other 1 Catches ball by encircling it with arms and hands, then pulling ball to chest (arms may be held out straight in preparation to catch) 0 Fails to catch ball				
18	43–44	HITTING TARGET—Overhand *(Standing 5 ft. from wall)* From 5 ft. away, toss **tennis ball** twice overhand to **2-ft. target taped on wall (2 ft. above floor)**. Say, "Throw the ball and hit the target like I did."	2 Hits target 2 of 3 trials using an overhand toss 1 Hits target 1 of 3 trials using an overhand toss 0 Fails to hit target using overhand toss				

Item #	Age in Months	Item NAME, *Position, and Description*	Score Criteria	Administration 1	2	3	4
19 Start: 53–64 months	45–46	THROWING BALL—Underhand *(Standing in an open area)* Demonstrate throwing **tennis ball** underhand at least 10 ft. Give ball to child. Stand about 12 ft. away and say, "Throw the ball as far as you can."	2 Throws ball 10 ft. using upper trunk rotation, arms and legs moving in opposition, and initiating the throw by moving arm down and back 1 Throws ball 3–9 ft. using upper trunk rotation, arms and legs moving in opposition, and initiating the throw by moving arm down and back or sideways and back 0 Throws by moving arm up and back (trunk remains stationary) or ball travels less than 3 ft.				
20 Start: 65–71 months	51–52	HITTING TARGET—Overhand *(Standing 12 ft. from wall)* From 12 ft. away, toss **tennis ball** overhand to **2-ft. target taped on wall (2 ft. above floor)**. Say, "Throw the ball and hit the target like I did."	2 Hits target 2 of 3 trials using an overhand toss 1 Hits target 1 of 3 trials using an overhand toss 0 Fails to use overhand toss or to hit target				
21	51–52	BOUNCING BALL *(Standing 5 ft. from wall)* Using 1 hand, bounce **tennis ball** so it bounces once and then hits wall. Give ball to child and say, "Bounce the ball like I did."	2 Bounces ball to wall so it hits floor once and then hits wall 1 Bounces ball to wall so it hits floor more than once before hitting wall 0 Throws ball that hits wall first or misses wall after bounce				
22	51–52	CATCHING BALL *(Standing in an open area)* Stand 5 ft. in front of child. Say, "Catch the ball." Toss **tennis ball** in a 45-degree arc so it arrives at child's hands.	2 Catches ball on 2 of 3 trials with arms bent and using only hands 1 Catches ball on 1 of 3 trials with arms bent and using only hands 0 Fails to catch ball				
23	68–72	KICKING BALL *(Standing in an open area)* Kick a stationary **ball** so that it travels in the air for at least 12 ft. Place ball 6 in. in front of child's feet and say, "Kick the ball like I did."	2 Kicks ball so it travels 12 ft. in the air using opposing arm and leg movements and initiating kick by extending leg back with bent knee 1 Kicks ball so it travels 6–11 ft. in the air using opposing arm and leg movements and initiating kick by extending leg back with bent knee 0 Kicks ball that travels less than 6 ft. in air or fails to use opposing arm and leg movements				
24	68–72	CATCHING BOUNCED BALL Bounce **tennis ball** on floor once and catch it with 1 hand. Say, "Bounce and catch the ball like I did."	2 Bounces and catches ball on 2 of 3 trials 1 Bounces and catches ball on 1 of 3 trials 0 Fails to catch ball				
Fine Motor Scales							
Grasping							
1 Start: 1–2 months	0	GRASPING REFLEX *(Lying on back)* Stimulate child's palm by inserting your index finger into thumb side of palm.	2 Closes fingers in tight grasp around examiner's finger 1 Bends fingers loosely around examiner's finger 0 Extends fingers, fails to bend them				
2	0	GRASPING CLOTH *(Lying on back)* Spread **washcloth** over your forearm. Place child's hand on top of washcloth.	2 Grasps cloth in hand 1 Scratches at cloth but fails to grasp it 0 Extends fingers, fails to grasp cloth				

APPENDIX E

ADAPTED PHYSICAL EDUCATION ASSESSMENT SCALE-2 (APEAS-2)

When raw scores are entered, standard scores are automatically calculated.

Elementary - Ages 4.6 to 12

APEAS II

ADAPTED PHYSICAL EDUCATION ASSESSMENT SCALE

Student:		Sex:	Male
DOB:	11/19/2000	Assessment Date:	11/13/2007
CA:	7.0	Assessed by:	Dan Cariaga

For Demonstration Purposes Only - DOB and Assessment Date can not be changed.

