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GEORGIA PRIMARY EDUCATION PROJECT

MONTHLY REPORT
JUNE 1 – JUNE 30, 2012

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MONTHLY REPORT

June 1 – June 30, 2012

During this reporting period, G-PriEd staff continued to develop the conceptual framework for teacher professional development; conducted the reference process with the Ministry of Education and Science (MES) on the diagnostic assessment task forces, module writing working groups, and parent engagement coordinator; fielded two international consultants to develop conceptual frameworks for the math and reading diagnostic assessments, and fielded two international consultants on training reading and math teachers (respectively) who reviewed the training modules and matrix. Below we provide further detail of this month's activities.

Outcome 1: Reading and Math Instruction Improved

Output 1: Improve Teacher Effectiveness in Teaching Reading and Math, as Well as in Using Differentiated Instruction in Reading and Math

Task 1: Develop and propose school-based professional development as a mechanism for training reading and math teachers

Develop concept paper for school-based professional development for reading and math teachers. G-PriEd's Teacher Effectiveness Director revised the conceptual framework on school-based professional development, adding and/or revising the following items:

- *Types of literacy and numeracy leaders.* To better address the Georgian context (which has more small and medium-size schools than large schools), G-PriEd is now proposing that small and medium-size schools have only one teacher-leader — who serves as both a literacy and a numeracy leader — and large schools have one literacy and one numeracy leader.
- *Plan for teachers' participation in in-service workshops.* G-PriEd staff developed a plan for in-service workshops for elementary school teachers in Phases 1 and 2 of the proposed school-based professional development scheme. Specifically, the key modules of the workshops were identified with expected outcomes for teachers and estimated duration of each (number of contact and non-contact hours for each module).
- *Role of the school principal.* G-PriEd staff identified links between the principal standards adopted by TPDC and the principal's role in the school-based professional development scheme. In addition, several existing and potential incentives were identified that may motivate school principals to promote the implementation of the school-based professional development program, such as improved rating in the Ministry's branding system.
- *Workload of literacy/numeracy leaders and estimated supplementary salaries.* G-PriEd staff revised the average workloads suggested for literacy and numeracy leaders to be a proportion (.5, 1, etc.) of the hours of a full-time teacher (18 hours a week). Based on this revision, as well as the decision to have one leader in small/medium schools and two in large schools, G-PriEd staff re-calculated the estimated workloads and supplementary salaries for leaders at each pilot school.

Develop clear approaches and requirements for nomination of reading and math leader-teachers, as major actors of school-based professional development. The above-described concept paper describes detailed qualifications to be expected from successful literacy/numeracy leaders. It also proposes a two stage process for selecting them:

- Stage 1 Candidates submit a letter of interest to the administration. Principal shortlists the candidates to be interviewed.

- Stage 2 Principal and a national trainer hired by G-PriEd interview the candidates and make the final decision in consultation with TPDC.

This process was discussed preliminarily with the MES' Maia Siphashvili and Teona Kuptadze (from the Teacher Professional Development Center) in May, and they generally agreed with it (though they emphasized the importance of the involvement of G-PriEd and TPDC in the process).

Discuss the concept, approaches, and requirements with the MES and encourage its approval. In addition to revising the full conceptual framework, G-PriEd's Teacher Effectiveness Director also revised the short version of the document. The short version will be presented to the MES for their review in July 2012.

Task 2: Identify national trainers of reading and math, design TOT program for them, and provide training/consultation on training the leader-teachers

Create a working group together with TPDC representatives and local and international experts to develop the TOT manuals. In June, G-PriEd's candidates for the working groups were reviewed by TPDC, and the project sought references on these candidates from the MES Reference Committee. The Reading Module Writing Working Group had its first meeting with international consultant Sylvia Linan-Thompson, who discussed international best practices and USAID experience in teacher training in reading with the group. The Math Module Writing Working Group will begin meeting in July.

Develop TOT manuals for national trainers in reading to use in their trainings for leader-teachers. In June, G-PriEd gathered information from counterparts to inform the upcoming work of the reading and math module writing working groups and prepared a matrix covering the full content of the training.

G-PriEd staff met with Maia Inasaridze, head of the General Skills Department, and her colleagues at the National Examinations Center (NEC) to learn about the structure and development of teacher certification exams. NEC representatives described the structure of exams, as well as the types of questions included, and said that the development of the 2013 exams for teacher certification will begin in September 2012. They also shared sample tests for elementary school teachers for both the professional skills and subject-area exams. G-PriEd staff will use information to revise the training modules for Literacy and Numeracy Leaders.

G-PriEd's Reading Improvement Director and Math Improvement Director worked (separately) with subject experts at TPDC (Natia Natsvlishvili, Nino Labartkava, and

Zakaria Giunashvili) to develop a training matrix that covered program goals, program structure, program outcomes, program resources, and the alignment between program content and teacher standards and teacher certification requirements. The matrix was also reviewed and signed off on by Teona Kupatadze (after review by USAID). This matrix was reviewed by international consultant, Sylvia Linan-Thompson, who recommended streamlining and simplifying the content to emphasize the differentiated teaching approach and the multiple instructional strategies to teach reading that can support this teaching approach.

In addition, G-PriEd staff developed a draft schedule for 20 days of training that combines the reading, math, and coaching training and includes information about session content, topics covered, and required resources. Literacy/numeracy leaders who are the single leader-teachers in their schools will attend all 20 days of training. Literacy leaders will attend the coaching and reading sections, and numeracy leaders will attend the coaching and math sections. G-PriEd staff will develop separate matrices for individual reading and math training in July.

Finally, international consultant Rita Bean reviewed the material for the coaching module and suggested some changes to participant exercises to allow for more reflection on practice and to include more factual responses on the evaluation of the coaching training days. In addition, she reviewed the training matrix for the coaching days and made a few suggestions. Her feedback is being incorporated into the drafts of the training module and training matrix.

- *Adapt materials for use in minority-language schools.* G-PriEd staff also met with Ana Keadze, Head of General Education Development Division at MES, to learn about the MES' upcoming plans for multilingual education in minority schools. Ms. Keadze informed the team about the new textbooks to be used in minority-language schools in Georgia, the pilot program of multilingual education, certification of minority-language school teachers (including the certification of multilingual teachers), Georgian language for Future Success, and Language Houses in the regions resided by ethnic minorities. After the meeting Ms. Keadze shared a list of the 40 schools that participated in MoES pilot multilingual education project. It was agreed that G-PriEd may reach out teachers in these schools and recruit them to serve as national trainers as needed.

In addition, G-PriEd staff met with Shalva Tabatadze, director of the Center for Civic Integration and Interethnic Relations (CCIIR), and other CCIIR staff to discuss various MES programs directed at promoting the use of bilingual education (the MES' bilingual pilot) and promoting improved Georgian language in minority-language schools (such as Teaching Georgian as a Second Language and Teaching Georgian for Future Success). CCIIR staff particularly emphasized the potential resource the 70 teachers of Teaching Georgian as a Second Language could offer the project, given their experience as teachers and experience working in the minority-language regions. CCIIR staff also raised questions about the number of teachers in minority-language regions (either teachers of Georgian or of math) that would be able to understand training in Georgian. As a result, the project is considering whether to introduce a requirement that a literacy leader be proficient in Georgian in order to be eligible to participate in the project's training program.

Given CCIIR's recommendation that G-PriEd consider leveraging the 70 teachers from Teaching Georgian as a Second Language as a resource, G-PriEd staff met with Mako Chilashvili, coordinator of the Teach Georgian as a Second Language program. Ms. Chilashvili emphasized that the teachers involved in the program have gone through the series of intensive training and, therefore, are experienced in providing effective coaching to other teachers. She provided G-PriEd a list of participating schools, and G-PriEd identified that 27 of them are project pilot schools. In these schools, these teachers might be able to provide support to the Literacy Leader in the Georgian language and teaching Georgian as a second language.

Task 3: Support national trainers to train leader-teachers in pilot schools (approximately 209 Georgian and 109 ethnic minority schools) to teach reading and math

Design schedule of training for leader-teachers, and assign national trainers to geographically proximate cohorts of teacher-leaders. In June, G-PriEd staff began developing the training plan for the upcoming training. Staff identified the number, size, and location of cohorts for both Georgian- and minority-language training groups. No cohort is larger than 24 people, and there are 15 cohorts for Georgian-language schools and 12 cohorts for minority-language schools. In addition, staff assigned schools to each identified cohort. In July, staff will associate each cohort with identified trainers and confirm their availability.

Output 2: Increase the Availability and Use of Age and Language-Appropriate Reading Materials and Supplies for Learning Math

Task 5: Develop age- and language-appropriate reading and math materials (paper-based and electronic)

In June, G-PriEd staff identified the National Curriculum and General Education Development Department (NCGEDD) as the primary partner for the supplementary materials and will begin work on the materials in July.

Outcome 2: Reading and Math Delivery Systems Improved

Output 1: Promote Professional Standards and Support Professional Development for Teachers and Administrators

Task 1: Expand the project-developed school-based professional development model and support appropriate policy changes to improve teacher professional development

Recommend and support the implementation of effective mechanisms to support improved teacher induction and retention (including rural and mountain schools and other difficult-to-work areas). G-PriEd's Teacher Effectiveness Director conducted a desk research and developed a background paper on teacher policies in Georgia. The paper presents the following information on teachers:

- Qualification system for teachers
- Teacher standards
- Teacher pre-service education

- Teacher induction program
- Teacher certification
- In-service teacher education
- Teacher salaries
- Programs to address teacher shortage in rural and minority regions.

To ground truth and expand this information about current and past teacher policies in Georgia, G-PriEd staff and Education Specialist Erica Rounsefell met with (1) Nino Kutateladze, Education Specialist at World Bank, to learn more about the Bank’s past work in teacher recruitment, induction, and retention, and (2) Sopo Gorgodze, TPDC’s former director, to learn more about the genesis of the teacher induction program and programs to address teacher shortages in rural and minority regions.

Next, in collaboration with Education Specialist Erica Rounsefell, G-PriEd’s Teacher Effectiveness Director generated a plan for developing a policy paper on teacher induction and retention. The plan specifies activities to be undertaken, as well as their time, responsible parties and deliverables. The plan also includes roles and responsibilities of an international consultant and advisory board. In addition, it includes a research plan (including activities and focus group questions) to gather on-the-ground information about the challenges teachers face and what they feel is needed to better prepare and retain their colleagues. This plan has been shared with USAID, and will be discussed with the MES and TPDC in July

Output 2: Strengthen the System for Testing Reading and Math Outcomes Through Classroom Diagnostic Assessments

Task 3: Develop classroom diagnostic assessment tools in reading and math

Create task forces to develop diagnostic assessment tools. In June, G-PriEd resubmitted the names for the reading and math diagnostic assessment task forces to the MES Reference Committee for their professional feedback on these individuals. By the end of June, all feedback had been received. As a result of this feedback, G-PriEd removed two candidates from consideration.

Develop diagnostic assessment tools and methodology for administration; adapt as needed for the Georgian as a Second Language learners. In early June, international consultant Julie Alonzo worked with G-PriEd’s Reading Improvement Director to begin developing a conceptual framework for the diagnostic assessment in reading. Due to complications in the reference process with MES, Ms. Alonzo was unable to meet with the diagnostic assessment task force. However, she prepared a conceptual framework for consideration by the group (see Annex A). Based on her review of the characteristics of the Georgian language, she recommended the diagnostic assessment cover five areas: phonological awareness, the alphabetic principle, oral reading fluency, vocabulary, and reading comprehension. Table 1 describes the specifics of these recommended tests and the grade level in which they are recommended.

Table 1. Description of the Measures Used for Screening Students for Risk of Reading Failure

Name	Description	Grades for Screeners									
		1			2			3	4	5	6
		F	W	S	F	W	S				
Phoneme Segmenting	Individually-administered, 1 minute test. Assessor says a word; student segments the word into its constituent phonemes.	x	X	x							
Syllable Segmenting	Individually-administered, 1 minute test. Assessor says a word; student segments the word into its constituent syllables.	x	X	x							

Name	Description	Grades for Screeners									
		1			2			3	4	5	6
		F	W	S	F	W	S				
Letter Sounds Fluency	Individually-administered, 30 second test. Student says the sounds associated with the letters of the Georgian alphabet from a one-page paper while assessor marks any errors on administrator copy.		X	x	x						
Word Reading Fluency	Individually-administered, 1 minute test. Student reads aloud from a grade-level chart of sight words while assessor marks any errors on administrator copy.		X	x	x	x					
Passage Reading Fluency	Individually-administered, 1 minute test. Student reads aloud from a grade-level appropriate passage while assessor marks any errors on administrator copy.				x	x	x	x	x	x	x
Vocabulary	Group-administered paper/pencil test. Key content vocabulary words are presented to the student in the context of sentences. Students select the answer choice that most closely fits the meaning of the word as it is used in that context. 15 vocabulary words. Students have 10 minutes to complete test.		X	x	x	x	x	x	x	x	x
Comprehension: Narrative Text	Group-administered paper/pencil test. Students read grade-level appropriate passages emphasizing narrative text and answer 15 multiple choice questions related to the passage. Students have 30 minutes to complete test.							x	x	x	x
Comprehension: Informational Text	Group-administered paper/pencil test. Students read grade-level appropriate passages emphasizing informational text and answer 15 multiple choice questions related to the passage. Students have 30 minutes to complete test.							x	x	x	x
Total Time (in Minutes) Needed for Individual Assessment (includes time to give students directions)		4	6	6	6	4	2	2	2	2	2
Total Time (in Minutes) Needed for Group Assessment		-	10	10	45	45	45	75	75	75	75

(x =administered as part of the screener at that grade/session for baseline, year 1)

In June, international consultant John Olson worked with G-PriEd’s Math Improvement Director to begin developing a conceptual framework for the diagnostic assessment in math. Due to complications in the reference process with MES, Mr. Olson was unable to meet with the diagnostic assessment task force. However, he prepared a conceptual framework for consideration by the group (see Annex B).

Task 4: Conduct a baseline study of the reading and math levels with the use of classroom diagnostic tools

Create the research design, methodology, and plan for analysis and reporting of the impact evaluation (including baseline information) of project activities in pilot schools. Drawing on the expertise of Ms. Alonzo and Mr. Olson, G-PriEd staff has begun drafting the design for an impact assessment of G-PriEd interventions. In June, G-PriEd’s M&E specialist reviewed documents detailing how USAID has conducted impact assessments of reading and math competencies in the past and integrated this experience into the draft design document for G-PriEd’s impact assessment.

Output 3: Strengthen the System for Testing Reading and Math Outcomes Through National Assessments Against Objectives of National Curricula

Task 7: Build the capacity of the NCEQE to conduct national assessments

In collaboration with the World Bank, develop a capacity building plan for the NCEQE. In June, the World Bank hosted national assessment experts Vincent Greaney and Tom Callaghan to meet with the NCEQE and discuss with them a plan for building their internal capacity to conduct national assessments. Mr. Greaney and Mr. Callaghan drafted a proposed capacity building plan covering test/questionnaire development, item analysis, data preparation/validation, report writing for policy impact, etc. The World Bank is proposing to collaborate with USAID and the Millennium Challenge Corporation in implementing this capacity building plan. G-PriEd staff met with World Bank staff to explore avenues of possible collaboration.

Outcome 3. Community and Public Engagement, Accountability, and Transparency Enhanced

Output 1: Promote Expanded Student Participation in Reading/Math Activities and Parent Engagement in Children's Reading/Math Outcomes Through School-Based Committees and Implementation Plans

Task 1: Support development and implementation of a Georgian model of parent engagement and promotion of expanded reading/math activities

Work with MES to develop a model of parent engagement that supports improved reading and math outcomes. In June, G-PriEd staff presented the draft conceptual framework developed by international consultant Ron Mirr to the MES' Parent Engagement Working Group and listened to their lessons learned from their study tours. Unfortunately, Mr. Mirr cannot continue to work with G-PriEd and the project is recruiting a separate international expert. In June, G-PriEd staff finished recruitment of a local parent engagement consultant, and is ready to begin focus group research once the MES gives the go ahead.

Output 2: Strengthening Community and Education Stakeholder Access to and Use of Education Data for Local Decision-Making

No activities under this output were implemented during this reporting period.

ANNEX A: DRAFT GEORGIAN FORMATIVE ASSESSMENT OF READING CONCEPTUAL FRAMEWORK

Conceptual Framework

Introduction

The Georgian Formative Assessment of Reading, grades 1-6, builds on a long tradition of literacy instruction in Georgia, extending back well over 100 years. This tradition, which includes a clear national focus on ensuring a literate population, has been successful for decades for most students in Georgian schools. The Georgian Formative Assessment of Reading adds another tool that will help Georgian teachers ensure that all students not only master the basics of reading, but that they graduate from their formal schooling able to comprehend the most challenging texts.

Such formative reading assessments have been used successfully in countries such as the United States, New Zealand, Australia, the United Kingdom, and Singapore, where they are now a regular part of the educational systems. In developing the Georgian Formative Assessment of Reading, we bring evidence-based best practice from these educational world leaders to our region. With the creation of these formative assessments, Georgian teachers will have at their disposal research-based tools on par with the tools available to educators in other countries with similarly strong educational systems. As such, the Republic of Georgia will be an educational innovator in this region of the world.

Designed to provide teachers with the information they need to improve learning outcomes, these formative assessments will help identify students who are potentially at risk of school failure and give teachers information they can use to make informed decisions about providing appropriate educational supports for their students. Sub-tests can be used to monitor the progress that students are making in gaining the critical skills and specific competencies outlined in the Georgian language curriculum.

In keeping with the curriculum adopted by the Georgian Ministry of Education and Science as well as research-based international-best practice in developing strong readers, the Georgian Formative Assessment in Reading will be organized into five components: (1) phonemic awareness, (2) alphabetic principle, (3) fluency, (4) vocabulary, and (5) comprehension.

These components align with the progression of emphases in the Georgian national curriculum, with the early literacy measures primarily useful for students in their first year of formal instruction in the Georgian language, the oral reading fluency measures most useful for students in the next three years, and the vocabulary and comprehension measures most useful for students in their fifth and sixth years of formal instruction in the Georgian language.

It should be noted that this structure related to the assessments is not intended to suggest that teachers in the early years of instruction should focus only on early literacy skills. Fluency, vocabulary, and comprehension (both of narrative and informational text) are an important part of instruction at each grade level. However, the foundational skills related to phonemic awareness and phonological processing (those skills measured by our early literacy tests) are so critical for later reading success that we focus on identifying gaps in students' development of these important skill areas early on, when teaching strategies can most easily be modified to ensure that students are progressing appropriately.

A key component of the early literacy measures is the degree to which students have attained automaticity. Automaticity is so important to measure in these assessments because the speed and accuracy with which students are able to segment words into their constituent phonemes and syllables, identify the sounds that letters make, as well as read connected text are key factors that differentiate between students who will later struggle as readers and those who will progress at an expected rate.

The Georgian language has unique attributes that must be considered when developing formative assessments in reading that will of use to teachers here. These attributes make the assessments developed for use in Georgia different in important ways from measures developed for use in countries with different language backgrounds. The Georgian Formative Assessment of Reading is not a translation of measures used in other countries. Rather, it is an assessment designed specifically for the unique characteristics of the Georgian language and the Georgian approach to teaching reading.