Item	Task	Raw Score	Percentile Rank	S.D. z-Score	Standard Score
	Perceptual Motor				
1	Ocular Control	4	2	-2.01	80
2	Imitations of Postures	5	6	-1.61	84
3	Balance Left Open	13	30	-0.60	94
	Balance Right Open	2	16	-1.03	90
	Balance Left Closed	1	19	-0.92	91
	Balance Right Closed	5	45	-0.12	99
4	Alternate Hopping	5	63	0.34	103
	Object Control				
5	Hand Preference				
6	Throwing	3	4	-1.93	81
7	Throwing Quality	2	5	-1.75	83
8	Catching	4	1	-2.94	71
9	Catching Quality	3	23	-0.78	92
10	Foot Preference				
11	Kick for Accuracy	3	12	-1.21	88
12	Kicking Rolling Ball	3	4	-1.80	82
	Locomotor Skills				
13	Running Form	2	<1	-3.38	66
14	Jumping Form	7	34	-0.45	96
15	Hopping Form	2	4	-1.82	82
16	Galloping Form	2	16	-1.04	90
17	Skipping Form	1	2	-2.05	79
	Physical Fitness				
18	Flexibility	33	<1	-17.80	-78
19	Agility Run	40	2	-2.37	76
20	Bent Knee Curl-Up	6	23	-0.77	92
21	Push Up Position	3	6	-1.60	84
22	Push Ups	5	82	0.89	109
23	Endurance: Pacer	11	39	-0.35	97
24	Height	48	BMI = 16.82		
25	Weight	55	Within BMI Healthy Zone		

National Center for Health Statistics - National Center for Chronic Disease Prevention and Health Promotion (2000)

Secondary - Ages 11 to 17

APEAS II

ADAPTED PHYSICAL EDUCATION ASSESSMENT SCALE

Student or ID: _____ Sex: _____
DOB: _____ Date: _____
CA: _____ Assessed By: Dan Cariaga

Perceptual Motor		Score	
1	Ocular Control		1-moves head 3-eyes dart 3-rest jerky 4-no convergs (Sum Total)
2	IP(Sum of Postures)		7 12 13 14 (1 point each correct – Max 15)
3	Balance L Closed		Standing on left foot, arms crossed eyes closed (Total seconds, Max 90)
	Balance R Closed		Standing on right foot, arms crossed eyes closed (Total seconds, Max 90)
4	Alternate Hopping		# of rhythmic patterns in 10 sec, pattern: r-hop, r-hop, l-hop, l-hop (1 point per pattern)

Object Control			
5	Throwing		3-hits target 2-hits wall below target 1-hits wall 0-does not reach wall 20' to an 18"x36" target; (5 trials, points scored per trial - Max 15)
6	Throwing Quality		cross extension follow through weight shift hand consistency 1 point each (Max 4)
7	Catching		3- ball caught by hands 2-ball trapped 1-attempts but misses 0-misses w/o attempt (5 trials from 20', points scored per trial - Max 15)
8	Catching Quality		tracks ball body position hand adjustments absorbs impact (1 point each - Max 4)
9	Kick Accuracy		3-hits target 2-hits wall below target 1-hits wall 0-does not reach wall in flight 20 feet to an 18"x36" target; 5 trials; (Max 15)
10	Paddle Rally		One minute timed test, 0 or 1 bounce only, examiner may have 1 spare ball (Total number of successful hits from behind 15' in one minute)

Locomotor Skills			
11	Running Form		4-long stride, flight, rotation 3-emerging, limited arm opposition 2-limited flight, lacks coordination 1-no flight, limited arms, side to side movement 0- Unable (Max 4)
12	Skipping Form		4-reciprocal rest between & legs, smooth 3-lacks good rhythm 2-not disjointed, pattern inconsistent 1-pattern mechanical & inconsistent 0- Unable to perform skill (Max 4)

Physical Fitness				
13	Flexibility			Sitting in straight leg, long-sitting position w/ heels touching wall, bend safer and slide through bands, measure the distance at student's finger tips (score in inches to nearest ½")
14	Agility Run			Base bags 36' & 42' from start line, pick up one at a time..... place at start line, then return base bags one at a time to original position (Score in seconds, to nearest tenth)
15	Bent Knee Curl-Up			Total number of curl-ups that can be completed without stopping (# of completed curl-ups, Max 75)
16	Push-Up Position			Timed test, student in straight body push-up position (Total seconds – Max 90)
17	Push-Ups			Test of upper body strength (un-timed—Max 75)
18	Standing Long Jump			Three trials on rested surface, measure from take-off line to part of body that touches the surface nearest the take-off line, 3 trials (score longest jump in inches)
19	Jumping Form			4- bilateral coordination good, absorbs impact 3-no forward lean, inconsistent 2-arm labored, coordination lapses after 3 or 4 jumps 1-many inconsistencies 0- Unable (Max 4)
20	Endurance: Pacer			Two lines 20 meters apart, timed test using tape or CD (1 point for each lap as noted by tape)
21	BMI	Height		(Inches)
		Weight		(Pounds)

APEAS II data set and Test Manual © 2007, American Association for Physical Activity and Recreation, Reston, VA
APEAS II Software © 2007, Dan Cariaga, San Luis Obispo, CA
BMI - From National Center for Health Statistics - National Center for Chronic Disease Prevention and Health Promotion (2003)