Improving Learning Outcomes

As in other countries recognized as world leaders in education, with the adoption of these formative assessments, Georgian teachers will not only be able to identify at the start of the year students who need additional focused instruction to avoid falling behind their peers, they will be able to identify the specific skill areas these students need to focus on. This formative information will enable teachers to plan their instruction more efficiently, helping ensure that Georgian students reach their full potential.

Other countries that have adopted formative assessments have reported improvements in student learning outcomes. In New Zealand, for instance, the Reading Recovery program, which uses formative assessments to help teachers identify students' learning needs and monitor the progress they make while receiving one-on-one tutoring, resulted in positive effects on students' alphabetic skills and general reading achievement outcomes ([http://www.readingrecovery.ac.nz/research/download /WWW_Reading_Recovery_031907.pdf](http://www.readingrecovery.ac.nz/research/download/WWW_Reading_Recovery_031907.pdf)). In the United States, a key component of the Response to Intervention (RTI) approach to ensuring student achievement is the use of school-wide formative assessments or curriculum-based measures (<http://www.rti4success.org>).

Although Georgian elementary teachers already benefit from a well-articulated national curriculum and standards for reading, they lack a common assessment that will give them the type of formative information their colleagues in other leading nations enjoy. The Georgian Formative Assessment of Reading addresses this important need.

Reading Fluently Does Not Mean Reading Fast

It is important that both teachers and students understand that the purpose of the Georgian Formative Assessment is to get a better idea of what reading skills students have already mastered and what skill areas may need additional work. Students should be encouraged to try to do well on the test, but these tests should not be used for the purpose of grading.

Some of the measures (particularly those for students in Grade 1) include the use of timing students' rate of doing something (segmenting words into phonemes or syllables and reading aloud). It is important to emphasize that these are not "speed contests". In many cases, if students focus too much on getting through the assessment quickly, or if teachers put too much emphasis on increasing reading speed instead of reading the passage with good intonation and emphasis, they will be making a mistake.

Such fluency measures provide insight into how well students have internalized the skill being assessed. In reading aloud, for instance, fluent readers recognize the patterns that words make and are able to read words or groups of words automatically, without having to slow down to read them letter by letter or syllable by syllable. As more and more words become internalized in this way, students are able to make their way through a passage with accuracy and pacing that simulates oral speech patterns. The curriculum recognizes the importance of reading well, including standards for oral reading with intonation as early as Grade 3 and continuing through Grade 6.

Format of the Georgia Formative Assessment of Reading

The Georgia Formative Assessment of Reading is designed to provide maximum information with a minimum of disruption in the daily activities of students and teachers. Based on years of literacy research across many other languages and countries as well as the need for developmental appropriateness, the early literacy and oral reading fluency assessments are short timed measures designed for one-on-one administration while the vocabulary and comprehension measures are longer and designed for group-administration.

The assessment has two equally important components. The screening assessments are administered to all students at a grade level with the goal of identifying those who need additional, focused instruction to ensure their successful development as readers. Those students who score below the 20th percentile on the screening assessment are identified as being potentially at risk for reading failure and are thus provided additional instructional supports to address their needs. Teachers then use the progress monitoring assessments aligned with students' specific skill deficits to assess the impact their instruction is having on helping the students catch up to their grade-level peers. The final screening assessment can be used by teachers to identify areas for future professional development as well as to provide parents and students with information about skill areas that might benefit from additional practice in specific skill areas during the summer vacation months.

Developing Assessments with Direct Application to Classroom Instruction

To be most useful, formative assessments need to do a variety of tasks. They need to reliably identify those students who are at risk for reading failure. They also need to provide teachers with formative information about the specific skills their students have mastered and those that need additional development. Finally, they should provide teachers information about the degree to which the instructional interventions they are providing are effectively meeting student needs. A single test cannot achieve all these goals. However, a series of assessments carefully constructed to work in concert with one another, can fulfill these needs and more.

Building on successful international models of curriculum based measurement (CBM) with documented evidence of having improved the effectiveness of reading instruction (eg., DIBELS, easyCBM), the Georgian Formative Assessment in Reading will include both longer benchmark / screening assessments and shorter progress monitoring assessments aligned to the Georgian National Curriculum in Reading. Different assessments will be developed for each grade level: grades 1 – 6.

Screening measures will include two test forms of comparable difficulty, allowing for screening twice per year. Progress monitoring measures will include 4-8 alternate test forms of comparable difficulty, enabling teachers to track the progress their students are making in critical skill areas in between administration of the screening measures.

NOTE: In Year 1, we need to administer test forms in fall, winter, and spring to be able to gather normative performance data. The winter test form can later be used for progress monitoring, if 2 or 1 screener per year is the model the Task Force recommends adopting.

Table 1
*Description of the Measures Used for Screening Students for Risk of Reading Failure
(x =administered as part of the screener at that grade/session for baseline, year 1)*

Name	Description	Grades for Screeners									
		1			2			3	4	5	6
		F	W	S	F	W	S				
Phoneme Segmenting	Individually-administered, 1 minute test. Assessor says a word; student segments the word into its constituent phonemes.	x	x	x							
Syllable Segmenting	Individually-administered, 1 minute test. Assessor says a word; student segments the word into its constituent syllables.	x	x	x							
Letter Sounds Fluency	Individually-administered, 30 second test. Student says the sounds associated with the letters of the Georgian alphabet from a one-page paper while assessor marks any errors on administrator copy.		x	x	x						
Word Reading Fluency	Individually-administered, 1 minute test. Student reads aloud from a grade-level chart of sight words while assessor marks any errors on administrator copy.		x	x	x	x					
Passage Reading Fluency	Individually-administered, 1 minute test. Student reads aloud from a grade-level appropriate passage while assessor marks any errors on administrator copy.				x	x	x	x	x	x	x
Vocabulary	Group-administered paper/pencil test. Key content vocabulary words are presented to the student in the context of sentences. Students select the answer choice that most closely fits the meaning of the word as it is used in that context. 15 vocabulary words. Students have 10 minutes to complete test.		x	x	x	x	x	x	x	x	x
Comprehension : Narrative Text	Group-administered paper/pencil test. Students read grade-level appropriate passages emphasizing narrative text and answer 15 multiple choice questions related to the passage. Students have 30 minutes to complete test.							x	x	x	x
Comprehension : Informational Text	Group-administered paper/pencil test. Students read grade-level appropriate passages emphasizing informational text and answer 15 multiple choice questions related to the passage. Students have 30 minutes to complete test.							x	x	x	x
Total Time (in Minutes) Needed for Individual Assessment (includes time to give students directions)		4	6	6	6	4	2	2	2	2	2
Total Time (in Minutes) Needed for Group Assessment		-	1	1	45	45	45	7	7	7	7

		0	0				5	5	5	5
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Out of Grade-Level Testing

To gain an accurate estimate of student skill in comparison to the national norm group, screening assessments **must** be administered at the students’ grade level. For the purpose of progress monitoring, however, teachers select the grade level and measure type that most closely aligns with the specific knowledge and skills on which instruction is focused. For most students in Georgian schools, this will continue to be on-grade-level measures. However, some students (those who are far behind their peers as well as GSL students) may need remedial instruction in skills that are typically covered in earlier grades. For these students, use of a lower grade’s progress monitoring measure may be the most useful.

Application for Language-Minority Students

The first year the assessment is available should be considered a year of discovery, particularly as relates to the performance of GSL students on these assessments.

For students enrolled in language-minority schools who are learning Georgian as a second language, the progression may move more quickly, as some of the early literacy skills may transfer from one language to another. The degree to which this transfer occurs depends, to a great extent, on the similarities between the languages in question. The more similar the non-Georgian language is to Georgian, the more likely it is that older students enrolled in language-minority schools may be able to progress quickly to the vocabulary and comprehension measures. In using the Georgian Formative Assessment of Reading with GSL students, it is important to keep in mind that the tests are designed to provide information about student reading ability in comparison to native speakers of Georgian.

The Georgian curriculum standards for GSL students outlines expectations that GSL students will become proficient in the Georgian language, but also acknowledges that their proficiency in Georgian may not be the same as their same-grade native Georgian language peers. Thus, GSL student performance on the Georgian Formative Assessment of Reading may not be the same as the performance on native Georgian speakers. This is especially true of the measures of vocabulary and comprehension. Although the skill areas assessed by the Georgian Formative Assessment of Reading will be equally relevant for GSL students as they are for native Georgian-language students, the measures designed for use with students in specific grades may need to shift for appropriate use in the GSL context. These questions and more will be addressed during the first year of implementation as we learn more about how best to use these formative assessments to provide GSL teachers useful information.

Comprehensive Approach for Data Collection and Informed Decision Making

The Georgian Formative Assessment of Reading provides teachers with information that will enable them to ensure that their students are developing reading skills in keeping with national expectations. The assessment is aligned to the national curriculum and reflects the skills that students and teachers are working on at each grade level. These measures provide teachers, parents, and students with a way to monitor individual progress toward becoming well-educated and highly-literate adults.

The Georgian Formative Assessment is intended to give teachers the information they need to make informed decisions about instruction for their students. Students who perform well on this assessment are expected to perform well on national and international assessments of reading.

Professional Development and Georgian Formative Assessment of Reading

This assessment is designed in conjunction with a comprehensive teacher professional development program for improving reading outcomes. The sub-tests align with the national curriculum and with teacher education practices for teaching reading. Mentor teachers familiar with teaching reading and using assessment

information to help guide instructional decision making will work with elementary teachers throughout the country to ensure that the assessment results are used to help improve student reading outcomes.

The screening assessment provides teachers with information about the specific skill areas their students are struggling with. This information can be used to help inform teacher educators and professional development specialists about areas of need of focus across the country. Within the GSL student population, this information can help identify areas where the current approach to teaching the Georgian language may benefit from adjustment.

Methodology of the Assessment

In this section, the methodologies to be used in the design of the Georgian Formative Assessment of Reading are described. In keeping with international proven practices and the unique characteristics of reading in the Georgian language, methodologies vary by individual sub-test. Each sub-test is thus described in its own section.

Phoneme Segmenting

Purpose

Phoneme Segmenting measures students' ability to segment words into their constituent phonemes. It is a measure of students' phonemic awareness. For students in the pre-alphabetic phase, this measure provides information about students' underlying linguistic processing, critical to later reading development.

How Administered

The Phoneme Segmenting measure is administered orally, with Assessors have a piece of paper displaying words. They read the directions aloud to the students, "I am going to say a word. I want you to tell me every sound you hear in the words, one at a time. For example, if I say _____, you would tell me __ / __ / __ / __ . If I say _____, you would tell me __ / __ / __ / __ / __ / __. If I say _____, you would tell me __ / __ / __. Do you understand?" Once they are certain students understand what is expected, the assessor says the first word. As the student tells them the phonemes, the assessor marks each phoneme the student says correctly. Errors are not marked. If the student says additional phonemes, they are not marked. Once the student finishes one word, the assessor goes on to the next. This continues until one minute has passed. At the end of one minute, the Assessor thanks the student and goes on to the next measure type.

Material Needed for Administration

- One paper copy of the test form per student.
- Clipboard to hold the test form out of the student's view.
- Stopwatch showing seconds (or timer indicating the end of one minute).
- Pencil to mark errors.

Number of Items

Test forms should contain approximately 70-90 phonemes (but should be able to fit on one side of a single sheet of paper)

Scoring

Students score 1 point for every phoneme they correctly segment. If they say more than one phoneme at a time, they only get a point for the first phoneme they produce (they score no points for the phonemes that they combine with that first phoneme).

To score this assessment, assessors mark a line ___ under each phoneme as the student says it aloud. At the end of 1 minute, assessors mark the last phoneme students read by placing a bracket] after the final phoneme. Once all tests have been administered, the assessor counts the total number of phonemes (based on the # of ___ 's on the page) and enters this score in the "Total Score" line at the bottom of the test form.

Frequency of Administration

The Phoneme Segmenting test is intended to be administered monthly for students who are receiving specific instruction in this area. It is most appropriate for use when students are not yet reading connected text words.

Description of Test Creation Process

Task force members write down a list of common words that most students in Grade 1 would be familiar with. These words should *not* be the words commonly used to introduce students to the letters of the alphabet (because that would make the assessment more a test of students' memory rather than their underlying skill in phonemic awareness). Each test form should begin with fairly easy words to segment, becoming increasingly more challenging as the test continues. See the example of a Phoneme Segmenting test form in the English language on the next page to see what the final test form looks like.

Student Name: _____

Date: _____

Phoneme Segmenting

Procedures

This test is administered entirely orally. Do NOT show the student this scoring sheet. There is no student copy of this test because the student is listening and responding to the words supplied by the assessor.

Directions

Say to the student: **"I am going to say a word, and you will give me the sounds you hear in that word. If I say *cap*, you will say /c/ /a/ /p/. If I say *it*, you will say /i/ /t/. If I say *top*, you will say /t/ /o/ /p/. Let's try."**

Note: This is a 60 second timed test.

Scoring

- Underline each phoneme the student says correctly.
- Students are NOT penalized for saying extra phonemes.

Item	Teacher Says	Student Says	Number Correct	Item	Teacher Says	Student Says	Number Correct
1	Tap	/t/ /a/ /p/	___ / 3	11	leaping	/l/ /ea/ /p/ /i/ /ng/	___ / 5
2	down	/d/ /ow/ /n/	___ / 3	12	moat	/m/ /oa/ /t/	___ / 3
3	chef	/ch/ /e/ /f/	___ / 3	13	apron	/a/ /p/ /r/ /o/ /n/	___ / 5
4	must	/m/ /u/ /s/ /t/	___ / 4	14	mean	/m/ /ea/ /n/	___ / 3
5	Win	/w/ /i/ /n/	___ / 3	15	pack	/p/ /a/ /ck/	___ / 3
6	Rant	/r/ /a/ /n/ /t/	___ / 4	16	main	/m/ /ai/ /n/	___ / 3
7	smile	/s/ /m/ /i/ /le/	___ / 4	17	wrath	/wr/ /a/ /th/	___ / 3
8	huddle	/h/ /u/ /dd/ /le/	___ / 4	18	soak	/s/ /oa/ /k/	___ / 3
9	jump	/j/ /u/ /m/ /p/	___ / 4	19	snail	/s/ /n/ /ai/ /l/	___ / 4
10	open	/o/ /p/ /e/ /n/	___ / 4	20	lime	/l/ /i/ /me/	___ / 3

Correct _____ / 71

Syllable Segmenting

Purpose

Syllable Segmenting measures students' ability to segment words into their constituent syllables. It is a measure of students' phonemic awareness. For students in the pre-alphabetic phase, this measure provides information about students' underlying linguistic processing, critical to later reading development.

How Administered

The Syllable Segmenting measure is administered orally, with Assessors have a piece of paper displaying words. They read the directions aloud to the students, "I am going to say a word. I want you to tell me every syllable you here in the words. For example, if I say _____, you would tell me __ / __ . If I say _____, you would tell me __ / __ / __ / __ / __ . If I say _____, you would tell me __ / __ / __ . Do you understand?" Once they are certain students understand what is expected, the assessor says the first word. As the student tells them the syllables, the assessor marks each one the student says correctly. Errors are not marked. If the student says additional syllables, they are not marked. Once the student finishes one word, the assessor goes on to the next. This continues until one minute has passed. At the end of one minute, the Assessor thanks the student and goes on to the next measure type.

Material Needed for Administration

- One paper copy of the test form per student.
- Clipboard to hold the test form out of the student's view.
- Stopwatch showing seconds (or timer indicating the end of one minute).
- Pencil to mark errors.

Number of Items

Test forms should contain approximately 100 syllables (but should be able to fit on one side of a single sheet of paper)

Scoring

Students score 1 point for every syllable they correctly segment. If they say more than one syllable at a time, they only get a point for the first syllable they produce (they score no points for the syllables that they combine with that first syllable).

To score this assessment, assessors mark a line __ under each syllable as the student says it aloud. At the end of 1 minute, assessors mark the last syllable students read by placing a bracket] after the final syllable. Once all tests have been administered, the assessor counts the total number of syllables (based on the # of __ 's on the page) and enters this score in the "Total Score" line at the bottom of the test form.

Frequency of Administration

The Syllable Segmenting test is intended to be administered monthly for students who are receiving specific instruction in this area. It is most appropriate for use when students are not yet reading connected text words.

Description of Test Creation Process

Task force members write down a list of common words that most students in Grade 1 would be familiar with. These words should *not* be the words commonly used to introduce students to the letters of the alphabet (because that would make the assessment more a test of students' memory rather than their underlying skill in phonemic awareness). They should also be different than the words used for the phoneme segmenting test

(to avoid confusing students). Each test form should begin with fairly easy words to segment, becoming increasingly more challenging as the test continues. See the example of a Syllable Segmenting test form in the Spanish language on the next page to see what the final test form looks like.

Student Name: _____ Date: _____

Syllable Segmenting

Procedures

This test is administered entirely orally. Do NOT show the student this scoring sheet. There is no student copy of this test because the student is listening and responding to the words supplied by the assessor.

Directions

Say to the student: **“Voy a decir una palabra y debes responder con las sílabas que oyes en la palabra. Por ejemplo, si digo *cama*, debes decir /ca/ /ma/. Si digo *agua*, debes decir /a/ /gua/. Si digo *escuela*, debes decir /es/ /cuel/ /la/. Ahora, lo tratamos.”**

Note: This is a 60 second timed test.

Scoring

- Underline each syllable the student says correctly.
- Students are NOT penalized for saying extra syllables.

Item	Teacher Says	Student Says	Number Correct	Item	Teacher Says	Student Says	Number Correct
1	modo	/mo/ /do/	___ / 2	12	joya	/jo/ /ya/	___ / 2
2	leche	/le/ /che/	___ / 2	13	cita	/ci/ /ta/	___ / 2
3	boca	/bo/ /ca/	___ / 2	14	antes	/an/ /tes/	___ / 2
4	Niña	/ni/ /ña/	___ / 2	15	mejor	/me/ /jor/	___ / 2
5	cubo	/cu/ /bo/	___ / 2	16	ganamos	/ga/ /na/ /mos/	___ / 3
6	tuyo	/tu/ /yo/	___ / 2	17	coyote	/co/ /yo/ /te/	___ / 3
7	llora	/llo/ /ra/	___ / 2	18	pepino	/pe/ /pi/ /no/	___ / 3
8	burro	/bu/ /rro/	___ / 2	19	visita	/vi/ /si/ /ta/	___ / 3
9	mucho	/mu/ /cho/	___ / 2	20	perrito	/pe/ /rri/ /to/	___ / 3
10	lana	/la/ /na/	___ / 2	21	escucha	/es/ /cu/ /cha/	___ / 3
11	digo	/di/ /go/	___ / 2	22	contento	/con/ /ten/ /to/	___ / 3

Correct _____ / 51

Letter Sound Fluency

Purpose

Letter Sound Fluency measures students' knowledge of the sounds made by each of the letters of the alphabet. It is a measure of students' alphabetic principle but also gives information about students' ability to decode / phonics ability.