Secondary - Ages 12 to 17

APEAS II

ADAPTED PHYSICAL EDUCATION ASSESSMENT SCALE

Student or ID: _____
DOB: _____
CA: _____

_____
_____
Dan Cariaga

Adaptive Behaviors for Physical Education Participation

Score	Behavior	Domain
	Peer Interaction ☐ 1 Requires occasional reminders in order to interact with ☐ 2 Requires regular prompting to interact with peers ☐ 3 Requires direct instructional assistance to interact with	Behavioral
	Fitness Level ☐ 1 Occasionally needs a rest break ☐ 2 Can complete 50% of the class activities without a rest ☐ 3 Requires frequent rest breaks	Motor
	Medical Condition: _____ ☐ 1 Is able to self manage medical condition ☐ 2 Requires regular prompting to self-manage medical ☐ 3 Requires direct assistance to manage medical	Medical
	Time, Equipment and/or Activity Modifications ☐ 1 Requires one of the above modifications ☐ 2 Requires two of the above modifications ☐ 3 Requires three of the above modifications	Motor
	Understanding of Rules And/Or Strategies ☐ 1 Is able to comprehend with minimal supports ☐ 2 Requires regular prompting to participate ☐ 3 Requires direct assistance to participate appropriately	Cognitive
	Behavior Prevents Participation in Group Activities ☐ 1 Is able to manage behavior with minimal supports ☐ 2 Requires regular prompting to self-manage behavior ☐ 3 Requires direct assistance to manage behavior	Behavioral
	Opening a Combination Lock ☐ 1 Needs frequent reminders of combination ☐ 2 Needs verbal prompts to open lock ☐ 3 Unable to open lock – needs staff assistance	Functional
	Locker Room Supervision ☐ 1 Occasionally needs assistance in the locker room ☐ 2 Requires regular prompting to dress ☐ 3 Requires direct assistance to dress	Functional

APPENDIX F

HOW TO ACCESS EACH ASSESSMENT INSTRUMENT

- Test of Gross Motor Development-2 (TGMD-2)
  https://www.proedinc.com/Products/9260/tgmd2-test-of-gross-motor-developmentsecond-edition.aspx

- Brockport Physical Fitness Test-2 (BPFT-2)
  http://www.humankinetics.com/products/all-products/brockport-physical-fitness-test-manual-2nd-edition-with-web-resource

- Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2)
  https://www.pearsonclinical.com/therapy/products/100000648/bruininks-oseretsky-test-of-motor-proficiency-second-edition-bot-2.html

- Peabody Developmental Motor Scales-2 (PDMS-2)
  https://www.pearsonclinical.com/therapy/products/100000249/peabody-developmental-motor-scales-second-edition-pdms-2.html

- Adapted Physical Education Assessment Scale-2 (APEAS-2)
  https://www.shapeamerica.org/APEAS3/Buying_Options.aspx

APPENDIX G

INSTRUCTIONAL VIDEO SCRIPT

Time	**Content & Script** Standardized Assessment Tools Commonly Used in Adapted Physical Education	Video
	INTRODUCTION	
0:00-0:04		Title page of project name
0:04-1:07	Hi, my name is Laura Fraietta, and I am a graduate student in adapted physical education teaching at the University of Wisconsin-La Crosse. Assessment in physical education is required to determine a student's present level of performance. It is often used to obtain a baseline of what the student's strengths and weaknesses are in relation to locomotor, object control, fitness, and many other skills. There are many types of assessments used to measure these skills such as teacher-made rubrics, checklists, and standardized assessments. When assessing students in adapted physical education, standardized assessment tools can be used to determine eligibility, placement, and instructional decisions as part of the Individualized Education Program process in special education. It is important that physical educators assess their students because it can help determine if their students are eligible for specially designed physical education services. Assessment results can also determine the least restrictive environment for students.	Me on screen Video clip of me assessing a student Examples of rubrics, checklists, and standardized assessments Flow chart of Special Education Process Video clip of me assessing student
1:08-1:59	The purpose of this video is to review select assessment instruments that are commonly used in adapted physical education. Assessments including the Test of Gross Motor Development-2, Brockport Physical Fitness Test-2, Bruininks-Oseretsky Test of Motor Proficiency-2, Peabody Developmental Motor Scales-2, and the Adapted Physical Education Assessment Scales-2 will be presented. The target audiences for this video include general and adapted physical education teachers, related service professionals (including physical and occupational therapists), special education teachers and	Me on screen Pictures of all assessment tools List of target audiences