How Administered

The Letter Sound Fluency measure is administered one on one. Students are given a sheet of paper with letters printed on it, and assessors have a similar answer sheet, where they follow along and mark any errors the students make. Assessors read the directions aloud to the students, "I want you to tell me the sounds that each of these letters make. You will start reading at the top of the page (assessor points to the first letter) and read across each row before going to the next row. If you do not know the sound a letter makes, I will tell you the sound after three seconds, and then you can go on. Do you understand?" Once they are certain students understand what is expected, the assessor tells the student they may begin.

The Assessor begins timing when the student reads the first letter sound. As the student tells them the letter sounds, the assessor follows along on the answer sheet, marking any letter sounds the student says incorrectly. This continues until 30 seconds have passed. At the end of 30 seconds, the Assessor thanks the student and goes on to the next measure type.

Material Needed for Administration

- One student copy of the test form (can be re-used for multiple students).
- One assessor copy of the test form per student.
- Clipboard to hold the test form out of the student's view.
- Stopwatch showing seconds (or timer indicating the end of 30 seconds).
- Pencil to mark errors.

Number of Items

Test forms should contain all 33 letters of the Georgian alphabet, each repeated twice (once in the first half of the form, the second time in the second half of the form). Note: one letter will appear only once. This should be the easiest letter, generally speaking.

Scoring

Students score 1 point for every letter sound they correctly read. If a student says the wrong sound, the assessor marks a slash / through the letter (this is considered an error). If the student corrects the sound, the assessor indicates that the student 'self-corrected' ('sc') on the letter. Self Corrections are not counted as errors when adding up the score.

At the end of 30 seconds, assessors mark the last letter sound students read by placing a bracket] after the final letter. To calculate the final score, the assessor subtracts the # of errors from the # of sounds to arrive at the score "Total Sounds Read per 30 seconds".

Frequency of Administration

The Letter Sound Fluency test is intended to be administered monthly for students who are receiving specific instruction in this area. It is most appropriate for use when students are not yet reading connected text words.

Description of Test Creation Process

Group all the letters of the alphabet into clusters representing relative difficulty. Organize them into a chart on a single side of one sheet of paper, using the following distribution rules.

Description of Row						# of Letters
5 easiest letter sounds (in random order)						5
Next 5 easiest (in random order)						10
Next 5 easiest (in random order)						15
Next 5 easiest (in random order)						20
Next 5 easiest (in random order)						25
Next 5 easiest (in random order)						30
3 hardest letter sounds in first 3 boxes, 2 easy letter sounds in final 2 boxes.						35
Next 5 easiest (in random order)						40
Next 5 easiest (in random order)						45
Next 5 easiest (in random order)						50
Next 5 easiest (in random order)						55
Next 5 easiest (in random order)						60
Next 5 easiest (in random order)						65

Refer to the example of an English language Letter Sound Fluency measure (both Assessor and Student Copy) on the pages that follow.

Letter Sounds: Assessor Copy

Procedures

Place the probe marked "Letter Sounds Student Copy" in front of the student. Read the directions to the student. When you are finished administering the test, enter the student results on the website for scoring and record keeping.

Directions

"When I say begin, say the sound each letter makes. I will stop you after 30 seconds. Start at the top of the page and read across each row." Demonstrate by sweeping your finger from left to right across the first row. **"Move your marker down after each row."** Demonstrate. **"Any questions?... Ready?...Begin."** At 30 seconds, say **"Stop."** Mark the last letter with a bracket.]

Note: This is a 30 second timed test.

Scoring

If student:

- Self corrects, write S.C. above letter sound and count as correct.
- Says incorrect letter sound, slash through letter sound, and count as incorrect.
- Hesitates more than 3 seconds, supply the letter sound and count as incorrect.
- Skips letter, circle the letter and count as incorrect.
- Clearly loses his/her place, point to the next letter.

S	K	U	e	y	5
B	D	V	K	P	10
U	M	Z	s	N	15
L	Ph	A	G	Th	20
Th	g	Ch	F	b	25
Ph	X	R	i	Sh	30
K	h	U	s	Z	35
K	x	A	v	m	40
F	N	S	H	u	45
G	A	Ch	r	L	50
Qu	b	Th	v	sh	55

Correct _____

Letter Sounds: Student Copy

s	K	U	e	Y
b	D	v	K	P
u	M	z	s	N
L	Ph	A	G	Th
th	g	ch	F	b
ph	X	R	i	Sh
K	h	U	s	Z
K	x	a	v	m
f	N	s	H	u
G	A	Ch	r	L
qu	b	th	v	sh

Word Reading Fluency

Purpose

Word Reading Fluency measures students' ability to read fluently and accurately words presented in isolation. It is a measure of students' oral reading fluency.

How Administered

The Word Reading Fluency measure is administered one on one. Students are given a sheet of paper with words printed on it, in a chart, and assessors have a similar answer sheet, where they follow along and mark any errors the students make. Assessors read the directions aloud to the students, "I want you to read these words. You will start reading at the top of the page (assessor points to the first word) and read across each row before going to the next row. If you do not know the word, I will tell it to you after three seconds, and then you can go on. Do you understand?" Once they are certain students understand what is expected, the assessor tells the student they may begin.

The Assessor begins timing when the student reads the first word. As the student reads, the assessor follows along on the answer sheet, marking any word the student reads incorrectly or skips. This continues until one minute has passed. At the end of 60 seconds, the Assessor thanks the student and goes on to the next measure type.

Material Needed for Administration

- One student copy of the test form (can be re-used for multiple students).
- One assessor copy of the test form per student.
- Clipboard to hold the test form out of the student's view.
- Stopwatch showing seconds (or timer indicating the end of 60 seconds).
- Pencil to mark errors.

Number of Items

Test form should contain 60 words in grade 1 and 120 words in grade 2.

Scoring

Students score 1 point for every word they correctly read. If a student says the wrong word, the assessor marks a slash / through the word (this is considered an error). If the student corrects the word on his own, the assessor indicates that the student 'self-corrected' ('sc') on the test form. Self Corrections are not counted as errors when adding up the score.

At the end of 60 seconds, assessors mark the last word students read by placing a bracket] after the final word. To calculate the final score, the assessor subtracts the # of errors from the # of words read to arrive at the score "Total words read correctly per minute".

Frequency of Administration

The Word Reading Fluency test is intended to be administered monthly for students who are receiving specific instruction in this area. It is most appropriate for use when students are not yet reading connected text words.

Description of Test Creation Process

Members of the Task Force shall create a list of 800 important words, drawing from the curriculum and textbooks at the appropriate grade level, and including important words in language arts, social studies, and science, as well as words important for everyday life “caution” “stop” “exit”, etc.

These words should be organized, roughly, into 12 different groups of approximately equal size. Word groups should be organized in terms of their importance / level of difficulty, with very important and easy words organized into Group 1, less important and more difficult words organized into Group 12, etc.

To create alternate forms of the test, words will be selected from the different groups and shall be placed in random order on the test forms, such that no two test forms will be exactly the same, although some words may be repeated across test forms.

Grade 1 Tests

Description of Row						# of Words
5 words from Group 1						5
5 words from Group 2						10
5 words from Group 3						15
5 words from Group 4						20
5 words from Group 5						25
5 words from Group 6						30
5 words from Group 7						35
5 words from Group 8						40
5 words from Group 9						45
5 words from Group 10						50
5 words from Group 11						55
5 words from Group 12						60

Grade 2 Tests

Description of Row						# of Words
10 words from Group 1						10
10 words from Group 2						20
10 words from Group 3						30
10 words from Group 4						40
10 words from Group 5						50
10 words from Group 6						60
10 words from Group 7						70
10 words from Group 8						80
10 words from Group 9						90
10 words from Group 10						100
10 words from Group 11						110
10 words from Group 12						120

Examples of a Word Reading test in the English language are provided for reference.

Word Reading Fluency: Assessor Copy

Directions: Place the “Word Reading Student Copy” probe in front of the student and say, “**Please read from this list of words. Read across the page and then on to the next row.**” Demonstrate by sweeping your finger from left to right across the first two rows of words. Start timing when the student begins reading. Mark a bracket] after the last word read. If a student self corrects, write S.C. above the word and count as correct. If they say an incorrect word, mark a slash through the word, and count as incorrect. If they hesitate more than 3 seconds, supply the word and count as incorrect. If a student skips a word, circle the word and count it as incorrect.

Note: This is a 30 second timed test.

I	Is	an	and	4
it	He	fast	miss	8
but	Off	she	you	12
my	Try	into	work	16
cut	Say	think	Have	20
eat	Are	under	Other	24
six	Yard	hand	That	28
best	May	left	Girl	32
open	Old	cover	Like	36
grow	Could	new	Test	40
low	Same	below	maybe	44
until	Inside	who	Every	48
wall	Forest	watch	Find	52
hair	Fell	rich	There	56
branch	Lie	few	timeline	60

Correct _____

Word Reading Fluency: Student Copy

I	Is	an	and
it	He	fast	miss
but	Off	she	you
my	Try	into	work
cut	Say	think	have
eat	Are	under	other
six	Yard	hand	that
best	May	left	girl
open	Old	cover	like
grow	Could	new	test
low	Same	below	maybe
until	Inside	who	every
wall	Forest	watch	find

hair	Fell	rich	there
branch	lie	few	timeline



Passage Reading Fluency

Purpose

Passage Reading Fluency measures students' ability to read fluently and accurately from narrative passages. It is a measure of students' oral reading fluency. Poor oral reading fluency is a strong predictor of students who will struggle to understand written materials.

How Administered

The Passage Reading Fluency measure is administered one on one. Students are given a sheet of paper with a narrative passage printed on it, and assessors have a similar answer sheet, where they follow along and mark any errors the students make. Assessors read the directions aloud to the students, "I want you to read this story. You will start reading at the top of the page (assessor points to the first word) and read out loud for one minute. If you do not know a word, I will tell it to you after three seconds, and then you can go on. I want you to try to do your best reading. This is not a speed test. Do you understand?" Once they are certain students understand what is expected, the assessor tells the student they may begin.

The Assessor begins timing when the student reads the first word. As the student reads, the assessor follows along on the answer sheet, marking any word the student reads incorrectly or skips. This continues until one minute has passed. At the end of 60 seconds, the Assessor thanks the student and goes on to the next measure type.

Material Needed for Administration

- One student copy of the test form (can be re-used for multiple students).
- One assessor copy of the test form per student.
- Clipboard to hold the test form out of the student's view.
- Stopwatch showing seconds (or timer indicating the end of 60 seconds).
- Pencil to mark errors.

Number of Items

Each test form consists of a single narrative passage. Sentence length and word choice should reflect the type of words and phrasing that students at that grade level are likely to use when they are speaking. Each passage should have approximately the same number of words as the other passages at that grade level and should fit all on one side of a single sheet of paper.

Scoring

Students score 1 point for every word they correctly read. If a student says the wrong word, the assessor marks a slash / through the word (this is considered an error). If the student corrects the word on his own, the assessor indicates that the student 'self-corrected' ('sc') on the test form. Self Corrections are not counted as errors when adding up the score.

At the end of 60 seconds, assessors mark the last word students read by placing a bracket] after the final word. To calculate the final score, the assessor subtracts the # of errors from the # of words read to arrive at the score "Total words read correctly per minute".

Frequency of Administration

The Passage Reading Fluency test is intended to be administered monthly for students who are receiving specific instruction in this area. It is most appropriate for use when students are reading connected text words.

Description of Test Creation Process

Members of the task force will write 9 narrative stories appropriate in content and language for students in each grade. Each story should have characters, a setting, and a plot with some sort of conflict, climax, and resolution. Following a similar story pattern across all passages makes the interpretation of scores more reliable because it helps ensure that the passages are similar.

Grade Level	Approximate # of Words	# of Paragraphs
2	150	2
3	200	2
4	250	3
5	300	3
6	300	3

Examples of Passage Reading tests in the English language are provided for reference.

Passage Reading Fluency - Student Copy, Grade 3

Kim and her dad got ready to go to the lake. Kim put on her swimsuit and shorts. She found her pail and shovel. Kim's dad got two towels, some sunscreen, and a snack. They put everything in the car. Then, they drove to the lake. Kim's dad parked the car in the lot. Kim did not have any shoes on. The ground was very hot. Her feet hurt. She put on her shoes, and this made her feet feel better. Kim and her dad saw the blue water and the sandy beach. They put their towels on the sand. They put on sunscreen. Kim ran down to the water. The water was a little cold on her feet, but it felt good. She walked into the water more until the water covered her knees. The water did not seem so cold. She dove under the water and got her head wet.

Kim felt a tap on her shoulder. It was her friend Joe. The two of them played in the water. They splashed. They dove to the bottom of the lake to look for snails. They pretended to be sharks. They swam out to a dock in the middle of the lake. They jumped off of the dock over and over. Kim and Joe got tired. They swam back to shore. They walked up the beach to Kim's dad. Her dad gave them a snack. They sat in the sun and built a sandcastle. It was really a great afternoon.

Passage Reading Fluency – Assessor Copy

1. Place the Student Copy in front of the student. Point to the names on the Student Copy as you read them:
“This is a story about Kim and Joe. I want you to read this story to me. You’ll have 1 minute to read as much as you can. When I say “begin,” start reading aloud at the top of the page. Do your best reading. If you have trouble with a word, I’ll tell it to you. Do you have any questions? Begin.”
2. Start the timer.
3. While the student is reading, mark errors with a slash (/).
4. At 1 minute, mark the last word read with a bracket (]).
5. When the student gets to a logical stopping place, say **“Stop.”**

<p><u>Kim</u> and her dad got ready to go to the lake. Kim put on her swimsuit and shorts. She found her pail and shovel. Kim’s dad got two towels, some sunscreen, and a snack. They put everything in the car. Then, they drove to the lake. Kim’s dad parked the car in the lot. Kim did not have any shoes on. The ground was very hot. Her feet hurt. She put on her shoes, and this made her feet feel better. Kim and her dad saw the blue water and the sandy beach. They put their towels on the sand. They put on sunscreen. Kim ran down to the water. The water was a little cold on her feet, but it felt good. She walked into the water more until the water covered her knees. The water did not seem so cold. She dove under the water and got her head wet.</p>	<p>15 28 40 55 70 85 99 113 128 141 152</p>
<p>Kim felt a tap on her shoulder. It was her friend <u>Joe</u>. The two of them played in the water. They splashed. They dove to the bottom of the lake to look for snails. They pretended to be sharks. They swam out to a dock in the middle of the lake. They jumped off of the dock over and over. Kim and Joe got tired. They swam back to shore. They walked up the beach to Kim’s dad. Her dad gave them a snack. They sat in the sun and built a sandcastle. It was really a great afternoon.</p>	<p>167 180 194 210 224 240 251</p>

Total Words Read: _____ - # of Errors: _____ = Correct Words: _____

Vocabulary

Purpose

The Vocabulary test measures students' understanding of the meaning of important words, presented in the context of sentences.

How Administered

The Vocabulary measure is administered in a group setting. Students read a sentence with a word underlined (or presented in **bold** typeface) and are asked to identify the meaning of that word by selecting the answer option that best represents the meaning of that word as it is used in the sentence, or they read a sentence with a word missing and are asked to select the answer option that best completes the sentence. The assessment forms are distributed to students. Assessors read the directions for taking the test:

“This exercise tells us more about the words you know. You will read each sentence on your own and then identify what that word means by selecting the answer that best represents the meaning of the word as it is used in that sentence. If the sentence has a word missing, you will select the answer choice that makes the most sense in the sentence.”

“For example, if the sentence was ‘The road across the mountains in the winter was slippery’, the answer choices might read: ‘Here, slippery means: (1) slick, (2) hard to hold, (3) fast moving’. You would select answer choice (1) because in this sentence, the word **slippery** is used to mean **slick**.”

“Now, it is your turn. Please mark your answers clearly on the paper by circling the answer that you think is the best for each question.” You will have 10 minutes to complete this exercise. Begin.”

Assessors monitor the time it takes students to complete the test. After five minutes, the Assessor should say, “You have 5 minutes left to complete this exercise.”

When 10 minutes have passed, the Assessors say, “Time is up. Please stop writing and hand in your papers.”

Assessors should collect the vocabulary materials and organize them so they are ready to score.

Material Needed for Administration

- One student copy of the vocabulary test form per student.
- Students will need something to write with.
- Clock or timer to monitor 10 minutes.
- One copy of the Assessor Instructions to read to students.

Number of Items

Each form should have 20 vocabulary items.

Scoring

Students score 1 point for every vocabulary item they answer correctly

Frequency of Administration

The Vocabulary test is intended to be administered monthly for students who are receiving specific instruction in this area.

Description of Test Creation Process

Step 1: Develop a Vocabulary Word Bank

Members of the task force will identify 200 important vocabulary words at each of grades 1-6, for a total of 1200 words. These words should convey meaning important for understanding written material in language arts, science, and history / social studies.

Step 2: Organize the Word Bank into Word Groups

Members of the task force will organize the words into 10 groups at each grade level, with the words organized, roughly, in terms of the month of school when they would be most relevant to have students know.

Vocabulary Items Needed for Each Grade Level		
Group #	Month When Students Should Know These Words	# of Words Needed
1	September	20
2	October	20
3	November	20
4	December	20
5	January	20
6	February	20
7	March	20
8	April	20
9	May	20
10	June	20

Step 3: Write Items and Possible Answer Choices

Each person writing vocabulary items should be given an equal number of words to write items for from each group (for instance, if you are going to have 2 people write vocabulary items for Grade 1, each of them should be given 10 words from each group of vocabulary words. If you are going to have 4 people write vocabulary items for Grade 1, each of them should be given 5 words from each group of vocabulary items. It is important to have the item writers divide the items up in this way, across forms, to help ensure that the test forms end up of comparable difficulty from one form to another. (Each item writer tends to use a particular style, and having a variety of styles represented on every test form helps make the forms equivalent).

Item writing consists of two steps: (1) Writing a sentence in which the vocabulary word is used, and (2) writing three possible answer choices (one correct, two that students might be tempted to think are correct) for each vocabulary item. At this step, always put the correct answer as the first answer choice (this will make it easier to double check the answer choices during the next step, item review).

When writing answer choices, members of the task force should follow these rules:

- The correct answer should be the only answer that is definitely correct, but all possible answer options should be appealing to some students.
 - For instance, a wrong answer might use another meaning for the vocabulary word, that might be correct in a different context, but is not correct in the sentence given.
 - If the vocabulary word might be confused with another word that looks/ sounds similar, it is good to have one of the answer items reflect that possible misunderstanding.
- The answer choices should be roughly the same length (to avoid calling attention to one over the others).
- Avoid patterns (such as having the two incorrect answer options start with the same letter and having the correct answer start with a different letter, so it ‘stands out’ from the others).
- Avoid writing sentences that would be biased in favor of / against particular regions or groups (such as providing contexts that might preference those who live in a city, or the mountains, for example).
- All answer options must fit grammatically.

Step 4: Item Review

Members of the Task Force should meet as a group to review each vocabulary item. During this review, they should confirm that the words are being used appropriately and that the answer choices follow the guidelines, above. They should also confirm that the first answer option is, indeed, the correct answer.

Step 5: Assembling the Items into Test Forms

Once all items have been reviewed and any edits made, one person should assemble the items into 10 different test forms per grade. During assembly, answer choices should be scrambled in a random order and an Answer Key should

be developed showing the correct answer for each of the test forms in each grade. Creation of the Answer Key should be done at the same time as the Forms are being created. The Answer Key may look like this:

Grade 1 Vocabulary Measures Answer Key										
Item #	Test Form #									
	1	2	3	4	5	6	7	8	9	10
1	A	C	A	B	C	C	C	B	A	C
2	C	A	C	C	C	B	A	B	C	B
3	B	A	A	B	A	A	A	C	B	A
4	B	B	A	A	B	A	B	C	B	A
...										
20	C	B	B	A	B	C	B	C	A	B

An example test form in the English language is provided as an example.

VOCABULARY: Grade 3

Student Name: _____ Date: _____

1. To be a good basketball player takes lots of **practice**. Here, **practice** means:

- A. sleeping B. watching C. training

2. To be safe, Sam walks on the _____ instead of the street.

- A. highway B. sidewalk C. road

3. The farmer grows **wheat** for bread. Here, **wheat** means a:

- A. food plant B. toy tractor C. hot cereal

4. The clerk put the girl's dress in a **sack**. What does **sack** mean?

- A. car B. trash can C. bag

5. The river was **calm**. It was a good place to relax and swim. Here, **calm** means:

- A. wild B. cold C. still

6. The sky is **above**. The ground is _____ .

- A. before B. behind C. below

7. A **camera** takes a:

- A. picture B. drawing C. dream

8. The second month of the year is:

- A. November B. January C. February

Reading Comprehension: Narrative Text

Purpose

Comprehension of narrative text is an important part of being literate. This assessment measures students' ability to make inferences about what they have read as well as their literal understanding of text. Beginning in grade 4, this test also measures students' understanding of literary techniques.

How Administered

The Reading Comprehension: Narrative Text measure is administered in a group setting. Students read a narrative passage, silently, and then answer multiple choice questions about what they have read.

The assessment forms are distributed to students. Assessors read the directions for taking the test:

“This exercise tells us more about how well you understand what you read. You will read a short story on your own and then answer some questions about what you have read. You will select the answer choice that makes the most sense based on your reading.

Please mark your answers clearly on the paper by circling the answer that you think is the best for each question. You will have 30 minutes to complete this exercise. Begin.”

Assessors monitor the time it takes students to complete the test. After 15 minutes, the Assessor should say, “You have 15 minutes left to complete this exercise.”

When 30 minutes have passed, the Assessors say, “Time is up. Please stop writing and hand in your papers.”

Assessors should collect the reading comprehension test materials and organize them so they are ready to score.

Material Needed for Administration

- One student copy of the Reading Comprehension: Narrative Text test form per student.
- Students will need something to write with.
- Clock or timer to monitor 30 minutes.
- One copy of the Assessor Instructions to read to students.

Number of Items

Grade 3 test forms have 9 items. Grade 4-6 test forms have 15 items.

Scoring

Students score 1 point for every item they answer correctly.

Frequency of Administration

The Reading Comprehension: Narrative Text test is intended to be administered no more than every 6 weeks for students who are receiving specific instruction in this area.

Description of Test Creation Process

Step 1: Write Original Narrative Stories

Members of the task force will write 6 narrative stories appropriate in content and language for students in each grade, grades 3-6. Each story should have a title, characters, a setting, and a plot with some sort of conflict, climax, and resolution. Following a similar story pattern across all passages makes the interpretation of scores more reliable because it helps ensure that the passages are similar. Particular attention should be paid when writing the stories to character development (including description of character traits that will help students interpret character motivation)

and development of the plot. In addition, beginning in Grade 4, the stories must include at least some literary elements (foreshadowing, irony, tone, etc.), as these begin to be addressed by the national curriculum.

Characters in the stories should, ideally, be about the same age as the children the stories are intended for. As they go up in grade level, the complexity of the writing style as well as the story line should reflect students' increasing maturity.

Test Blueprint for Writing Narrative Stories		
Grade Level	Approximate # of Words	# of Test Items per Form
3	700 – 900	9
4	1000 – 1200	15
5	1200 – 1400	15
6	1400 – 1500	15

Step 2: Write Items and Possible Answer Choices

Ideally, the same person will write items for each of the stories. This person should be familiar with the Curriculum and the types of questions students should be able to answer at each grade level. The person writing the items may need to revise the stories during the item-writing process if the story does not yet contain sufficient detail to address each of the standards.

Item writing consists of two steps: (1) Writing the question stem, and (2) writing three possible answer choices (one correct, two that students might be tempted to think are correct) for each item. At this step, always put the correct answer as the first answer choice (this will make it easier to double check the answer choices during the next step, item review).

When writing answer choices, members of the task force should follow these rules:

- The correct answer should be the only answer that is definitely correct, but all possible answer options should be appealing to some students.
- The answer choices should be roughly the same length (to avoid calling attention to one over the others).
- Avoid patterns (such as having the two incorrect answer options start with the same letter and having the correct answer start with a different letter, so it 'stands out' from the others).
- Avoid writing items that would be biased in favor of / against particular regions or groups (such as providing contexts that might preference those who live in a city, or the mountains, for example).
- All answer options must fit grammatically.

Grade 3: Test Blueprint for Writing Items for Narrative Stories

Standard	# of Items
Identify actions and emotions of characters	1
Identify time and place of an action	1
Identify where, when, how many, how many times, what kind of, etc.	1
Summarize what story was about	1
Determine what a character knows / does not know	1
Identify the purpose of remarks made in the text (advice, information, explanation, expression of attitude, etc.)	1
Determines the relationships among the characters (relatives, enemies, friends, etc.)	1
Defines the stages of a plot (beginning, evolution, conclusion)	1
Infer motivations of a character	1
Total # of Grade 3 Test Items	9

Grade 4: Test Blueprint for Writing Items for Narrative Stories

Standard	# of Items
Understand conceptual connection between the title and the text	1
Suggest alternative titles	1
Identify characters	1
Identify time and place of events, actions	1
Find the words and expressions the author used to describe characters, facts, and events	1

Specify feelings and purposes of characters	1
Draw conclusions about character thoughts, intentions, and feelings based on character behavior, actions, and traits	1
Relate explicit facts, events, and actions	1
Differentiate between fact and desires/dreams	1
Identify cause-and-effect relations	1
Identify chronology of actions and events	1
Define stages of plot (beginning, evolution, conclusion)	1
Differentiate between the author's and the characters' words, dialogue and monologue	1
Define characters' point of view	1
Analyze the purpose of a remark (advice, information supply, explanation, reproach, expressing one's own attitude, etc.)	1
Total # of Grade 4 Test Items	15

Grade 5: Test Blueprint for Writing Items for Narrative Stories

Standard	# of Items
Understand conceptual connection between the title and the text	1
Suggest alternative titles	1
Distinguish between main and supporting characters	1
Pick out concrete information (where, when, how many, how much time, what kind, though what, and others)	1
Explain motive of characters' behavior	1
Evaluate characters' behavior	1
Draw conclusions about character thoughts, intentions, and feelings based on character behavior, actions, and traits	1
Name subject of the text.	1
Identify what separate character knows/doesn't know	1
Identify cause-and-effect relations	1
Identify chronology of actions and events	1
Distinguishes stages of the story (beginning, middle part, ending)	1
Differentiate between the author's and the characters' words, dialogue and monologue	1
Define characters' point of view	1
Analyze the purpose of a remark (advice, information supply, explanation, reproach, expressing one's own attitude, etc.)	1
Total # of Grade 5 Test Items	15

Grade 6: Test Blueprint for Writing Items for Narrative Stories

Standard	# of Items
Identify communication situation of the text (goal, author, addressee)	1
Identify and relate information of various kinds from the text	1
Distinguish between main and supporting characters	1
Identify logical and chronological relations between occasions, facts and actions in the text	1
Make conclusion based on understanding whole text	1
Draw conclusions about character thoughts, intentions, and feelings based on character behavior, actions, and traits	1
Distinguishes stages of the story (beginning, middle part, ending)	1
Identify point of view in the text.	1
Identify creative expressions in the text and their purpose	1
Relates different elements of the text to each other and to the meaning / purpose of the text (title, beginning, key words, one or more passages, etc.)	1
Identify cause-and-effect relations	1
Identify chronology of actions and events	1
Predict what a character is likely to do next, based on character traits in the story.	1
Define characters' point of view	1

Analyze the purpose of a remark (advice, information supply, explanation, reproach, expressing one's own attitude, etc.)	1
Total # of Grade 6 Test Items	15

Step 3: Item Review

Item Review should be done by at least 3 different people. Item review consists of: (1) reading the story and all the questions to check for typographical errors, (2) evaluating the appropriateness of the questions, given the grade level of the students and the standards outlined in the curriculum, (3) ensuring that the stories and the items are free of bias that might preference one group over another (girls vs. boys, rural vs. urban, different regions, etc.), and (4) confirmation that the first item option listed for each question is the correct answer.

Step 4: Assembling the Items into Test Forms

Once all items have been reviewed and any edits made, one person should assemble the items into 6 different test forms per grade. During assembly, answer choices should be scrambled in a random order and an Answer Key should be developed showing the correct answer for each of the test forms in each grade. Creation of the Answer Key should be done at the same time as the Forms are being created. The Answer Key may look like this:

Grade 3 Reading Comprehension: Narrative Text Measures						
Answer Key						
Item #	Test Form #					
	1	2	3	4	5	6
1	A	C	A	B	C	C
2	C	A	C	C	C	B
3	B	A	A	B	A	A
4	B	B	A	A	B	A
...						
15	C	B	B	A	B	C

An example test form in the English language is provided as an example.

Reading Comprehension: Narrative Text: Grade 4

Directions: Please read the story and then answer the questions.

A Special Gift

Jose loved sports and games of all kinds. He liked basketball, soccer, catch, and even chess. He liked to play with his friends. He especially liked to play soccer with his dad because he thought his dad was the best soccer player in the world. He could do many tricks. Jose's favorite was when his dad hit the ball with his head. Jose had never seen anyone get the ball away from his dad. He was a really great player!

Ever since Jose was little, he could not wait until he was old enough to join the school soccer team. His dad had played in school when he was younger. He had told him many stories about what it was like. He told Jose about practicing with friends and playing in games. Jose's dad said that his favorite game was the first one he lost. He said that it taught him how hard he would have to work. After that, he really began to focus, but also never forgot that it was only a game.

One day, Jose heard that sign ups for soccer tryouts at his school were about to take place. They would last one week. Practice would be right after school for two hours every day. Jose was confident that he was good enough to make the team. Over the years he had played with lots of other kids at the park. He had always done well and knew his dad had taught him well. As soon as he heard about the tryouts, he hurried to the school office to see if there was any paperwork his parents would need to fill out.

As soon as he got to the office, Jose had a terrible shock. He discovered that if he made the team, he would have to bring \$200 to pay for team travel and uniforms. Jose would also need to get new shoes because his were pretty old. They were a year old and Jose's feet were growing fast. The woman at the office told him that new shoes cost about \$65. When Jose heard about all the expenses involved, he felt his stomach sink.

Just the month before, his dad had lost his job. Ever since then, money had been tight. They had talked about it as a family. They had come to the conclusion that everyone would have to give up something. Both Jose and his sister only got two new shirts and one pair of shoes for school this year. Normally, they were able to get much more. His little brother had to skip his camping trip with his Cub Scout group. His mom asked for more hours at her work. Now, she stayed late every Wednesday. His dad was looking for a job every day. He reassured his family that the situation could not last long.

Jose did not know if he should ask his dad for the money. He decided to try out for the team in secret. He didn't want his dad to feel pressured by the thought of extra expenses. Instead, Jose decided that he would decide if he should ask for the money only if he made the team.

Jose went to the tryouts every day for a week and had so much fun! He met lots of new friends who loved soccer almost as much as he did. He also learned all sorts of new tricks. He even taught the other kids a few. On the last day of tryouts, the coach thanked everyone for participating in the week of tryouts. He read the new team list. Jose's name was third! He was so excited that he started jumping up and down and thinking about all the

good times ahead. The coach smiled and announced that his uniform would be number 28, his lucky number! Jose grinned, thinking about how perfectly everything was working out.

Then, he felt his joy crash around him. The coach reminded all the children to bring their money next week so they could order the new uniforms. Right then, Jose remembered his problem. He knew that the fateful time had come to decide whether or not to ask his parents for the money. Secretly, he had been hoping that his father would get a job during the week of tryouts, but that had not happened. Money was still tight at home. Jose realized that they might not be able to pay for soccer this year.

As Jose walked home, he thought long and hard about what to do. He knew his father would be proud of him for making the team. He knew that hearing such good news would brighten his day. At the same time, he also knew that asking for over \$200 was risky.

If he did ask, Jose wondered if he would be putting his dad in a place where he would have to say no. He knew his dad was already troubled by being out of work, and he didn't want to make matters worse for him. He also did not want his dad to say yes and worry even more about money. Jose thought about ways he could earn the money himself. He knew, however, that with school, homework, and practice everyday after school, he would not have time for a job. As Jose got closer to his house, he came to the sad conclusion that he should probably just wait until next year to play.

When Jose got home, he shuffled straight to his room and shut his door. His dad must have heard him, though, because he barged right in. He barely waited after knocking on the door to come in and tell his son how excited he was for him. He told his son that he knew he would play soccer some day! He said that he had known it would happen since he was a tiny baby. He was just so happy that today was that day. Jose felt his father's pride and love wash over him like a wave. He wanted to be excited too, but he was really confused. How had his dad found out about the soccer tryouts? How long had he known? Did he realize they would have to pay to participate on the team?

He stood there silently with a hundred different thoughts spinning in his head. Confused, his father asked him what was wrong. Why wasn't he jumping around and excited too? Jose told him. He explained the whole situation. He told his father about the money, the shoes, trying out in secret, and about finally deciding not to tell him that he had made the team. Jose's dad listened intently. When Jose finished, his dad just hugged him.

When he finally let go, he told him that he had known all along that his son was trying out and that he also knew about the money. He said that the coach had called all the parents the first day of practice to make sure that they knew their children were there and interested in participating.

More specifically, when he called Jose's house, the coach also wanted to tell them that Jose was a natural! Jose's dad said that at first he was surprised and even a little angry that Jose had not told him about tryouts. However, when the coach told him about the dues, he knew why his son had chosen to remain silent. Jose's father also said that at first he did not think he would be able to help his son with the money. He said that he thought about it for two days and then decided to call the coach and tell him that he would not be able to afford soccer this year. At the sound of these words, Jose's heart dropped.

His dad kept talking though. He went on to say that the coach informed him that each year they were able to offer two students scholarships. They would cover the \$200. He said that he was hoping to offer one to Jose. At that point in his story, Jose's dad paused, waiting for his son to express his happiness at the marvelous news.

Instead, Jose swallowed nervously and, in a quavering voice, told his father about the shoes. Almost before the words were out of his mouth, Jose's dad stood up and left the room. Jose felt like crying, but he held back his tears of disappointment.

Suddenly, his dad came back with an enormous smile, balancing a big box in his hands. Right away, Jose began to scream, overwhelmed with excitement. His dad had already bought him shoes! He had made the team! His dues were paid! There were no other roadblocks left. He was going to play soccer after all. Right away he put on his shoes and ran to get his ball. He knew he would not forget for a moment how fortunate he was to have a generous coach and a father who worked so hard to help his dreams come true.

1. How did Jose learn to play soccer?

- A. He was on the school team.
- B. He learned from his dad.
- C. He learned from friends

2. What sports did Jose like to play?

- A. He liked all kinds of sports, especially soccer.
- B. He watched all sports, but only played soccer.
- C. He liked to play soccer, but only with his dad.

3. What was the first soccer problem Jose had?

- A. He found out he probably wasn't good enough to make the team.
- B. His parents had to fill out paper work at the school office.
- C. He found out that he had to pay \$200 to be on the team.

4. What was Jose probably thinking when he signed up to try out for the soccer team?

- A. He was sure he would never have the money to pay, so he would try out just for the fun of it.
- B. He would probably make the team and hoped that by then his father would have a job.
- C. He would be a great soccer star some day, and he needed this chance to get started.

5. Where was Jose's name on the list of players selected to be on the team?

- A. Low on the list.
- B. High on the list.
- C. Middle on the list.

6. What decision did Jose make after he thought about ways to get money for

soccer?

- A. He should find a way to get the money he needed.
- B. He should talk to his dad and see what happens.
- C. He should probably wait until next year to play.

7. What feeling did Jose get from his father when they were talking about playing on the soccer team?

- A. His father was proud of what Jose had done and loved him very much.
- B. His father wanted to hug him and get mad at him at the same time.
- C. His father was happy that he got on the team but not happy about how he did it.

8. What did the coach tell Jose's father about Jose's soccer playing?

- A. Jose was able to play very well.
- B. Jose knew a lot of soccer tricks.
- C. Jose was a natural soccer player.

9. Why did Jose get nervous and his voice begin to shake when he told his father about needing shoes?

- A. He wanted to cry because he was so tired out from all the excitement of the day.
- B. He thought that it would mean the end of his soccer, and it made him want to cry.
- C. He was so happy and excited about receiving the \$200 award that he wanted to cry.

10. What was the biggest concern Jose had after he made the soccer team?

- A. His father would feel sad if he couldn't give Jose the money and sad if he did give Jose the money.
- B. He dad was going to be upset because Jose had never told him that was trying out for the team.
- C. He was going to have to start looking for a job so that he could earn the money that he needed.

11. What was Jose's big surprise at the end of the story?

- A. His father had already bought him new shoes.
- B. His father had found a job and now had money.
- C. He was going to be able to play soccer after all.

- 12. What was the second soccer problem Jose had?**
- A. He needed to pay for team travel and uniforms.
 - B. His soccer shoes were too old and small to wear.
 - C. He had to pay extra money to the woman at the office.
- 13. What was Jose like?**
- A. He was not willing to wait when it came to something that he wanted to do.
 - B. He didn't understand why he had to suffer because of family money problems.
 - C. He was understanding of his family's money problems and did his best to help.
- 14. How did Jose's father know that Jose was trying out for the soccer team?**
- A. Jose decided he needed to tell him about it before things went too far.
 - B. The coach called him the first day of practice to make sure it was okay.
 - C. His father was able to figure it out because he had been a soccer player too.
- 15. What happened right after Jose got uniform number 28, and he thought everything was going great?**
- A. He started jumping up and down and thinking about all the good times he was going to have.
 - B. He remembered that he had to face his problem of whether to tell his dad that he needed money.
 - C. He suddenly felt no joy at all because the coach said they had to order uniforms the next week.

Reading Comprehension: Informational Text

Purpose

Ability to understand informational text is an important part of literacy and the Georgian National Curriculum. This test measures students' understanding of a variety of informational texts.

How Administered

The Reading Comprehension: Informational Text measure is administered in a group setting. Students read informational text material, silently, and then answer multiple choice questions about what they have read.

The assessment forms are distributed to students. Assessors read the directions for taking the test:

“This exercise tells us more about how well you understand what you read. You will read silently on your own and then answer some questions about what you have read. You will select the answer choice that makes the most sense based on your reading.