	administrators, parents of students with disabilities, and other professionals. This video will also touch upon the Individuals with Disabilities Education Improvement Act (IDEA 2004), the special education process related to assessment, and why assessment is an important part of APE.	Picture of IDEA 2004 Picture of special education process
2:00-2:57	This video is divided into six sections. Section 1 will discuss IDEA 2004 and the IEP process related to adapted physical education. Section 2 will critique the Test of Gross Motor Development-2, also known as TGMD-2. Section 3 analyzes the Brockport Physical Fitness Test-2 (BPFT-2). Section 4 reviews the Bruininks-Oseretsky Test of Motor Proficiency-2, also known as the BOT-2. Section 5 covers the Peabody Developmental Motor Scales-2 (PDMS-2). Lastly, Section 6 summarizes the Adapted Physical Education Assessment Scale-2, also known as the APEAS. Each section with an assessment instrument will discuss the skills or components measured, intended populations, validity and reliability, materials, equipment, and facilities needed for each assessment tool, and uses in adapted physical education. Now, I will discuss IDEA and the IEP process in Section 1.	On screen text of 6 sections List of materials covered Me on screen
	SECTION 1	
2:58-4:42	According to IDEA 2004, students with disabilities must be included in state and district-wide assessment programs, which can be accommodated to meet their individual needs. Because physical education is part of special education, students must be assessed in this content area. When teachers assess a student's gross motor performance, results can determine eligibility, placement, and instructional decisions as part of the IEP process. Based on standardized assessment results, student's may be eligible for adapted or specially designed physical education services based on school district criteria such as a score of 1.5 standard deviations or more below the mean on norm-referenced tests, or if they classify as at least two years below their age level on criterion-referenced tests. Once the student is eligible for APE services, teachers can determine where the student should be placed. According to IDEA 2004, students with disabilities	Picture of IDEA 2004 Picture of page 46785 of IDEA 2004 On screen text SHAPE America Position statement on eligibility Picture of student

	should be placed in their least restrictive environment, which is individually determined for each student. This placement is where students can safely and successfully participate in physical education. These placements may include: adapted physical education, general physical education, a combination of general and adapted PE, one-to-one instruction, or any means of instruction that will best meet their needs. As part of the IEP process, APE teachers can develop and implement goals for each student and accommodate the learning environment by making effective instructional decisions. There are several commonly used standardized assessment instruments used in adapted physical education. The next chapter will analyze the Test of Gross Motor Development-2. SECTION 2	Section 300.114 of IDEA 2004 List of placements IEP example Picture of standardized assessments
4:43-5:30	The Test of Gross Motor Development-2, TGMD-2, is a very common assessment instrument used to measure a child's gross motor development. Twelve locomotor and object control skills are assessed: run, gallop, hop, leap, horizontal jump, slide, striking a stationary ball, stationary dribble, catch, kick, overhand throw, and underhand roll. According to Ulrich, these skills were chosen because these are movements that are often seen in early childhood development. The TGMD-2 is designed for boys and girls between the ages of 3-10 years. It is often used for students with and without disabilities to determine their present level of performance for gross motor development.	TGMD-2 manual Picture of student Score sheet of test items Video of me assessing student Picture of student
5:31-6:40	The TGMD-2 is both norm and criterion-referenced. It is criterion-referenced since students must demonstrate specific criteria for each subtest of the locomotor and object control skills. For example, the criteria for the run are: 1) arms move in opposition to legs, elbows bent, 2) brief period where both feet are off the ground, 3) narrow foot placement landing on heel or toes (i.e. not flat footed), and 4) nonsupport leg bent approximately 90 degrees (i.e. close to buttocks). When assessing a student, the test administrator determines if all the performance criteria are present and records a score of 1 or 0 based on the performance. All test items are added for a raw score,	Picture of test kit Picture of criteria for the "run" Picture of text from manual on scoring procedure

	then converted to standard scores, percentiles, and age equivalents. The TGMD-2 is also norm-referenced because results of an individual's assessment are compared with standards of results for groups of children at the same age. The results of the TGMD-2 can help determine eligibility, placement, and instructional decisions.	Example of score sheet Page 60 of manual
6:41-7:25	The TGMD-2 is often used because of its reliability and validity. Three procedures were used to determine its reliability: content sampling, time sampling, and interscorer differences. As a result of these procedures, the TGMD-2 is considered a reliable assessment instrument. Along with its reliability, researchers determined its validity through three procedures: content-description validity, criterion-prediction validity, and construct-identification validity. The results of each procedure confirmed that the TGMD-2 is a valid assessment tool that can be used to measure motor development in children.	Text from manual on reliability and validity
	To learn about the norms established for the TGMD-2, please refer to the manual.	Me on screen
7:26-8:31	When assessing students with the TGMD-2, there is a variety of equipment needed. All of the equipment used is commonly found in schools, which makes this assessment instrument very practical to use.	Me on screen
	According to the Examiner's Manual, the equipment used includes: an 8-10-inch playground ball, 4-inch lightweight ball, basketball, tennis ball, soccer ball, softball, 4-5-inch beanbag, tape, 2 traffic cones, plastic bat, and a batting tee. Although these are often used for the assessment, adaptations may be used for students with disabilities. It is important to note that if you do make adaptations to the equipment or criteria on the TGMD-2, you cannot use it for eligibility purposes because it would not be valid information. For example, if you have a student who is a wheelchair user, and you are assessing the overhand throw, you would not measure if they stepped in opposition. Another example would be if you had a student with a visual impairment and you are assessing the run. The student may need additional assistance from a guidewire, or noise-making equipment.	Picture of equipment Video of student Picture of student Performance criteria for "overhand throw" Picture of student