Please mark your answers clearly on the paper by circling the answer that you think is the best for each question. You will have 30 minutes to complete this exercise. Begin.”

Assessors monitor the time it takes students to complete the test. After 15 minutes, the Assessor should say, “You have 15 minutes left to complete this exercise.”

When 30 minutes have passed, the Assessors say, “Time is up. Please stop writing and hand in your papers.”

Assessors should collect the reading comprehension test materials and organize them so they are ready to score.

Material Needed for Administration

- One student copy of the Reading Comprehension: Informational Text test form per student.
- Students will need something to write with.
- Clock or timer to monitor 30 minutes.
- One copy of the Assessor Instructions to read to students.

Number of Items

Each test form has 3 informational text prompts with 5 multiple choice items, for a total of 15 items per test form.

Scoring

Students score 1 point for every item they answer correctly.

Frequency of Administration

The Reading Comprehension: Informational Text test is intended to be administered no more than every 6 weeks for students who are receiving specific instruction in this area.

Description of Test Creation Process

Step 1: Create Informational Texts

Members of the task force will create 18 informational text prompts appropriate in content and language for students in each grade, grades 3-6. Text prompts should include the sort of informational text described in the National Curriculum for that grade level. Each prompt should be short and may be represented by graphics as well as text. These individual text prompts will be bundled into 6 Informational Text measures per grade.

Test Blueprint for Writing Informational Text Prompts
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Grade Level	Types of Materials Mentioned in the Standards
3	Children’s encyclopedia entry, Simple but multi-stage instructions, Notices, Charts, Tables, Columns with Subtitles
4	Adverts, notice in a teenager’s magazine, entry in children’s encyclopedia, etc.
5	Youth magazines, field-cognitive articles, references, interviews, etc.
6	Informational reports, press, administrative texts, instructions, magazines, newspapers (of children’s, popular, sectorial groups, etc.), multimedia to include the internet

Step 2: Write Items and Possible Answer Choices

After the informational text prompt is written, the test writer moves on to writing five multiple-choice questions about the text. The person writing the items should be familiar with the Curriculum and the types of questions students should be able to answer at each grade level.

Item writing consists of two steps: (1) Writing the question stem, and (2) writing three possible answer choices (one correct, two that students might be tempted to think are correct) for each item. At this step, always put the correct answer as the first answer choice (this will make it easier to double check the answer choices during the next step, item review).

When writing answer choices, members of the task force should follow these rules:

- The correct answer should be the only answer that is definitely correct, but all possible answer options should be appealing to some students.
- The answer choices should be roughly the same length (to avoid calling attention to one over the others).
- Avoid patterns (such as having the two incorrect answer options start with the same letter and having the correct answer start with a different letter, so it ‘stands out’ from the others).
- Avoid writing items that would be biased in favor of / against particular regions or groups (such as providing contexts that might preference those who live in a city, or the mountains, for example).
- All answer options must fit grammatically.

Grade 3: Test Blueprint for Writing Items for Informational Text

Standard	# of Items
Identify a topic	1
Specify compositional elements (title, illustration, inscription, symbol, column, # of paragraphs, chart, etc.)	1
Can find where to find a piece of information (‘in what column...’)	1
Comprehend inscriptions under illustrations	1
Relate a column / subtitle to an illustration, its inscription	1
Total # of Grade 3 Test Items	5

Grade 4: Test Blueprint for Writing Items for Informational Text

Standard	# of Items
Specify the communication situation (author, addressee, purpose/designation)	1
Describe various text in terms of structural characteristics (e.g., an invitation card begins with greeting then comes the bulk text and, finally, the signature; a recipe consists of the title and two parts: the ingredients and the way of cooking; a cognitive text has a title, subscribed illustrations and the paragraphs, etc.)	1
Relate explicit facts, events, and actions	1
Determine cause-and-effect relations	1
Classifies information by certain features (similarity-difference, increasing-decreasing, etc.)	1
Total # of Grade 4 Test Items	5

Grade 5: Test Blueprint for Writing Items for Informational Text

Standard	# of Items
Distinguish and name main issues of text.	1

Identify explicit factual information	1
Relate facts, occasions, and action to each other and make respective conclusions	1
Define logical relation between occasions/facts expressed in the different parts or one particular part of the text (causative-consecutive, comparative, conditional and others)	1
Make conclusion on the basis of total comprehension of the text	1
Total # of Grade 5 Test Items	5

Grade 6: Test Blueprint for Writing Items for Informational Text

Standard	# of Items
Distinguish information report, retelling the story, simple instruction, oral communication, and texts of other functionality	1
Use simple texts of administrative nature, different instructions, rules and formularies functioning in this or that institution	1
Name formal signs of such text, which are, for example, strictly laconic style or conditional form of the text (of black type); special/sectoral terminologies and so on.	1
Distinguish magazines and newspapers of children’s, popular, sectorial, those of different groups and organizations	1
Know structure of the press and find needed information correctly (know in what part of the magazine or newspaper can the needed information be found)	1
Total # of Grade 6 Test Items	5

Step 3: Item Review

Item Review should be done by at least 3 different people. Item review consists of: (1) reading the text prompt and all the questions and answer choices to check for typographical errors, (2) evaluating the appropriateness of the questions, given the grade level of the students and the standards outlined in the curriculum, (3) ensuring that the text prompts, the questions, and the possible answer choices are free of bias that might preference one group over another (girls vs. boys, rural vs. urban, different regions, etc.), and (4) confirmation that the first item option listed for each question is the correct answer.

Step 4: Assembling the Items into Test Forms

Once all items have been reviewed and any edits made, one person should assemble the informational text prompts and accompanying 5 items into 6 different test forms per grade. During assembly, answer choices should be scrambled in a random order and an Answer Key should be developed showing the correct answer for each of the test forms in each grade. Creation of the Answer Key should be done at the same time as the Forms are being created. The Answer Key may look like this:

Grade 3 Reading Comprehension: Informational Text Measures						
Answer Key						
Item #	Test Form #					
	1	2	3	4	5	6
1	A	C	A	B	C	C
2	C	A	C	C	C	B
3	B	A	A	B	A	A
4	B	B	A	A	B	A
...						
15	C	B	B	A	B	C

An example test form in the English language is provided as an example.

READING COMPREHENSION: INFORMATIONAL TEXT: GRADE 3

INSTRUCTIONS: Please select the best answer for each question.

Item 35471_35475

FLIGHT HEIGHTS



Height	Birds	Planes
Sea Level	Swifts and swallows	
3000 feet	Songbirds	
4000 feet	Ducks and geese	
9000 feet	Eagles and hawks	Small airplanes
28,000 feet	Bar-headed Geese	Jet airplanes

- Which fly the highest?
 - Bar-headed geese
 - Small airplanes
 - Songbirds
- Which birds fly at 4000 feet?
 - Ducks and geese
 - Swifts and swallows
 - Eagles and hawks
- A small airplane flies at the same height as:
 - Bar-headed geese
 - Songbirds
 - Eagles
- Ducks and geese fly lower than:
 - Hawks
 - Songbirds
 - Swifts
- How high do swallows fly?
 - 3000 feet
 - Sea level
 - 9000 feet

Here is part of a page from a glossary.

B band-bird

band - a stripe of color.

barn - a large farm building where hay and animals are kept.

bat - a flying animal that only comes out at night.

bay - a horse with a brown coat and black mane and tail.

band - a curved thing made for use

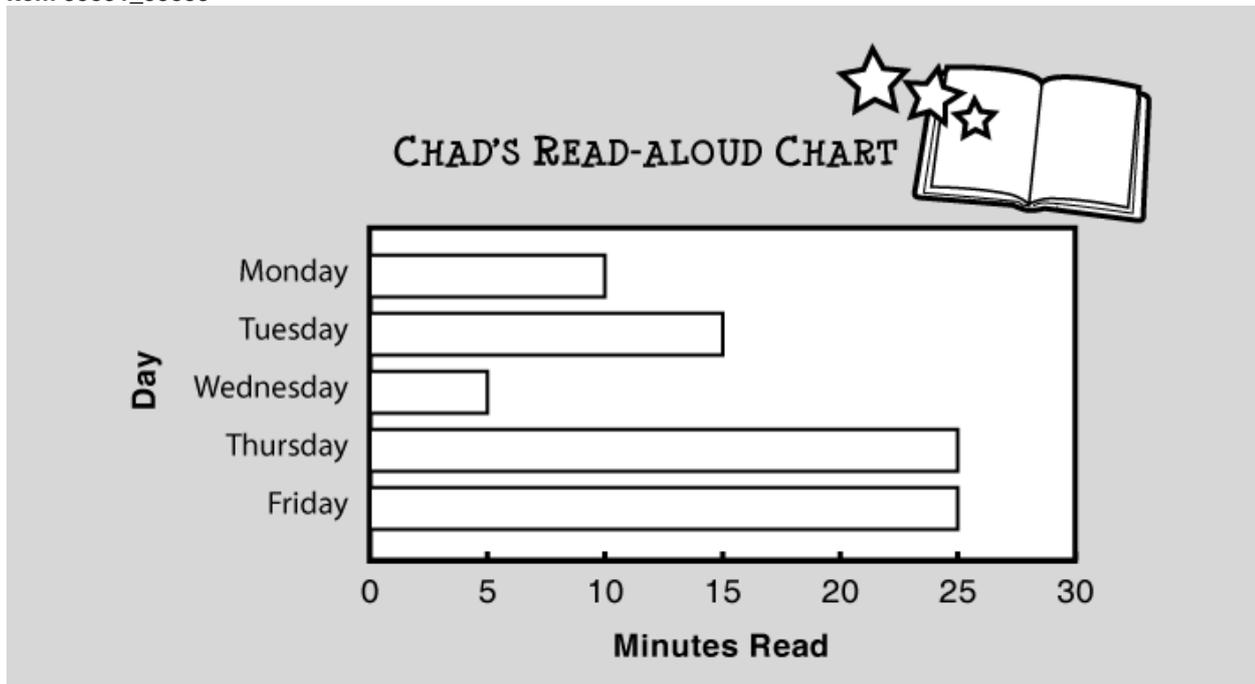
6. Which word means "a stripe of color"?
 - a. Bat
 - b. Barn
 - c. Band

7. Which word means "a large farm building"?
 - a. Bat
 - b. Barn
 - c. Band

8. A flying animal could be a _____ .
 - a. Bat
 - b. Barn
 - c. Band

9. Which other word could be found on this page?
 - a. Dog
 - b. Bin
 - c. Brick

10. Which word tells about the color of a horse?
 - a. Barn
 - b. Bay
 - c. Bat



11. This chart shows how much time:
 - a. Chad reads aloud.
 - b. Monday to Friday.
 - c. Chad plays each day.

12. On Monday, Chad reads for:
 - a. 25 minutes
 - b. 15 minutes
 - c. 10 minutes

13. Chad reads aloud for 25 minutes on:
 - a. Monday and Thursday
 - b. Thursday and Friday
 - c. Tuesday and Friday

14. When does Chad read for 15 minutes?
 - a. Wednesday
 - b. Tuesday
 - c. Thursday

15. How many days does Chad read aloud?
 - a. Four
 - b. Three
 - c. Five

Test Administration Procedures

The Georgian Formative Assessment of Reading is a mix of formal and informal testing practices. Although it is designed to be administered by classroom teachers, international best practice in formative assessments used to guide teaching is to ensure that the measures are administered following standardized administration protocols. Administering the measures in a standardized way helps to ensure that the information teachers receive from the test can be interpreted with confidence. This assessment is intended for classroom teacher use, to help improve student learning outcomes.

Creating an Appropriate Classroom Environment for Test Administration

The Georgian Formative Assessment of Reading should be administered in a fairly quiet location where the student will not be distracted. Individually-administered tests require a setting where the teacher can sit across from the student, so the student cannot see what is being marked on the Assessor Copy of the test. No special setting is required, so long as the teacher can hear what the student is saying, and the student can hear the instructions of the teacher. Group-administered tests can be given in the students' regular classroom. Students should be told that they are going to be doing some exercises that will help their teacher get a better understanding of their strengths and needs in reading. They should be told to try their best, but also reassured that there may be some things they do not know the answer to. That is OK.

If the test is one that includes timing, it is important not to let use of the stopwatch frighten the students or make them nervous. Usually, after one or two experiences with a timed test, students become accustomed to this format and are no longer nervous. The stopwatch should be held in such a way that students do not look at it. To help reduce the focus on the timing, it is better for the teacher to mark the test paper after the time has ended, but not to tell the student, "STOP!". Instead, the teacher should wait until the student reaches the end of a line or the end of a paragraph and then should gently say, "Thank you. That is enough for now." If the teacher has enough time, it is even a good idea to let the student finish the test even though the time has ended. So long as the teacher has marked on the test form where the time has ended, the student can be allowed to finish reading the test if the teacher would like.

If the teacher is administering several different test types (for example, during the screening assessment done early in the school year), this time while the student is finishing the test can be used to calculate the student's score and record it on the bottom of the test form. In addition, if the teacher would like to have information about the specific test items the student knows / does not know, the teacher can continue to mark any errors the student makes as he or she finishes the test form. In these cases, though, it is important to remember that the score for the test should be based only on the number of items the student completed during the pre-established time period. Again, this is important because the rate with which students are progressing through the test forms is part of the construct being measured on these fluency-based tests.

After the testing session has ended, the teacher should thank the student for trying. If additional students are going to be assessed, the teacher can ask the student to send the next student out so that there is not much time wasted in moving from one student to the next. It is natural for students to ask how they did on the test, but rather than tell students their specific score, which might encourage them to try to hurry through the test the next time rather than focus on reading well, it is better to tell them something less specific. For instance, the teacher might say, "I really like how you tried to read very clearly," or "It seemed like some of the letters were easier for you today."

Recording Formative Assessment Data

Each of the individually-administered test forms has an Assessor Copy on which teachers record student errors while they are administering the test. The level of detail in the scoring depends on how the teacher intends to use the information. If the goal of the teacher is to get a quick understanding of whether the student is performing at an expected level, then very simple marking of errors is all that is needed. If the goal of the teacher is to analyze the errors / miscues with the intention of gaining insight into what specific misunderstandings the student may have, then classifying the type of errors made may be of use.

Generally, the more students the teacher is planning to assess at a particular point in time, the less detail is recorded on the test form. When the teacher is working with only one or two students and attempting to better understand their specific areas of need, marking the types of errors made in more detail is recommended. In this way, for instance, the teacher might determine that a particular student consistently struggles with particular sounds / letter combinations, or perhaps with letters when they occur in particular locations within words (beginning, middle, end).

For the group-administered test forms, students mark their answers on an answer sheet, where they have also written their name and the date when they took the test. These answer sheets are later scored by the teacher, using an answer key provided in the testing materials.

Securing Formative Assessment Materials and Data

Unlike high-stakes examinations, formative assessments are designed to provide the teacher with information that will be immediately useful for lesson planning and instruction. However, good care still needs to be taken to ensure that students do not have access to the testing materials in advance. The test forms should never be taken home, where other students might see them and have an opportunity to practice on the tests.

Student assessment data should be taken care of in the same way that teachers secure graded work. Scores should be considered private between the student, his or her parents, and the teacher. Students should not be given information about how other students perform on the tests.

How Results Should Be Shared

Results of formative assessments are intended to be used by teachers to help them make decisions about their teaching and how best to support their students' learning. The Georgian Formative Assessment of Reading is designed with this purpose in mind. It should not be used to make comparisons across teachers or schools because such comparisons require a very carefully planned approach to ensure that groups being compared are comparable. That is not the purpose of this test. This test's purpose is to help teachers improve their students' learning outcomes by identifying students who need additional practice in order to meet expected learning goals and then to provide the teachers with information about what underlying skills are needed in order for their students to meet these goals.

In addition to the teachers, parents can also benefit from learning the results of the assessment. Because students spend more hours out of school than in school, parents can play a very important role in helping students improve their learning outcomes. Results of the Georgian Formative Assessment of Reading can be shared with parents. Together, teachers and parents can collaborate in making sure that all Georgian students have the instructional supports they need to be successful.

The Georgian Formative Assessment of Reading can play an important role in supporting the National Curriculum Goal, which states, "The language skills should be understood as a single system rather than a random collection thereof. It should support one in coping with personal, daily, social or professional problems for the Georgian language is more than just another subject, it is the language of instruction, the means of studying all the other ones."

ANNEX B: DRAFT GEORGIAN FORMATIVE ASSESSMENT OF MATH CONCEPTUAL FRAMEWORK

I. Context for the Conceptual Framework -- Georgian Formative Assessment of Mathematics

A. Introduction and Background

The Conceptual Framework for the Georgian Formative Assessment of Mathematics (GFA-Math) provides information on the background, context, design, and administration of this new assessment tool that will be used by teachers in Georgia. The GFA-Math, for grades 1-6, can be used to improve instruction and learning in quantitative literacy in schools in Georgia. The Ministry of Science and Education has implemented a clear national focus on ensuring a mathematically literate population. The GFA-Math adds another tool that will help Georgian teachers ensure that all students not only master the basics of mathematics, but that they graduate from their formal schooling better able to understand more challenging concepts in math.

Mathematics, together with Reading and Writing, has been a powerful social entity starting from the dawn of human civilization. In 21st century, with advances in Information and Communication Technology (ICT) and new initiatives to improve learning in the content areas of Science, Technology, Engineering, and Mathematics (STEM), mathematics has been playing an increasingly important role in shaping how individuals deal with the various spheres of private, social, and civil life. This belief is widely shared by government and education researchers and planners, the corporate sector, parents, and the general public world-wide.

Mathematical competencies, numeracy, and quantitative literacy, which make a valuable contribution to society, are developed from specific beliefs and practices. Among which well-balanced and attainable content and effective and diverse methods of instruction meeting student's needs together with a strong foundation in mathematics at elementary school level is vital for success in mathematics in the later years. It also a common belief that and has been noted in research that the problem-solving skills and mental agility and flexibility that children develop through mathematics transfer to other subjects areas, their life, and later to work.

1. Purpose of the Conceptual Framework for the Georgian Formative Assessment of Mathematics (GFA-Math)

The Georgian Formative Assessment of Mathematics (GFA-Math), grades 1-6, will add another tool that will help Georgian teachers ensure that all students not only master the basics of math, but that they graduate from their formal schooling with the knowledge and skills to be quantitatively literate.

The main purpose of the GFA-Math is to provide teachers an easy to use tool in the classroom that can give them diagnostic information on students' knowledge and skills in critical competency areas of mathematics. The formative assessment process can be used by teachers during instruction to provide feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes.

While the Georgian National Standards in Mathematics includes a framework and instructions (sample rubrics) for formative assessment, currently there is no systematic assessment approach for diagnoses of difficulties of pupil's difficulties in core / foundation math competencies in Georgia's elementary schools. With approximately 20,000 five-year old children having entered Georgia's elementary schools beginning in 2011, there is a need for unified approach that incorporates the framework based on National Georgian Standards in Math and best international experience and practices on classroom-formative assessment that will emphasize the importance of early diagnoses and response to students that may be at risk in math.

The purpose of this document is to suggest a conceptual framework and instruments for diagnostic/formative assessments to be used in elementary school math classes in Georgia. These assessments will be designed keeping in mind the intended audience – primarily classroom teachers -- so that they can be easily implemented and used, and possibly further extended and adapted by others, such as the MES, individual math experts, trainers, and researchers.

2. Overview of U.S. and International Practices in Diagnostic/Formative Assessment

Background

In the Conceptual Framework, we provide a brief overview of some key documents that are influencing the development and use of formative assessment. It is important to note that mathematics educators have always focused on assessment of student learning, carefully assessing what students have learned through chapter tests, semester tests, national (state) tests, and or standardized tests, just to name a few. This reason for assessment is an important component of a mathematics program. However, the authors of the National Council of Teachers of Mathematics' (NCTM) *Principles and Standards for School Mathematics*, for example, take a broader view of assessment under the *Assessment Principle*, where they recommend that:

“assessment should be more than merely a test at the end of instruction to see how students perform . . . it should be an integral part of instruction that informs and guides teachers as they make instructional decisions. Assessment should not merely be done to students; rather, it should also *be done for students*, to guide and enhance their learning” (NCTM, 2000, p. 22 – italics by author).

Consequently, a comprehensive mathematics program will include **assessment for student learning** in addition to traditional assessments of student learning.

In the report *Attributes of Effective Formative Assessment* (McManus, CCSSO) the author notes that “There has been substantial interest in *formative assessment* among U.S. educators during recent years. Increasing numbers of educators regard formative assessment as a way not only to improve student learning, but also to increase student scores on significant achievement examinations. To promote the use of formative assessment, the Council of Chief State School Officers (CCSSO) created a national initiative. The initiative formally began in January 2006, when CCSSO formed the Formative Assessment (FA) Advisory Group consisting of measurement and education researchers including Jim Popham, Lorrie Shepard, Rick Stiggins, and Dylan Wiliam and state agency leaders from across the nation. As part of their work, they devoted substantial effort to clarify the meaning of “formative assessment,” based on current literature, and determine how formative assessment may best be used by the nation’s educators.”

The following definition of formative assessment was adopted by the group, without dissent:

Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes.

The paper goes on to describe five attributes that are critical features of effective formative assessment. They are:

1. Learning Progressions: Learning progressions should clearly articulate the sub-goals of the ultimate learning goal.
2. Learning Goals and Criteria for Success: Learning goals and criteria for success should be clearly identified and communicated to students.
3. Descriptive Feedback: Students should be provided with evidence-based feedback that is linked to the intended instructional outcomes and criteria for success.
4. Self- and Peer-Assessment: Both self- and peer-assessment are important for providing students an opportunity to think meta-cognitively about their learning.
5. Collaboration: A classroom culture in which teachers and students are partners in learning should be established.

Another key document, *From Formative Assessment to Assessment FOR Learning: A Path to Success in Standards-Based Schools* (Stiggins, Phi Delta Kappan, December 2005) states that “As the mission of schools changes from ranking students to ensuring that all learn to specified standards . . . the purpose and form of assessments must change as well.” Stiggins proposes that we use many different assessment methods to provide students, teachers, and parents with a continuing stream of evidence of student progress in mastering the knowledge and skills that underpin or lead up to state standards. This option has been labeled **assessment FOR learning**. “. . . assessment FOR learning focuses on day-to-day progress in learning as students climb the curricular scaffolding leading up to state standards. It tells users if and when students are attaining the foundations of knowledge, the reasoning, the performance skills, and the product development capabilities that underpin the mastery of essential standards.”

Over the years, various approaches and practice have been developed in the United States for diagnostic and formative assessments in math, as an integral part of instructional decision-making and the bridge between identification of

students who may be at-risk for failure and delivery of carefully designed supplemental interventions, diagnosis provides valuable information about students' persistent misconceptions in the targeted domain. (See *Leanne R. Ketterlin-Geller, Paul Yovanoff, Diagnostic Assessments in Mathematics to Support Instructional Decision Making, Practical assessment, Research and Evaluation.*)

One can also see a similar shift in EU countries, where feasible alternatives to standardized tests have been long developed with the belief that such assessment tools provide worthwhile alternatives, especially diagnostic approaches to enhancing classroom teachers' assessment abilities, e.g. 'authentic assessment' (Wiggins, 1989b; Lajoie, 1995). The second aspect of the development of alternatives to standardized tests in EU was the recent emphasis placed on recognizing and enhancing the assessment abilities of teachers.

The idea is that assessment be placed back into the hands of teachers, which is described by terms such as 'informal assessment' (Watson, 1999; 2000), 'instructionally embedded assessment' (Webb, 2001) or 'didactical assessment' (Van den Heuvel-Panhuizen, 1996), 'formative assessment' (Wiliam & Black, 1996) and 'classroom assessment' (De Lange, 1999). All of these descriptive phrases refer to assessment which is intended to support the teaching and learning process.

Context from National / International Assessments

Many countries have shown increased concern with student mathematics achievement, In some cases, the purpose of the assessment affects the structure adopted. France gives particular importance to diagnostic assessment. The testing takes place at the beginning of the school year and looks back over the work carried out in the previous year, being intended to inform future teaching. The stress is clearly on formative, rather than summative, purposes. Another example of a system which shares this emphasis on diagnostic assessment is Sweden, which has national tests for students that have the role of supporting teachers and influencing the allocation of funding and resources to pupils who do not pass. In some of the top-performing countries in Asia, such as Japan and Indonesia, approaches incorporating elements of classroom diagnostic assessments are an integral part of teacher professional development.

Note: More details on the linkage of diagnostic and formative assessments to national and international assessment systems can be found in the accompanying paper to this conceptual framework, which provides an international experience summary with various cases (countries) that were identified as examples.

3. Overview of GFA-Math

As mentioned above, the GFA-Math is being developed not only to assess students, but also to bring more awareness to teachers and communities about foundational skills needed to ensure children's future success in mathematics. Educators can use GFA-Math results to identify students, classrooms, and schools with particular needs and develop instructional approaches for improving foundation skills (e.g., poor number naming skills, understanding place value concept, counting strategies, solving word problems). Thus, after GFA-Math has identified certain weaknesses, teachers can be taught research-based instructional approaches to address them. GFA-Math also is simple enough that teachers can learn to administer it (or elements of it) in their classrooms to obtain cost-effective data on individual student progress in mathematics.

Although Georgian elementary teachers already benefit from a well-articulated national curriculum and standards for mathematics, they lack a common classroom assessment that will give them the type of formative information their colleagues in other leading nations are able to utilize. The GFA-Math addresses this important need.

In keeping with the curriculum adopted by the Georgian Ministry of Education and Science as well as research-based international-best practice in developing strong skills in mathematics, the GFA-Math will be organized into 10 components or competencies: (1) oral counting, (2) one to one correspondence (of numbers and quantities), (3) number identification, (4) comparing numbers (quantities), (5) representing numbers using a model (number lines), (6) missing numbers, (7) word/text problems, (8) arithmetic operations and their properties, (9) geometry, (10) data analysis, probability, and statistics.

Note: more details on the design and use of GFA-Math are provided in the following sections.

B. Improving Learning Outcomes in Georgia and Other Countries

1. Use of GFA-Math by Teachers in Georgia

As in other countries recognized as world leaders in education, with the adoption of these formative assessments, Georgian teachers will be able to identify students who need additional focused instruction to avoid falling behind their peers and will be able to identify the specific math skill areas these students need to focus on. This formative information will enable teachers to plan their instruction more efficiently, helping ensure that Georgian students reach their full potential.

It is important that both teachers and students understand that the purpose of the Georgian Formative Assessment is to get a better idea of what math skills students have already mastered and what skill areas may need additional work. Sub-tests can be used to monitor the progress that students are making in gaining the critical skills and specific competencies outlined in the Georgian mathematics curriculum. Students should be encouraged to try to do well on the test, but these tests should not be used for the purpose of grading.

2. Uses of Formative Math Assessments By Teachers in Other Countries

Designed to provide teachers with the information they need to improve learning outcomes, formative assessments will help identify students who are potentially at risk of school failure and give teachers information they can use to make informed decisions about providing appropriate educational supports for their students. Formative math assessments have been used successfully in countries such as the United States, New Zealand, Australia, the United Kingdom, and Singapore, where they are now a regular part of the educational systems.

In developing the GFA-Math, we bring evidence-based best practice from these educational world leaders to the Caucasus region. With the creation of these formative assessments, Georgian teachers will have at their disposal research-based tools on par with the tools available to educators in other countries with similarly strong educational systems. As such, the Republic of Georgia will be an educational innovator in this region of the world.

C. Overview of Format for the Georgia Formative Assessment of Mathematics

1. Administration of the GFA-Math

The GFA-Math will be an individually- (grades 1-3) or group- (grades 4-6) administered assessment of critical components (core/foundation mathematics skills) given by the classroom teacher. The assessment will be administered orally to students at grades 1 and 2 (and possibly 3), and will be a paper and pencil test for students at the other grades. Students unable to read well will have the assessment read out loud, for example, students at the younger grades or students with limited reading skills in the Georgian language.

For the individually administered assessments, student responses will be immediately scored by the teacher. For the group administered paper and pencil test forms, the teacher will score the student responses after completion of the testing session. In either case, the results will provide a snapshot of areas of skill deficiency in math.

It is important to note that, although many international and national assessments often assess student math skills starting in the third and fourth grades, GFA-Math will assess students beginning in grade 1. Waiting until later makes it difficult to target the levels where children start having difficulties in math. Although it is possible to catch children up later on, it can be expensive for the system, and can be frustrating for the children themselves.

2. Timing and Scheduling of the Assessment

Assessment for student learning can be effective if it is done diagnostically and provides immediate feedback—guiding and supporting teachers in customizing instruction for individual student needs—and provides direct and systematic interventions when the results of ongoing formative assessments calls for them. This form of assessment desirably should be done as teachers complete each new theme or topic. Typically, the teacher will have just completed instruction on a specific content area or skill in mathematics and then give an assessment subtest to determine if students have learned the material.

The GFA-Math is meant to be flexible and given on demand, when the teacher decides to administer it to the classroom. In the initial years of implementation, it can be administered in the Fall, Winter, and Spring of the school year to monitor progress of students on the math competencies.

The assessment is designed so it should not require more than 20 minutes. This will need to be confirmed during piloting and field testing of the forms.

1. Content

At each grade, the assessment will consist of about seven to ten (7-10) tasks depending on the grade, with multiple problems (about 10-20 for each task) that measure the following components, i.e., competencies:

- *Oral counting* (in lower grades 1-2)
- *Number identification*
- *Numbers comparison* (finding max, min, ordering)
- *Missing number* (substitute for counting with steps in upper grades)
- *Word problems*
- *Problems on four arithmetic operations*
- *Geometry* (shape recognition, classification, elementary topological notions interior, exterior and boundary points, concept of area and models of number lines and coordinate plane)
- *Algebra* (properties of Arithmetic operations, solving equations, in upper grades)
- *Pattern extension*
- *Data analysis*

The proposed numbers of items for each component are listed in the matrix in the next chapter of the framework.

2. Types of Tasks

Each task will be preceded with the presentation of a scenario for the collection of items to orient and prepare the children to respond and have them focus their attention on the task at hand. Then actual items within the task will follow in sequential order so that they begin with easier items and then the difficulty level slightly increases until the middle of the task, then it remains stable. The classroom teacher, who is trained on administering the tasks, interacts with the students by giving instructions, asking the questions, providing show cards and manipulative objects for the children to use if part of the task, and scoring the responses.

Details of the types of tasks that will be used are presented in Section II of the framework.

D. Developing Assessments with Direct Application to Classroom Instruction

To be most useful, formative assessments need to do a variety of tasks. They need to reliably identify those students who are at risk for failure in their math classes. They also need to provide teachers with formative information about the specific skills their students have mastered and those that need additional development. Finally, they should provide teachers information about the degree to which the instructional interventions they are providing are effectively meeting student needs. A single test cannot achieve all these goals. However, a series of assessments carefully constructed to work in concert with one another can fulfill these needs and more. The GFA-Math will include tasks that assess student skills in each of the competencies and builds in their development of knowledge across the grades.

Building on successful international models of curriculum based measurement (CBM) with documented evidence of having improved the effectiveness of math instruction, the GFA-Math will include a mix of shorter, less demanding assessment tasks and longer, more complex tasks and items aligned to the Georgian National Curriculum in Mathematics. Different assessments will be developed for each grade level in grades 1 – 6.

For repeated testing and progress monitoring measures, the assessment at each grade will include 3-4 alternate test forms of comparable content coverage and difficulty, enabling teachers to track the progress their students are making in critical math skill areas in between administrations of the assessment.

With the GFA-Math, teachers will be able to monitor the progress of students' specific skill deficits to assess the impact their instruction is having on helping the students catch up to their peers. The assessment can also be used by teachers to identify areas for future professional development as well as to provide parents and students with information about skill areas that might benefit from additional practice in specific skill areas during the summer vacation months.

E. Application for Language-Minority Students

For students enrolled in language-minority schools who are learning Georgian as a second language, it is assumed that the learning of mathematical concepts and competencies is similar from one language to another. In using the GFA-Math with GSL students, it is important to keep in mind that the tests are designed to provide information about student mathematics ability in comparison to native speakers of Georgian.

During the first year that the GFA-Math is available, the performance of GSL students on these assessments will be carefully reviewed to ensure that the items are functioning correctly in other languages. The tasks will be field tested in Georgian. After they have been evaluated for their psychometric characteristics and finalized for operational use, they will be translated into the other languages of instruction that are used in Georgia.

These questions will be addressed during the first year of implementation as we learn more about how best to use the formative assessments to provide teachers in GSL classrooms useful information on the math skills of their students.

F. Comprehensive Approach for Data Collection and Informed Decision Making

The Georgian Formative Assessment is intended to give teachers the information they need to make informed decisions about instruction for their students. Students who perform well on this assessment are expected to perform well on national and international assessments of mathematics.

As described, the GFA-Math provides teachers with information that will enable them to ensure that their students are developing mathematics and numeracy skills in keeping with national expectations. The assessment is aligned to the national curriculum and reflects the skills that students and teachers are working on at each grade level. These measures will provide teachers, parents, and students with a way to monitor individual progress toward becoming well-educated and quantitatively-literate adults.

G. Professional Development and the GFA-Math

This assessment is designed in conjunction with a comprehensive teacher professional development program for improving math outcomes. The subtests align with the national curriculum and with teacher education practices for teaching mathematics. Mentor teachers familiar with teaching math and using assessment information to help guide instructional decision making will work with elementary teachers throughout the country to ensure that the assessment results are used to help improve student math outcomes. The assessment provides teachers with information about the specific skill areas their students are struggling with. This information can be used to help inform teacher educators and professional development specialists about areas of need of focus across the country.

The GFA-Math will be an integral part of the Professional Development Leader in Math (PDL-M) Training Program, an effort to enhance school-based professional development in Georgia. Based on a diagnostic teaching approach, this teacher professional development program is focused on a three-phase lesson format enabling teachers to diagnose students' prior knowledge of focal math concepts, their engagement (phase one), their understanding of the reasoning and problem solving processes (phase two), and their ability to assimilate and apply the learned concepts, outside the classroom (phase three), using innovative teaching activities in the above-mentioned lesson phases.

Note that PDL-M has been specifically designed within the Georgia Primary Education Project (G-PriED) project, a five-year program funded by United States Agency for International Development (USAID), to support the Government of Georgia in its aim of implementing the new Math Curriculum, improving the quality of education, and to meet the national standards in relation to teachers, content, and process.

II. Methodology of the Assessment

In this section, the content framework and methodology to be used in the design and development of the Georgian Formative Assessment of Mathematics are described. The methodology used in GFA-Math will be common across all individual components/competencies (subtests) and addresses the following aspects.

- Purpose
- How Administered
- Material Needed for Administration
- Number of Items
- Scoring
- Frequency of Administration
- Description of Test Creation Process

A. Mathematics Components

The GFA-Math will assess students' skills and knowledge in 10 critical math components/competencies, as follow:

1. **Oral Counting** – Only in grades 1 and 2

The assessment of oral counting fluency targets children's ability to produce numbers fluently. In this task children are asked to count as far as they can. The score is based on the last correct number the child says previous to making an error

2. **One to One Correspondence (of Numbers and Quantities)** - Only in grades 1 and 2

This subtest targets children's ability to both recognize the items they need to count and to mentally tag those items that have already been counted. This is a timed task, since the purpose is to elicit a fluency measure.

3. **Number Identification** (Reading Numbers, Associating Number Symbols to Numerals and vice versa)

Assesses the student's knowledge and ability to identify written symbols. Here, students orally identify printed number symbols presented in a grid. The difficulty of the numbers included depends on grade level (with grade 2 numbers below 100, grade 4 numbers in the thousands, and grade 6 numbers including fractions, decimals, and percentages).

4. **Comparing Numbers (Quantities)**

Assesses the student's ability to make judgments about differences by comparing quantities, represented by numbers. The difficulty of numbers included depends on grade level, as in number identification above.

5. **Representing Numbers using a Model (Number Lines)**

Assesses the student's ability to identify/discern value on a number line. The child is asked to identify the number associated with a particular point on a graduated number line.

6. **Missing Number** – starting from grade 3

Assesses the student's ability to discern and complete number patterns. Each item in this subtest consists of three to four numbers in a number sequence and a place holder for a next or missing number. The child is asked to name the missing number. The numbers used and pattern complexity differ according to grade level.

7. **Word/Text Problems** – starting from grade 2

Assesses the student's conceptual understanding of basic operations. The child is presented with a word problem and asked to solve it. They are provided with manipulatives to assist them in solving the problem.

8. **Arithmetic Operations and their Properties**

Addition, subtraction, multiplication, and division problems: assesses the student's procedural competency in basic operations. In this subtest children are presented with addition, subtraction, multiplication, and division items and asked to solve them. The complexity of problems differs by grade level

9. **Geometry (shape recognition, classification, elementary topological notions interior, exterior and boundary points, concept of area and models of number lines and coordinate plane)**

Assesses the student's ability to recognize and distinguish geometrical attributes. In lower grades, the child is presented with a stimulus sheet having a number of geometric shapes on it. The child is given a description of a shape and asked to identify the shape on the sheet that does not meet the criteria. In upper grades pupil are asked to identify interior, exterior and boundary points of the geometric figure, dissect, and extend figures; classify geometric figures based on the number of their elements (e.g. number of vertices); Find the Axes of the symmetry of a figure; Find the Area; and Find the coordinates or demonstrate the simplest transformations on the plane (such as translations)

10. **Data Analysis, Probability, and Statistics** (Different ways to organize and represent Data, analyzing and interpreting Data; measures of central tendency Mean, Max, Min, Range) – Starting from Grade 3

Model Content Framework for GFA-Math

A Balanced Curriculum is focused on Important Mathematical Concepts: “Much research indicates that children from diverse backgrounds can learn mathematics if it is organized into big coherent chunks and if children have opportunity and time to understand each domain deeply. Successful countries select vital grade level topics and devote enough time so that students can gain initial understandings and mastery of those topics. They do not engage in repetitive review of those topics in the next year; they move on to new topics (Clements et al [2]).