8:32-9:58	The TGMD-2 can be used in adapted physical education for a variety of purposes including eligibility, placement decisions for specially designed physical education services, and instructional decisions. Results of the TGMD-2 are calculated into a Gross Motor Quotient (GMQ), which is the sum of the locomotor and object control subtests. The GMQ represents a student's overall gross motor skill performance, which can help determine eligibility. The TGMD-2 is an effective tool to use to decide if a student is eligible for APE services because it focuses on many fundamental motor skills that are taught in most elementary physical education programs. For placement decisions, the teacher can use the results of the TGMD-2 as one factor to make appropriate recommendations about whether or not the student should be placed in general PE or adapted PE. Lastly, the teacher can base instructional decisions on the student's needs, as identified by the TGMD-2. Teachers can design creative and effective ways to incorporate specific skills within the lesson that the student needs to work on, which allows them to informally assess in a more authentic way. At this time, the TGMD-3 is in development and should be published soon. Let's listen to what current adapted physical education teachers have to say about assessment.	Video of student Page 15 of manual TGMD-2 Record Form Picture of students Example of complete score sheet Pictures of students Me on screen Me on screen
9:59-10:03		On screen text of question: "what formal standardized assessment instruments do you use and why do you use them in adapted physical education?"
10:04-11:48	Interview with Jana Yashinsky, Matt Meyers, and Joey Fredrick.	

11:49-11:53	The next chapter will discuss the Brockport Physical Fitness Test-2.	Me on screen
	SECTION 3	
11:54-13:01	Another standardized and well researched assessment instrument is the Brockport Physical Fitness Test-2 (BPFT-2). This assessment is used to measure health-related physical fitness levels in students ages 10-17 years. Within the Brockport, five components of physical fitness are measured: aerobic functioning, muscular strength, muscular endurance, flexibility, and body composition. The Brockport assesses those components utilizing 27 test items that are provided within the test. There are 27 test items because it allows the test administrator to select the most appropriate skills that need to be assessed for individual students. Typically, only 4-6 test items are chosen for each student. Some items on the Brockport are purposely similar to the FITNESSGRAM/ACTIVITYGRAM assessment, but are primarily designed for students with disabilities. There are many similarities between the Brockport and FitnessGram. For example, both use the PACER test as a means of measuring aerobic endurance, and the curl-up test to measure muscular endurance.	Brockport manual On screen text of 5 components Picture of test items Picture of section in manual Picture of FitnessGram Picture of student being assessed
13:02-13:27	The Brockport is designed for students with intellectual disabilities, visual impairments, spinal cord injuries, cerebral palsy, congenital anomaly, and amputation. When assessing students with disabilities, it is important to understand that there may be further accommodations made to meet their needs. For example, a student with a visual impairment may benefit from noise-making equipment, guidewire, or physical brailing.	Picture of manual and on screen text of disabilities Picture from manual
13:28-14:20	The Brockport is a criterion-referenced test because each test item has specific criteria believed to be a representation of healthy fitness zones. When determining a student's present fitness level, test scores are compared to specific standards and fitness zones. The fitness zones are: healthy fitness zone, adapted fitness zone, and needs improvement. If a	Picture of section within manual Text from manual

	student falls within the healthy fitness zone, their level is considered to be appropriate, whereas if they fall within the needs improvement zone, they need to improve on the component that is being measured. The adapted fitness zone represents a minimal acceptable level that is achieved by a student with a disability. Each of the 27 test items vary in their standards and what levels determine a healthy fitness zone based on gender and age. For information about the norms established for the Brockport, please refer to the manual.	Me on screen
14:21-14:51	To determine the reliability of the Brockport test, researchers used the test-retest method. When measuring its reliability, coefficients larger than .70 were considered acceptable. Based on the results, the Brockport test is a reliable assessment tool. Three procedures were used to determine its validity: concurrent, construct, and logical. As a result of the test-retest method and the three procedures, the Brockport test is a reliable and valid assessment tool that can be used in physical education.	Text from manual on validity and reliability
14:52-15:22	With the Brockport test kit, there is a comprehensive training guide that teachers can use to develop and implement physical fitness programs for students with disabilities. The training guide covers each disability and provides guidelines for all test items. The kit also provides a DVD that demonstrates how to administer each test item. These resources are beneficial for test administrators, especially APE teachers who use the results for eligibility, placement, and instructional decisions.	Picture of Training Guide Picture of kit
15:23-16:27	As students enter the middle and secondary school levels, lifetime fitness becomes the primary goal in physical education. Using the Brockport test allows teachers to measure a student's fitness level and create goals that could potentially be placed on their IEP. For eligibility purposes, if a student did not meet the requirements to fall within the healthy fitness zone in certain number of components, they could be eligible for APE, depending on a school district's policies. Placement decisions could also be made depending on the scores for each item that is tested. Lastly,	Picture of student Video of me assessing student Picture of