To address the need for a well-balanced and coherent mathematics curriculum, the New Georgian National Standard in Mathematics, introduced in 2011, emphasizes students thinking, reflecting, modeling, communicating, problem solving and demonstrating positive attitudes in all mathematical subjects (strands): *Numbers and Operations, Patterns and Algebra, Geometry & Spatial Sense, and Data Analysis, Probability and Statistics*” (GNSM, 2011). Standards are both content and skills based, requiring content taught to address the needs and interests of the children, connects to every-day life, their future career preparation as well as preparing them life-long learners. While computational skills are still important, students must carry them out **with understanding**, and be able to apply them to solve problems.

Explicit teaching of *Numeracy* has been a focal point of education all around the world. *Numeracy* as applied to Primary School Math (1-4) primarily focuses on developing *Number Sense* and *Mental Computation*. *Number Sense* has been long regarded as a form of cognitive expertise. Children need to be taught and acquire this expertise based on their prior and intuitive sense of mathematics. *Number Sense* includes understanding of *Number concepts* and *operations* on them, ability to apply numbers and operations and to develop useful strategies for handling them, to reason quantitatively and draw conclusions. *Mental Computation*, closely related to *Number Sense*, emphasizes the mental processes that enable children to obtain answers and draw conclusions. “We can view these conceptual domains using a metaphor of an environment in which one can know how to find resources and use them to make things... the domain of numbers and quantities as an example of a conceptual environment, and... number sense as a set of capabilities for constructing and reasoning within mental models” (*James G. Greeno* [1]).

The Model Content Framework for GFA-Math competencies for each grade is designed with the assumption/expectation that students demonstrate proficiency in core/ most fundamental math competencies (provided by indicators) without which conceptual understanding of focal points and attainment of (result based) outcomes in all four Standards as outlined in the National standards in Mathematics for grades 1-6, would not be possible. Any further differentiation of all features of the outcomes would be significantly lengthier and denser. For that reason, the analyses given here are intended to be valuable starting points. The Model Framework and the sample items in right column were chosen keeping the following criteria in mind:

- Core math competencies and fluency expectations (based on indicators), predictive for attainment of culminating outcomes;
- Examples of key advances from the previous grade;
- Examples of major within-grade dependencies;
- Examples of opportunities for connections among stands, clusters or domains;

More specifically, according to broad literature detailing with research on this topic at elementary school level often list the following competencies (with some variations) as being vital:

- Oral counting (in lower grades 1-2)
- Number identification
- Numbers comparison (can be extended to finding max, min of at most three numbers),

- Missing number (is a substitute for counting with steps of 10s, 20s, 100s etc in upper grades)
- Word problems
- Problems on four arithmetic operations
- Geometry (shape recognition, classification, elementary topological notions interior, exterior and boundary points, concept of area and models of number lines and coordinate plane)
- Algebra (properties of Arithmetic operations, solving equations, in upper grades)
- Pattern extension
- Data analysis

The following table shows these 10 components for GFA-Math and examples of the types of tasks that will be developed for each of the grades.

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)																									
1	Oral Counting – Only in grades 1 and 2	Math. I.2.(1)	Counts forwards / backwards by 1s, 2s, 5s from any number;	Natural Numbers 1–20 and 0;																									
		Math. II.1.(1)	Counts forwards / backwards by 1s, 2s, 5s, 10s, 20s from any number;	Natural Numbers 1–100 და 0;																									
	GDA-MATH Component	Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)																									
2	One to One Correspondence (of Numbers and Quantities) Only in grades 1 and 2	Math. I.1.(2)	Demonstrates the Knowledge Ten-Base System Place Value Concept with selecting 10s in a group of objects; Uses different strategies for counting objects in a given group of objects;	Number ranges for grades One and Two are same as above; In this Task students are to count quantities / identify numbers in a structured (organized) group of similar objects; Counting objects in a non-structured (organized)group of objects or in caseof different types of objects is considered to be more advanced competency (this type of assignments are not given in the beginning of the year)																									
		Math. II.1.(2)																											
	GDA-MATH Component	Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)																									
3	Number Identification (Reading Numbers, Associating Number Symbols to Numerals and vice versa)	Math. I.1(3)	Reads and Writes the Numbers; Uses the concept of Zero and corresponding symbol in adequate situations...; Reading 20 Number Symbols	Here are some numbers. I want you to tell me what each number is. I am going to use this stopwatch and will tell you when to begin and when to stop. When I say begin, say the numbers as best as you can. I will keep quiet and listen to you. Start with this number and go across the page. [sweep your hand over the first line] - [point to first number] Start here. Are you ready? . . . Begin. - What number is this ? <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>3</td><td>5</td><td>8</td><td>15</td><td>10</td></tr> <tr><td>4</td><td>17</td><td>18</td><td>11</td><td>7</td></tr> <tr><td>13</td><td>0</td><td>19</td><td>2</td><td>20</td></tr> <tr><td>6</td><td>12</td><td>9</td><td>16</td><td>14</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>	3	5	8	15	10	4	17	18	11	7	13	0	19	2	20	6	12	9	16	14					
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13	0	19	2	20																									
6	12	9	16	14																									
	Math. I.2(4)																												
	20–25 Numbers	Math. II.1.(1)	Reads One and Two digit numbers;																										

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)																									
				<table border="1"> <tr><td>3</td><td>11</td><td>25</td><td>7</td><td>50</td></tr> <tr><td>36</td><td>2</td><td>73</td><td>44</td><td>0</td></tr> <tr><td>21</td><td>99</td><td>6</td><td>87</td><td>32</td></tr> <tr><td>52</td><td>4</td><td>17</td><td>66</td><td>15</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>	3	11	25	7	50	36	2	73	44	0	21	99	6	87	32	52	4	17	66	15					
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	20–25 Numbers	Math. III.1.(1)	Reads and Expresses Numbers;	<table border="1"> <tr><td>9</td><td>5</td><td>114</td><td>29</td><td>15</td></tr> <tr><td>450</td><td>27</td><td>352</td><td>100</td><td>83</td></tr> <tr><td>18</td><td>960</td><td>121</td><td>31</td><td>103</td></tr> <tr><td>851</td><td>13</td><td>386</td><td>6</td><td>47</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>	9	5	114	29	15	450	27	352	100	83	18	960	121	31	103	851	13	386	6	47					
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	20–25 Numbers	Math.IV.1(1)	Reads and Expresses Numbers;	<table border="1"> <tr><td>18</td><td>456</td><td>14</td><td>45</td><td>453</td></tr> <tr><td>145</td><td>23</td><td>365</td><td>86</td><td>583</td></tr> <tr><td>18</td><td>952</td><td>21</td><td>23</td><td>1640</td></tr> <tr><td>101</td><td>1345</td><td>23</td><td>546</td><td>247</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>	18	456	14	45	453	145	23	365	86	583	18	952	21	23	1640	101	1345	23	546	247					
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145	23	365	86	583																									
18	952	21	23	1640																									
101	1345	23	546	247																									
	20 Numbers	Math. V.1(1) Math.V.2.(1)	Reads Numbers above Million using new Numerals (e.g. Mili, Bi, Trillions, etc); Reads and Expresses/Writes Common Fractions and Mixed Numbers;	<table border="1"> <tr><td>27</td><td>105 00</td><td>12</td><td>6</td><td>689</td></tr> <tr><td>79</td><td>$\frac{2}{5}$</td><td>97</td><td>444</td><td>$1\frac{3}{4}$</td></tr> <tr><td>$\frac{1}{37}$</td><td>136 5</td><td>504 2</td><td>56</td><td>318</td></tr> <tr><td>900 3</td><td>$\frac{23}{32}$</td><td>$\frac{9}{13}$</td><td>200 0</td><td>122 0</td></tr> </table>	27	105 00	12	6	689	79	$\frac{2}{5}$	97	444	$1\frac{3}{4}$	$\frac{1}{37}$	136 5	504 2	56	318	900 3	$\frac{23}{32}$	$\frac{9}{13}$	200 0	122 0					
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	20 Numbers	Math.VI.1(3)	Focus on non-negative Rational Numbers Only; Reads Natural Numbers, Fractions and Decimals;	<table border="1"> <tr><td>0,9</td><td>12</td><td>34</td><td>$\frac{780}{2}$</td><td>$2\frac{5}{27}$</td></tr> <tr><td>121</td><td>0,01</td><td>57</td><td>$\frac{1}{37}$</td><td>3,2</td></tr> <tr><td>120</td><td>$5\frac{7}{31}$</td><td>10</td><td>79</td><td>9,3</td></tr> <tr><td>110 1</td><td>12</td><td>7,2</td><td>$\frac{208}{7}$</td><td>$\frac{13}{21}$</td></tr> </table>	0,9	12	34	$\frac{780}{2}$	$2\frac{5}{27}$	121	0,01	57	$\frac{1}{37}$	3,2	120	$5\frac{7}{31}$	10	79	9,3	110 1	12	7,2	$\frac{208}{7}$	$\frac{13}{21}$					
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	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)																									
4	Comparing Numbers (Quantities)	Math.I.4.(3)	Compares quantities in two groups of objects by pairing objects from different groups,	Look at these numbers. Which one is bigger? Point to the number and tell me the number 14 and 9; 7 and 12;																									
	20 items	Math.II.1.(3)	Uses knowledge about Place Value (Ten-Base) System when comparing numbers;	16 and 21; 34 and 29; 68 and 81																									
	20 items	Math.III.1(3)	Uses knowledge about Place Value (Ten-Base) System when comparing numbers;	456 and 502 ; 489 and 601; 1000 and 879;																									
	20 items	Math.IV.1 (3)	Uses knowledge about Place Value (Ten-Base) System when comparing numbers;	793 and 815; 12531 and 9487; 2691 and 5001;																									

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
	20 items	Math.V.1. Math.V.2.(3)	Finds the magnitude of Numbers above million; Compares two fractions, also using the main property of Fractions (i.e. with obtaining equal fractions with finding common denominator);	41021 and 10087; 19306 and 23815; Comparing Common Fractions $\frac{3}{7}$ and $\frac{5}{7}$
	20 items	Math.VI.1.(4)	Identifies different parts of Fractions and Mixed Numbers, such as Whole Part, Numerator, Denominator – uses this knowledge to estimate and compare fractions;	175304 and 173987; Comparing Mixed numbers (fraction part of which contain / have equal denominators) $\frac{5}{3}$ and $1\frac{1}{3}$; Comparing Decimals 0,29 and 0,14; 0,651 and 0,649;
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
5	Representing Numbers using a Model (Number Lines) In grades 1 and 2 'Number Ladders' are used instead of Number Line, which is more abstract concept	Math.I.2.(1)	Indicates/names the Numbers before or after the given number;	Naming/indicating four numbers on the number ladder when given number is already shown. Whole Numbers 0–20.
	5 questions	Math.II.4(3)	Indicates/names nearest 5s, 10s or 20s to the given Number;	Naming/indicating five numbers on the number line when given numbers are already shown. (again number ladder drawings are used as in first grade test) Whole Numbers 0–100.
	5 questions	Math.III.1(5)	Counts forwards / backwards from a given number with steps corresponding to Place Value, (1s, 10s, 100s).	Naming/indicating five numbers on the number line when given numbers are already shown. In the beginning of the school year Whole Numbers 0-31; Whole Numbers 0–1000.
	5 questions	Math.IV.1.(1) Math.IV.1.(4)	Demonstrates the knowledge of Place Value (Ten-Base system) using a model to represent numbers (e.g. Number Line); Counts forwards / backwards from a given number with steps corresponding to Place Value, (1s, 10s, 100s, 1000s).	Naming/indicating five numbers on the number line when given numbers are already shown. (again number ladder drawings are used as in first grade test) Whole Numbers 0–10'0000.
	5 questions	Math. V.2.(2)	Expresses parts/fractions of a whole on the number line and indicates the equal fractions; Counts forwards/backwards with steps corresponding to fractions of a whole (including passing whole numbers while counting)	Naming/indicating five numbers on the number line when given numbers are already shown. 1. Whole numbers from 0-million; 2. Fractions less than 1;

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
	5 questions	Math.VI.1.(2)	Represents Decimals using different ways (including on the Number Line);	Naming/indicating five numbers on the number line when given numbers are already shown. 1. Whole numbers from 0-million; 2. Fractions and Decimals;
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
6	Missing Number This task is connected to counting, i.e. shows how counting competency evolves in upper grades (for reference see [1]);	Math.I.1	Names the number before and after the given Number (i.e. Numbers preceding and succeeding it)	Here are some numbers. 1, 2, 3, what number goes here? <i>[Indicate the missing place]</i> 1,2,3_; 6, _, 8, 9;
	15 problems within the Item	Math.II.1 Math.II.6(1)	Names the number before and after the given One and Two-Digit Number (i.e. Numbers preceding and succeeding it); Fills in with the missing member in a given sequence (of numbers or objects)	_,76,77,78; 11,12,_,14; 20, _, 30, 35; 0,20, _,60;
	15 problems	Math. III.1(4)	Names the number before and after the given Number (i.e. Numbers preceding and succeeding it); names nearest 10s, 100s to the given Number;	200,_,300,400; _, 240, 245, 250; 834,_,836,837;
	15 problems	Math.IV.1.(4)	Names the number before and after the given Number (i.e. Numbers preceding and succeeding it); names nearest 10s, 100s, 1000s to the given Number;	_, 242, 244, 246; 130, 140,_, 160; 768, 769,770,_; _, 1200, 1300, 1400;
	15 problems	Math.V.2(2) Math.V.5(1)	Counts forwards/backwards with steps corresponding to parts/fractions of a whole (including task on passing the whole number).	$\frac{4}{10}, \frac{5}{10}, \frac{6}{10}, \dots$
	15 problems	Math.VI.5(3)	Counts forwards/backwards with steps corresponding to parts/fractions of a whole;	$\frac{7}{8}, \frac{5}{8}, \frac{1}{8},$ $7\frac{2}{3}, 6\frac{2}{3}, 5\frac{2}{3};$ 2, _ 2,2 2,3 0,55 0,45 0,35 _;
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
7	Text Problems	Math. I.	–	–
	5 Problems	Math. II.5(1,2) and Math II.7	Selects the arithmetic operation and strategy and/or model to apply it for solving a problem	One step problems on arithmetic operations containing minimum text Problems similar to those usually found in the Textbooks approved by MoES
	5 Problems	Math. III.3(1) Math. III.4(2) Math. III.7(2)	Writes an algebraic expression corresponding to practical problem or real life situation; Algebraic expressions containing operations of addition and subtraction, <i>multiplication-division</i> ;	
	5 Problems	Math. IV.7.	Writes an algebraic expression corresponding to practical problem or real life situation; Simple problems on addition-subtraction; problems on multiplication-division and those containing an unknown;	
	5 Problems	Math.V.6(1) Math.V.5(1)	Writes an algebraic expression corresponding to practical problem or real life situation; equations and /or inequalities containing unknown on one side only; Describes (in real life situation) the change in quantity with a constant rate, resulting from repetitive addition/subtraction of a constant;	
	5 Problems	Math. VI.6.	Writes an algebraic expression corresponding to practical problem or real life situation; equations and/or inequalities containing unknown on one side only;	
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
8	Arithmetic Operations 12 one-step problems for each Addition and Subtraction	Math. I.3.(2,3)	Uses a mental calculation strategy, counting with 1s when solving problems	$2 + 5 = _;$ $12 + 7 = _;$ $17 - 4 = _;$ $14 - 6 = _;$
	12 one-step problems for each of the Four Arithmetic Operations	Math. II.2(4) Math. II.3(2) Math. II.5(2)	Uses mental calculation strategy passing by 10s (filling up to 10s) to solve addition-subtraction problems Doubles the numbers from to 10; also 10s and	Sample Addition /Subtraction problems $5 + 42 = _;$ $93 + 4 = _;$ $63 + 9 = _;$ $19 - 10 = _;$ $26 - 7 = _;$

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
			<p>20s Connects this operation to counting with corresponding steps;</p> <p>Selects the arithmetic operation and strategy and/or model to apply it for solving the given problem (problems on addition, subtraction, doubling or finding the half of given number)</p>	<p>Doubling a Number / Finding its Half: $2*4=_$; $3*3=_$; $2*5=_$; $2*10=_$; $4*20=_$; $10:2=_$; $80:2=_$;</p>
	15 one-step problems	Math. III.2(1) Math. III.3. 4	<p>Selects the arithmetic operation and strategy and/or model to apply it for solving the given problem (different strategies of addition-subtraction);</p> <p>Uses the strategies for mental calculations; Finds the unknown Addend with the given other Addend and the sum;</p> <p>Analogously, student can find an unknown subtrahend with given Minuend and Difference are given (Whole numbers 0-1000)</p>	<p>$101 + 420 = _$; $193 + 14 = _$; $610 + 9 = _$; $109 - 10 = _$; $260 - 15 = _$; $22 \times 5 = _$; $121+37 = _$;</p> <p>Algebra task: $54+\square=72$; $\square -37 = 61$; $3*\square = 60$; $\square:5 = 35$;</p>
	15 one-step problems	Math.IV.2(1) Math. IV.2(2)	<p>Uses one of the mental calculation strategies for addition-subtraction to solve problems and explains the method/strategy used;</p> <p>Uses different strategies for solving problems on addition-subtraction;</p>	<p>$1030 + 620 = _$; $993 + 7 = _$; $19 + 230 = _$; $4580 - 105 = _$; $260 - 15 = _$; $22 \times 5 = _$; $121+37 = _$; $84 : 21 = _$;</p> <p>Algebra task: $150 + \square=720$; $\square - 370 = 610$; $30*\square = 630$; $\square:5 = 150$;</p>
	15 one-step problems	Math. V.3.(4) Math. V.3.(1)	<p>Based on the context of a problem chooses the adequate strategy for arithmetic operation to solve the problem;</p> <p>Uses the properties of operations and relations between them when performing operations on mixed numbers or simplifying numerical expressions (adding-subtracting mixed numbers, multiplying Fraction by a whole number)</p>	<p>$1533+120=_$; $1203-400=_$;</p> <p>$\frac{10}{9} - \frac{1}{9} = _$; $\frac{7}{5} + 3\frac{4}{5} = _$;</p> <p>Algebra task: $15000 - \square = 7200$; $\square + 370 = 610$; $30* \square = 1500$; $\square:5 = 83$;</p> <p>Problems on Decimals $\square + 1\frac{3}{8} = 1\frac{2}{8}$</p>