	instructional decisions closely relate to the Brockport test because the kit provides the training guide and manual to follow. For each disability listed in the manual, there are specific instructional decisions that can be used for each test item. Based on assessment results, the instructor can determine a student's present level of performance for each test item, and contribute to the IEP process. The next assessment instrument reviewed is the Bruininks-Oseretsky Test of Motor Proficiency-2.	"bench press" in manual Me on screen
	SECTION 4	
16:28-17:45	The Bruininks-Oseretsky Test of Motor Proficiency-2 (or the BOT) is another assessment instrument used in APE. The content of the BOT consists of fine manual control, manual coordination, body coordination, strength, and agility. Within the BOT, there are eight subtests: fine motor precision, fine motor integration, manual dexterity, bilateral coordination, balance, running speed and agility, upper-limb coordination, and strength. It is important to note that although there are fine motor skills within the BOT, these items are assessed by related service personnel, not APE teachers. This is important because the BOT is often used by the Motor Team where APE teachers collaborate with physical and occupational therapists to determine a student's present level of performance. According to the BOT Manual, the purpose of the instrument is for diagnoses, screening, placement decisions, and developing and evaluating motor training programs. Within the BOT, there are two forms of the test: a short form and a complete form. The test administrator can decide which form to use depending on how much information they need about a student's motor performance.	Picture of manual On screen text of content On screen text of subtests Example of fine motor test item Picture of student being assessed On screen text of purposes Picture of short and complete form
17:46-18:07	The BOT is designed for males and females with or without a disability between the ages of 4-21 years. There are many considerations when administering the BOT. For example, some test items may be physically or cognitively challenging for many students. Therefore, adaptations or alternate assessments may be considered.	Examples of test items on the BOT-2 Example of

18:08-18:44	The BOT is a norm-referenced test. It is norm-referenced because results from each subtest are compared to specific standards such as age-equivalents, percentiles, standard scores, and scale scores. To determine a score for the BOT, a total motor composite is calculated. This determines the sum of all scores from each subtest, which can then be used to measure if the student is well below average, below average, average, above average, or well above average. For more information on the norms established for the BOT, refer to the manual.	standards on score sheet Table C.13 from manual Me on screen Chapter 6 of manual
18:45-19:19	To determine the reliability of the BOT, researchers used three measures: internal consistency, test-retest method, and interrater reliability. Based on each measure, there was a high correlation and consistency with the test, demonstrating its reliability. Validity of the BOT was determined by using four procedures: test content, internal structure, clinical group differences, and relationships with other tests of motor skills. Each procedure indicated that the BOT is a valid instrument to use for assessment purposes.	
19:20-19:44	Some of the test items on the BOT require specific equipment. A tennis ball, balance beam, stopwatch, a target, and something to measure the distances are needed for the administration of the test. The BOT kit provides some of the required equipment like the tennis ball, balance beam, and target, but other equipment must be provided by the person administering the test.	Picture of equipment
19:45-21:04	Based on results from evaluation with the BOT, the adapted physical educator can contribute to the IEP process. If the student's scores fall outside the pre-established age equivalents, percentiles, standard scores, or scale scores, they may be eligible for APE based on a school districts' criteria. Utilizing the short form can help with general screening of a student, and the complete form can summarize their overall motor performance. The short form is comprised of only 14 test items selected from the eight subtest categories. These 14 test items were selected because they range in motor ability and can provide the administrator	Picture of meeting Example of descriptive category on score sheet BOT-2 manual Picture of Short Form

	reliable results for a student's overall motor proficiency in a short period of time. The short form is only used for screening purposes, whereas the complete form can be used for eligibility, placement, and instructional decisions. Based on the student's present level of performance and scores, the adapted physical educator and IEP team can decide which physical education setting is most appropriate. The APE teacher can then make instructional decisions that are appropriate to the student's goals. Let's listen to what current adapted physical education teachers have to say about assessment.	Picture of Complete Form Example of IEP goals
21:05- 21:10		On screen text of question: "How do these assessment instruments and the results play a role for individual students in adapted and/or general physical education?"
21:11- 22:27	Interview with Matt Meyers and Joey Fredrick	
22:28- 22:31	The next chapter will discuss the Peabody Developmental Motor Scales-2.	
	SECTION 5	
22:32- 23:47	The Peabody Developmental Motor Scales-2, or the Peabody, is another assessment instrument that is used in APE. Focusing on preschool and early elementary students, the Peabody measures fine and gross motor skills. Subtests in the Peabody are reflexes, stationary, locomotion, object manipulation, grasping, and visual-motor integration. Although the test measures fine motor skills like the BOT, APE teachers do not assess these areas. Therefore, this assessment is also used by the Motor Team. The Peabody has 249 test items within 6 subtests. The results of the subtests are used	Picture of test kit Text from manual on subtests Picture of student being assessed Page 4 of