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
				$1\frac{1}{2} - \square = \frac{1}{2}$
	15 one-step problems	Math.VI.2(2) Math.VI.2(4)	<p>Uses the basic properties of fractions when adding-subtracting them;</p> <p>Finds the unknown dividend with given divisor and quotient in a division problem;</p> <p>analogously finds unknown factor with given factor and product in a multiplication problem;</p>	<p>4655+1020=_; 1933+1442=_; 7311-421=_;</p> <p>$\frac{10}{9} - 1\frac{1}{9} = _;$ $\frac{7}{5} + 3\frac{4}{5} = _;$</p> <p>1,5 + 0,1=_; 0,15 – 0,03=_;</p> <p>Algebra task:</p> <p>$\square - 1\frac{3}{8} = \frac{2}{8};$ $2\frac{2}{6} - \square = \frac{8}{6};$ $\square + 1\frac{1}{2} = \frac{5}{2};$ 6,2 – □ = 4,1 $1\frac{1}{2} - \square = \frac{1}{2}$</p>
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
9	Geometry – Identifying and Describing the Geometric figures and their Attributes	Math. I.6. 5 შიგნითა/სამრეკანა	Identifies and describes the Geometric shapes.	Identifying only one type of geometric shape in the unordered group of objects; And counting the number of samples corresponding to this type.
	5 problems	Math.II.8(1) Math.II.8(2)	<p>Compares and groups the geometric shapes based on their attributes (e.g. based on their number of vertices, edges);</p> <p>Identifies inner and outer parts of the figure;</p> <p>Points to the points that are inside, outside the figure or on its boundary;</p>	Please see below in Grade Three;
	5 questions / problems	Math.III.8(2)	Identifies and distinguishes different elements of geometric figures and uses correct terminology when describing them (e.g. vertex, edge, face, etc)	Problems in which students are asked to identify the interior, exterior points and those on the boundary of the figure are intended for Grade Three Tests;
		Math.IV.8(2) Math.IV.9(2)		
	5 questions / problems	Math.V.8(1) Math.V.8(2) Math.V.9(3) Math.V.10(1)	Classifies Triangles according to the angles (obtuse, right, acute);	Classifying Triangles;

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
		Math.V.10(2)	Shows the parallel and intersecting sides of a flat geometric figure; Reasons if given two sides will intersect after they are extended; Uses additivity property of Area to find the area of the given figure covering it with the combination of with non-overlapping shapes; Uses the pairs of numbers (Concept of coordinates) to describe a location and uses this method in real life situation; Moves on the grid according to the given instructions and describes how to reach the indicated cell from the initial given cell (e.g. two cells up, two cells right);	Please, see below in Grade Six;
	5 questions / problems	VI.8(1) VI.8(3)	Uses Translation to translate the given point of a geometric figure so that its image coincides the indicated point image point on the plane; Finds the axes asymmetry for a configuration of flat geometric figures;	The problems on Area and Orienting on the Grid is intended for Grade Six students;
	GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)
10	Data Analysis Only in Grades 3-6 3 questions / problems	Math. III.13. (1) Math. III.13. (2)	Describes/characterizes the grouped qualitative data in terms of its size, number of its sub-groups, size of each sub-group, repetitiveness of a member and its order; Describes and interprets pictogram and a data represented using a Table either (orally or in written form);	The different ways to represent qualitative and quantities data Table, Pictogram
	3 questions	Math.IV.12.(1) Math.IV.14.(2)	Selects appropriate data from a categorized group of data; Orally describes and interprets data represented by a Column diagram (orally or in written form);	The ways to represent qualitative and quantities data: Table, Pictogram, Column diagram/chart
	3 questions	Math.V.13.(2)	Compares two groups of data and identifies qualitative and / or quantitative characteristics that are	The ways to represent qualitative and quantities data: Frequency chart, pictogram, column diagram/chart

	National (Georgian) Standards in Math and GDA-MATH Component	Code Format Grade.Outcome (Indicator number)	Examples of Indicators from Standards	Sample Tasks / Evolution of tasks in Grades (1–6)	
			common/different to these two groups (qualitative characteristics can be the type, frequency, order, position of the instances/members)		
	3 questions	Math. VI.13.	Finds the Mean, Mode; Max, Min, Range for the given set of quantitative data;	The different measures of central tendency for quantitative data: Mean, Mode; Max, Min, Range;	

*Note on Missing Number Task: [1] Based on the objectives set by NCTM (2008) and national and international assessments (e.g., NAEP, TIMSS), children need to be familiar with numbers and able to identify missing numbers. In the early grades, children should be counting by ones, twos, fives, and tens (NCTM, 2008). Children also should be able to count backward. In general, children should be able to identify missing numbers and strategically demonstrate their knowledge of these numbers (Clarke & Shinn, 2004). Good performance on a missing number task demonstrates the depth of the child’s understanding that he or she needs to count 3 more numbers from 6, and those numbers are “7, 8, 9”. See

Clarke, B., Baker, S., Smolkowski, K., & Chard, D. J. (2008). An analysis of early numeracy curriculum-based measurement: Examining the role of growth in student outcomes. *Remedial and Special Education, 29*(1), 46–57..

Task 1: Number Identification

📖 Sheet M1

🕒 60 seconds

🗣️ Here are some numbers. I want you to tell me what each number is. I am going to use this stopwatch and will tell you when to begin and when to stop. When I say begin, say the numbers as best as you can. I will keep quiet and listen to you. Start with this number and go across the page. [*sweep your hand over the first line*]
 - [*point to first number*] Start here. Are you ready? . . . Begin.
 - What number is this ?

- 👉
- If the time on the stopwatch runs out (60 seconds).
- ↻
- If a child stops on a number for 5 SECONDS.

👉
 If you have marked as incorrect all of the answers on the first line with no self-corrections, discontinue this exercise, check the box at the bottom, and go on to the next exercise.

✂️ (/) Incorrect or no response
 () After the last number read

					Tot. Cum.
12	2	17	7	77	(5)
9	18	32	53	11	(10)
62	93	34	5	83	(15)
10	19	25	39	20	(20)
74	4	60	1	46	(25)
48	13	15	97	8	(30)

✂️ Time left (seconds):

✂️ Check this box if the exercise was discontinued because the child had no correct answers in the first line.

Task 2: Quantity Discrimination - Example	Sheet M2-A	🕒 x
<p>P1:</p> <p>👂 Look at these numbers. Which one is bigger? Point to the number and tell me the number.</p> <p style="text-align: center;">10 4</p> <p>✓👂 That's correct, 10 is bigger. Let's do another one.</p> <p>✗👂 The bigger number is 10. [Point to 10] This is 10. [Point to 4] This is 4. 10 is bigger than 4. Let's do another one.</p>		👋 x
<p>P2:</p> <p>👂 Look at these numbers. Tell me which number is bigger.</p> <p style="text-align: center;">20 12</p> <p>✓👂 That's right, 20 is bigger. Let's continue.</p> <p>✗👂 The bigger number is 20. [Point to 12] This number is 12. [Point to 20] This is 20. 20 is bigger than 12. Let's continue.</p>		

Task 2: Quantity Discrimination - Exercise	Sheet M2-B	🕒 60 seconds																																																																																
<p>👂 Now, I want you to go as quickly as you can, and do the best that you can. I am going to use this stopwatch and will tell you when to begin and when to stop. When I say begin, look at these numbers and tell me which one is bigger. Point to the number and tell me the number.</p> <p>- Ready? Begin.</p>		👋 x																																																																																
<p>👎 (/) Incorrect or no response () After the last item attempted.</p> <table border="1" data-bbox="188 1032 983 1749"> <tbody> <tr> <td>5</td><td>6</td><td><u>6</u></td><td></td><td>8</td><td>7</td><td><u>8</u></td><td></td> </tr> <tr> <td>15</td><td>20</td><td><u>20</u></td><td></td><td>14</td><td>17</td><td><u>17</u></td><td></td> </tr> <tr> <td>19</td><td>18</td><td><u>19</u></td><td></td><td>96</td><td>40</td><td><u>96</u></td><td></td> </tr> <tr> <td>50</td><td>57</td><td><u>57</u></td><td></td><td>42</td><td>21</td><td><u>42</u></td><td></td> </tr> <tr> <td>79</td><td>70</td><td><u>79</u></td><td></td><td>32</td><td>36</td><td><u>36</u></td><td></td> </tr> <tr> <td>4</td><td>9</td><td><u>9</u></td><td></td><td>7</td><td>5</td><td><u>7</u></td><td></td> </tr> <tr> <td>19</td><td>2</td><td><u>19</u></td><td></td><td>13</td><td>20</td><td><u>20</u></td><td></td> </tr> <tr> <td>11</td><td>10</td><td><u>11</u></td><td></td><td>22</td><td>25</td><td><u>25</u></td><td></td> </tr> <tr> <td>45</td><td>64</td><td><u>64</u></td><td></td><td>84</td><td>97</td><td><u>97</u></td><td></td> </tr> <tr> <td>51</td><td>35</td><td><u>51</u></td><td></td><td>29</td><td>25</td><td><u>29</u></td><td></td> </tr> </tbody> </table>	5	6	<u>6</u>		8	7	<u>8</u>		15	20	<u>20</u>		14	17	<u>17</u>		19	18	<u>19</u>		96	40	<u>96</u>		50	57	<u>57</u>		42	21	<u>42</u>		79	70	<u>79</u>		32	36	<u>36</u>		4	9	<u>9</u>		7	5	<u>7</u>		19	2	<u>19</u>		13	20	<u>20</u>		11	10	<u>11</u>		22	25	<u>25</u>		45	64	<u>64</u>		84	97	<u>97</u>		51	35	<u>51</u>		29	25	<u>29</u>			<p>👋</p> <ul style="list-style-type: none"> • If the time on the stopwatch runs out (60 seconds). 🔄 • If a child stops on a number for <u>5 SECONDS</u>. <p>👋</p> <p>If you have marked as incorrect all of the answers on the first line with no self-corrections, discontinue this exercise, check the box at the bottom, and go on to the next exercise.</p>
5	6	<u>6</u>		8	7	<u>8</u>																																																																												
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👎 Check this box if the exercise was discontinued because the child had no correct answers in the first vertical line.																																																																																		

Task 3: Missing Number - Example	Sheet M3-A	⌚ ×
<p>P1:</p> <p>☞ Here are some numbers. 1, 2, 3, what number goes here? 1, 2, 3, ____</p> <p>✓☞ That's correct, 4.</p> <p>✗☞ The number four goes here. Say the numbers with me. [Point to each number] ... 1, 2, 3, 4. 4 goes here. Let's do another one.</p>		☞ ×
<p>P2:</p> <p>☞ Here are some more numbers. 17, [point to dash], 19, 20 what number goes here? [point to dash again]</p> <p>17, ____, 19, 20</p> <p>✓☞ That's right, 18.</p> <p>✗☞ The number 18 goes here. Say the numbers with me. [Point to each number] ... 17, 18, 19, 20. [Point to dash] 18 goes here. Let's do another one.</p>		
<p>P3:</p> <p>☞ Here are some more numbers. [point to dash], 25, 30, 35 what number goes here? [point to dash again]</p> <p>____, 25, 30, 35</p> <p>✓☞ That's right, 20.</p> <p>✗☞ The number 20 goes here. Say the numbers with me. [Point to each number] ... 20, 25, 30, 35. [Point to dash] 20 goes here. Let's do some more.</p>		

Task 3: Missing Number - Exercise	Sheet M3-B	⌚ 60 Seconds																																																																																										
<p>☞ Now we're going to do some more. Here are some more numbers. For each group of numbers I want you to tell me what number is missing. Now, I want you to go as fast as you can, and do the best that you can. I am going to use this stopwatch and will tell you when to begin and when to stop. When I say begin, look at these numbers and tell me the missing number.</p> <p>- Ready? Begin</p>		<p>☞</p> <ul style="list-style-type: none"> • If the time on the stopwatch runs out (60 seconds). 																																																																																										
<p>☞ (/) Incorrect or no response () After the last item attempted</p> <table border="1" data-bbox="167 1240 1080 1823"> <tbody> <tr> <td><u>18</u></td><td>19</td><td>20</td><td>21</td><td></td><td><u>5</u></td><td>10</td><td>15</td><td>20</td></tr> <tr> <td>86</td><td>87</td><td><u>88</u></td><td>89</td><td></td><td>122</td><td>123</td><td><u>124</u></td><td>125</td></tr> <tr> <td>20</td><td>30</td><td>40</td><td><u>50</u></td><td></td><td>2</td><td><u>4</u></td><td>6</td><td>8</td></tr> <tr> <td><u>1</u></td><td>2</td><td>3</td><td>4</td><td></td><td>56</td><td>57</td><td>58</td><td><u>59</u></td></tr> <tr> <td><u>98</u></td><td>99</td><td>100</td><td>101</td><td></td><td><u>100</u></td><td>200</td><td>300</td><td>400</td></tr> <tr> <td>347</td><td>348</td><td>349</td><td><u>350</u></td><td></td><td><u>5</u></td><td>6</td><td>7</td><td>8</td></tr> <tr> <td>6</td><td>7</td><td><u>8</u></td><td>9</td><td></td><td>18</td><td><u>19</u></td><td>20</td><td>21</td></tr> <tr> <td>299</td><td><u>300</u></td><td>301</td><td>302</td><td></td><td>40</td><td>45</td><td><u>50</u></td><td>55</td></tr> <tr> <td>10</td><td><u>20</u></td><td>30</td><td>40</td><td></td><td>68</td><td>69</td><td>70</td><td><u>71</u></td></tr> <tr> <td>10</td><td>11</td><td>12</td><td><u>13</u></td><td></td><td>7</td><td>8</td><td>9</td><td><u>10</u></td></tr> </tbody> </table>	<u>18</u>	19	20	21		<u>5</u>	10	15	20	86	87	<u>88</u>	89		122	123	<u>124</u>	125	20	30	40	<u>50</u>		2	<u>4</u>	6	8	<u>1</u>	2	3	4		56	57	58	<u>59</u>	<u>98</u>	99	100	101		<u>100</u>	200	300	400	347	348	349	<u>350</u>		<u>5</u>	6	7	8	6	7	<u>8</u>	9		18	<u>19</u>	20	21	299	<u>300</u>	301	302		40	45	<u>50</u>	55	10	<u>20</u>	30	40		68	69	70	<u>71</u>	10	11	12	<u>13</u>		7	8	9	<u>10</u>		<p>☞</p> <ul style="list-style-type: none"> • If a child stops on a number for <u>5 SECONDS</u>. <p>☞</p> <p>If you have marked as incorrect all of the answers on the first line with no self-corrections, discontinue this exercise, check the box at the bottom, and go on to the next exercise.</p>
<u>18</u>	19	20	21		<u>5</u>	10	15	20																																																																																				
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<p>☞ Check this box if the exercise was discontinued because the child had no correct answers in the first vertical line.</p>																																																																																												

Task 4: Addition - Example	Sheet M4-A	⌚ ×
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P1:

Here is an addition problem. Three plus two. How much is two plus three?

$$2 + 3 =$$

That's right, two plus three is five. Let's try another.

The answer is five. Two plus three is five. Let's try another.



P2:

Here is another addition problem. Twelve plus four. How much is twelve plus four?

$$12 + 4 =$$

That's right, twelve plus four is sixteen.

The answer is sixteen. Twelve plus four is sixteen. Let's do some more.

Task 4: Addition - Exercise

Sheet M4-B – M4-C

60 seconds

Here are more addition problems. For each problem you will tell me the answer. Ok? I will use this stopwatch. I want you to tell me the first answer that seems right to you. Go as fast as you can, but try to give the right answer. We will start here [point to the first problem] and go across [point along the first row]. When we finish this row, we will go to the next row and start here [point to the beginning of the second row].

- Ready? Begin



If the time on the stopwatch runs out (60 seconds).



If a child stops on a number for 5 SECONDS.

(/) Incorrect or no response

() After last item attempted.

$4 + 2 =$ (6)	$8 + 2 =$ (10)	$8 + 6 =$ (14)	$16 + 4 =$ (20)	$7 + 1 =$ (8)	(5)
$5 + 4 =$ (9)	$10 + 3 =$ (13)	$10 + 10 =$ (20)	$2 + 2 =$ (4)	$5 + 7 =$ (12)	(10)
$6 + 6 =$ (12)	$3 + 4 =$ (7)	$6 + 2 =$ (8)	$5 + 6 =$ (11)	$15 + 5 =$ (20)	(15)
$4 + 5 =$ (9)	$7 + 2 =$ (9)	$3 + 9 =$ (12)	$13 + 3 =$ (16)	$1 + 5 =$ (6)	(20)
$5 + 5 =$ (10)	$2 + 11 =$ (13)	$3 + 2 =$ (5)	$6 + 4 =$ (10)	$6 + 10 =$ (16)	(25)
$10 + 5 =$ (15)	$5 + 3 =$ (8)	$7 + 3 =$ (10)	$4 + 7 =$ (11)	$11 + 9 =$ (20)	(30)



If you have marked as incorrect all of the answers on the first line with no self-corrections, discontinue this exercise, check the box at the bottom, and go on to the next exercise.

Time left (seconds):

Check this box if the exercise was discontinued because the child had no correct answers in the first vertical line.

Task 5: Subtraction - Example		Sheet M5-A	⌚ ✕		
<p>P1:</p> <p>👤 Here is a subtraction problem. Seven minus two. How much is seven minus two? $7 - 2 =$</p> <p>✓ 👤 That's right, Seven minus two is five. Let's try another.</p> <p>✕ 👤 The answer is five. Seven minus two is five. Let's try another.</p>			👤 ✕		
<p>P2:</p> <p>👤 Here is another subtraction problem. Seventeen minus three. How much is seventeen minus three? $17 - 3 =$</p> <p>✓ 👤 That's right, seventeen minus three is fourteen.</p> <p>✕ 👤 The answer is fourteen. Seventeen minus three is fourteen. Let's do some more.</p>					
Task 5: Subtraction - Exercise		Sheet M5-B – M5-C	⌚ 60 seconds		
<p>👤 Here are more subtraction problems. For each problem you will tell me the answer. Ok? I will use this stopwatch. I want you to tell me the first answer that seems right to you. Go as fast as you can, but try to give the right answer. We will start here [<i>point to the first problem</i>] and go across [<i>point along the first row</i>]. When we finish this row, we will go to the next row and start here [<i>point to the beginning of the second row</i>].</p> <p>- Ready? Begin</p>			<p>👤</p> <ul style="list-style-type: none"> • If the time on the stopwatch runs out (60 seconds). <p>🔄</p> <ul style="list-style-type: none"> • If a child stops on a number for <u>5 SECONDS</u>. <p>👤</p> <p>If you have marked as incorrect all of the answers on the first line with no self-corrections, discontinue this exercise, check the box at the bottom, and go on to the next exercise.</p>		
<p>🚫 (/) Incorrect or no response</p> <p>() After last item attempted</p>					
6 - 2 = (4)	10 - 2 = (8)	14 - 6 = (8)	20 - 4 = (16)	8 - 1 = (7)	(5)
9 - 4 = (5)	13 - 3 = (10)	20 - 10 = (10)	4 - 2 = (2)	12 - 7 = (5)	(10)
12 - 6 = (6)	7 - 4 = (3)	8 - 2 = (6)	11 - 6 = (5)	20 - 5 = (15)	(15)
9 - 5 = (4)	9 - 2 = (7)	12 - 9 = (3)	16 - 3 = (13)	6 - 5 = (1)	(20)
10 - 5 = (5)	13 - 11 = (2)	5 - 2 = (3)	10 - 4 = (6)	16 - 10 = (6)	(25)
15 - 5 = (10)	8 - 3 = (5)	10 - 3 = (7)	11 - 7 = (4)	20 - 9 = (11)	(30)
<p>🚫 Time left (seconds):</p>					
<p>🚫 Check this box if the exercise was discontinued because the child had no correct answers in the first vertical line.</p>					