	to determine composites categorized as: Gross Motor Quotient, Fine Motor Quotient, and Total Motor Quotient. The Gross Motor Quotient combines the results of all subtests that measure the use of large muscles. The Fine Motor Quotient combines the subtests that measure the use of small muscles. The combination of both Gross and Fine Motor Quotients is called the Total Motor Quotient. These composites are important when gathering and analyzing results for various decisions.	manual (GMQ, FMQ, & TMQ)
23:48-24:07	The Peabody is designed for boys and girls between the ages of birth to six years, with or without a disability. When utilizing the Peabody, it is important to know that some test items are specific to certain ages. For example, object manipulation subtests are only given to children who are 12 months and older.	Video & picture of student being assessed Example of "kicking ball" subtest
24:08-25:03	The Peabody is both norm-referenced and criterion-referenced. It is norm-referenced because the participant's results from each subtest are compared to children of the same age and gender. It is also criterion-referenced because each skill has specific criteria to attain. The criteria have a number that is ultimately used for the scoring procedures. A score of "0" indicates the child did not demonstrate the criteria of the skill, whereas a "1" means the child showed some components of the skill. A score of "2" indicates the child demonstrated proficiency. Within the Guide to Item Administration Manual, all subtests and test items are listed, and it provides a detailed procedure and criteria section so the test administrator knows what to look for and how to score the child. Information about the norms established for the Peabody can be located in the manual.	Examples of norms used Example of criteria of "catching a ball" Picture of manual Example of procedure and criteria section Me on screen
25:04-25:42	Content sampling, time sampling, and interscorer reliability were procedures used to determine the reliability of the Peabody. The procedures suggested a high and acceptable reliability through Cronbach's alpha, test-retest method, and a high correlation between two test administrators. To determine its validity, three measures were used: content-description validity, criterion-prediction validity, and	On screen text of reliability Table 6.5 on reliability in manual On screen text of validity Picture of text

	construct-identification. In summary, the Peabody test is a valid and reliable assessment instrument that can be used to measure fine and gross motor skills in children.	from manual
25:43-26:39	Along with the Examiner's Manual, the Peabody test kit comes with a "Guide to Item Administration" and a "Motor Activities Program". Within the "Motor Activities Program", there are two sections that show teachers how to use the program and provides a section for instructional units and practical teaching activities. Section one discusses the design and implementation of effective motor programs, an introduction to the instructional units and subtests, illustrations of uses of the motor activities program, and adaptations for special learning and motor needs. Section two provides an overview of units and activities within all subtests of the Peabody. Described within each subtest are objectives, reasons for teaching the skill, related skills in natural environments, critical elements used, and instructional strategies that are helpful when administering the test.	Pictures of guide to item administration and motor activities program Preface section in motor activities program Picture of "3.33 Galloping" in text Picture of kit
26:40-28:10	The Peabody is a common assessment tool that is used to determine eligibility, placement, and instructional decisions at the preschool level for APE. According to IDEA 2004, if a student's IEP contains specially designed physical education, it must be offered to these preschoolers whether or not their non-disabled peers receive physical education. This is referred to as the second consideration in the discussion section of the IDEA Rules and Regulations, and services must be provided if it is listed on the IEP. The APE teacher can collect the student's score and compare it to age equivalents and standards to determine eligibility. Assessment results can also be used as part of least restrictive environment decisions for the student. If the student performs below the norms, it may be appropriate to place them in APE, whereas if they score average or above average, the most appropriate placement may be general physical education, depending on other factors. Instructional decisions such as skill focus, teaching strategies, adaptations, and equipment can be directed towards the needs of the student in order for them to be successful in physical education.	Discussion section 300.108 of IDEA 2004 Profile/ Summary Form Video of student being assessed

	At this point, the Peabody is under its third revision and will be published soon. Let's listen to what current adapted physical education teachers have to say about assessment.	Me on screen On screen text of question: "How do you use the results of assessments in you daily and on-going adapted physical education work?"
28:11-29:33	Interview with Jana Yashinsky, Matt Meyers, and Joey Fredrick	
29:34-29:41	The last assessment instrument reviewed in this video will be the Adapted Physical Education Assessment Scales-2.	
	SECTION 6	
29:42-30:13	The APEAS is primarily designed for students with disabilities. Perceptual motor function, object control, locomotor skills, and physical fitness are the four areas that make up the APEAS. Adaptive behaviors related to physical education are also measured. According to the APEAS Test Manual, adaptive behaviors refer to a student's behavior that may diminish the ability to safely and successfully participate in general physical education.	Picture of manual List of content Adaptive behaviors section Text from manual
30:14-30:28	The APEAS is designed for boys and girls, ages 4.6 to 17 years in the elementary and secondary levels. There are 23 test items on the elementary test and 20 items on the secondary test.	Text from manual
30:29-31:00	The APEAS is both norm-referenced and criterion-referenced. It is norm-referenced because the results for each student are compared to standards based on the normative data, and then converted to percentiles.	Example of score sheet

	Within the APEAS, the norms are categorized by age and gender. It is also criterion-referenced because each test item has specific criteria that the student attempts to meet when performing the task. The criteria within each test item vary depending on the skill.	Page 51 of manual
31:01-31:40	Reliability for the APEAS was established using 70 itinerant APE teachers that participated in an in-service training session. Each APE teacher administered the APEAS to a minimum of 10 students to ensure it is reliable. Information on the validity of the APEAS is not available. It must be noted at this point that the publisher of this test, SHAPE America, is currently conducting research on its validity and norms. The APEAS is a desired assessment to use to receive a present level of performance on students, but at this time should not be used for eligibility purposes.	Text from manual on reliability Picture of SHAPE America website Video of student
31:41-32:42	Along with the APEAS Manual, the kit provides an online feature that can be useful for teachers. This feature consists of an eScoresheet and a Performance Profile, which allows the test administrator to score and calculate a student's performance online for each test item, as well as create a student profile. The test administrator can simply insert the raw score values for each subtest and the eScoresheet will calculate the percentile rank, standard deviation, and standard scores. This feature is beneficial because information is saved for all test items, which allows the APE teacher to track student progress and use information for progress reports and IEP meetings. Another part of the online feature are the videos provided for each test item in both the elementary and secondary levels. This is an advantage for test administrators because they can simply watch the video to see how it is supposed to be administered and what the performance should look like.	Example of score sheet and performance profile from online feature Picture of APEAS website login Video of student On screen text
32:43-33:09	Although the APEAS has not yet been validated, it can be a potential tool in the future to use when determining APE eligibility, placement, and instructional decisions. For example, a school district could have eligibility criteria that states a student is eligible for APE services if they score 1.5 standard deviations below the mean, or 2 years below their age	Page viii of APEAS manual

	level in relation to the four components of the APEAS.	
33:10-34:19	One very unique and useful feature of the APEAS is the adaptive behaviors section, which can also be used for placement and instructional decisions. This section focuses on the student's behavior regardless of their motor performance. It is used to determine if the student has the ability to safely and successfully participate in general physical education. There are eight categories related to behavior, motor, medical, cognitive, and functional domains. For example, the first item, "peer interaction", has specific criteria ranging from 1-3 on the student's behavior with peers. The administrator then scores the student based on observed behaviors. The APE teacher and other IEP team members can use the student's motor abilities and/or behaviors to decide the least restrictive environment for physical education for individual students. As for instructional decisions, adapted physical education teachers can utilize different teaching styles, skill focus, equipment, and facilities to ensure the student will be successful in physical education.	Examples of adaptive behaviors section On screen text of 8 categories Picture of "peer interaction" item Picture of students Picture of student
34:20-34:34	Let's listen to what current adapted physical education teachers have to say about assessment.	On screen text On screen text of question: "what tips or recommendations do you have for first time users of these assessment instruments or during the assessment process with students who may qualify for adapted physical education services?"
	Interview with Jana Yashinsky, Matt Meyers, and	

34:35- 36:23	Joey Fredrick	
36:24- 37:10	When assessing students in physical education, teachers may use an alternative to standardized assessments. These alternatives can be teacher-made rubrics, checklists, or any other assessment technique to gather data on a student's present level of performance. Teachers can create assessments that are specific to the content taught, and to specific disabilities which can be used throughout the school year. There are many resources that provide vital information about teacher-made assessments. For more information on this topic, please refer to the text "Creating Rubrics for Physical Education" by Jacalyn Lund, or the JOPERD article "Authentic Assessment in Adapted Physical Education" by Block, Lieberman, and Connor-Kuntz.	Picture of teacher-made rubrics and checklists Picture of SPARK Inclusive PE text Picture of text and JOPERD article
37:11- 37:22	Let's listen to what current adapted physical education teachers have to say about assessment.	On screen text On screen text of question: "what types of informal assessments such as teacher made rubrics/checklists do you use in your adapted physical education programming?"
37:23- 38:18	Interview with Jana Yashinsky and Matt Meyers. SUMMARY	
38:19- 39:22	In this video, we have seen that assessment is a critical component of the adapted physical education service delivery process. Assessment results can yield eligibility, placement, and instructional decisions, as part of the IEP process for individual students. We have learned about five of the most common	Me on screen Picture of

39:23- 39:48	assessment instruments that are used in adapted physical education including the Test of Gross Motor Development-2, the Brockport Physical Fitness Test-2, the Bruininks-Oseretsky Test of Motor Proficiency-2, the Peabody Developmental Motor Scales-2, and the Adapted Physical Education Assessment Scales-2. Further information can be found within each assessment instrument manual and accompanying materials. Care should be taken to select the most appropriate assessment tool based on individual student needs and other factors. I hope that the information about assessment provided in this video has been beneficial for you and your students.	assessments Individual pictures of assessment manuals Pictures of students Title of project Acknowledgements