All Children Reading – Asia

Final Report
Activity 4.4

Classroom-Based Early Grade Reading Assessment— Cambodia

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ACRONYMS AND ABBREVIATIONS

AAM	assessor accuracy measure
ACR-Asia	All Children Reading-Asia
CB-EGRA	classroom-based early grade reading assessment
cwpm	correct words per minute
DCD	Department of Curriculum Development
EGRA	Early Grade Reading Assessment
EQAD	Education Quality Assurance Department
LQAS	lot quality assurance sampling
MoEYS	Ministry of Education Youth and Sport
ORF	oral reading fluency
PED	Primary Education Department
RTE	Real-Time Evaluation
TBD	to be determined
TTD	Teacher Training Department

1. INTRODUCTION AND BACKGROUND

The "traditional" early grade reading assessment (EGRA) is an individually administered oral reading assessment that has been developed, validated, and refined for use across a wide range of countries and languages over the past 15 years. It is a reliable and valid measure of foundational reading skills, but it requires a trained assessor and is time-consuming and expensive to administer. Therefore, some donors and practitioners are seeking classroom-based alternatives that can be used in place of the traditional EGRA, while still reliably measuring the same foundational skills.

Classroom-based assessments are not new, and they have been used for a wide range of purposes. For example, these assessments have been leveraged for district level monitoring using lot quality assurance sampling (LQAS) approaches, as well as for use by teachers in the form of the Group-Administered Learning Assessment. Recently, a classroom-based EGRA (CB-EGRA) was developed by the Nepal Ministry of Education, Science and Technology under the USAID/Nepal Early Grade Reading Project II. The CB-EGRA has been used in Nepal in conjunction with the Grade 3 National Assessment (for country-level reporting), as well as to conduct ongoing or ad-hoc school-based monitoring. Most recently, the CB-EGRA was rapidly mobilized in Nepal to determine learning loss due to the coronavirus disease 2019 pandemic.

The purpose of this activity was to develop and pilot a CB-EGRA in the Khmer language for validation and use in Cambodia. The CB-EGRA is a paper-based assessment that can be administered with little training to a group of students at one time. It is therefore an arguably more efficient and cost-effective method of obtaining early grade reading data, compared to a traditional EGRA.

1.1 Traditional EGRA vs CB-EGRA

The starting point for this activity was a review of the 2019 version of the traditional Khmer EGRA, developed under All Children Reading (ACR)-Cambodia. While earlier versions of the EGRA exist, the 2019 EGRA was chosen as the version of reference for this activity because it has undergone extensive review and approval by the Ministry of Education, Youth and Sport (MoEYS). The intention of using this EGRA as a starting point was to then develop and pilot a version of the CB-EGRA that would yield results similar to those of the traditional EGRA, across a range of subtasks.

A summary of the tasks on the 2019 traditional EGRA and the newly developed CB-EGRA, along with their respective knowledges and skills, are shown in Table 1.

Table 1.　　Comparison of Tasks on the Traditional Versus CB-EGRA in Khmer

Knowledge or Skill Tested	Traditional EGRA	CB-EGRA
Letter-Sound Correspondence	1. Consonant Identification (33 consonants) 2. Vowel Identification (23 vowels) 3. Letter Identification (100 letters: consonants and vowels)	1. Letter Identification (15 multiple choice items with 5 answer items each; 10 items testing consonants and 5 testing vowels)
Letter-Sound Correspondence and Word Recognition	4. Familiar Word Reading (50 familiar words)	2. Familiar Word Reading (10 multiple choice items with 5 answer options each)
Letter-Sound Correspondence and Word Recognition	-	3. Word Dictation (8 words) 4. Sentence Dictation (2 short sentences)
Fluency	5. Oral Reading Fluency (ORF) (a 61-word passage)	-
Comprehension	6. Oral Reading Comprehension (5 oral, open-answer questions based on the ORF passage)	5. Silent Reading Comprehension (10 multiple choice questions with 4 answer options each, based on a 108-word passage)

1.1.1　Letter Identification

In the traditional EGRA, the Letter Sound Identification task measures the child's knowledge of the correspondences between written letters and the sounds of spoken language that they represent. In addition to the standard Letter Identification task that most EGRAs include, with 100 letters (both consonants and vowels) presented with frequencies similar to their normal occurrence in the orthography, the 2019 Khmer traditional EGRA also tested all 33 Khmer consonants and 23 Khmer vowel forms in separate tasks. In all three traditional EGRA tasks, the child is presented the letters in a grid and asked to read them aloud as quickly as they can. The task is timed, and the child's score is the number of letters read correctly (accuracy) in 1 minute (fluency).

For the Khmer CB-EGRA, the same letter-sound knowledge construct is tested through 15 multiple choice items (10 consonants and 5 vowels). The assessor reads the target letter sound aloud and each child selects which of the answer options matches the sound (from a stimulus sheet that contains 5 letters as response options for each item). This task is scored on accuracy, i.e., percentage correct over the total. Since it is untimed, it does not include any measure of reading rate or fluency.

In the design of the Khmer CB-EGRA task, the developers were conscious of incorporating letter forms representing diverse phonological aspects, including the place and manner of articulation, voicing, and the so-called "a-series" versus "o-series" for consonants (see Table 2), as well as vowel height and frontedness

for vowels. They also strategically selected the distractor (i.e., incorrect) answer options to share either phonological and/or graphical similarities to the target letter, e.g., ៦ and h , or (and 3 .

In other words, the distractors are letters that children with less mastery of their letters might reasonably confuse with the target letter but that are nonetheless clearly wrong (never pronounced like the target in any context).

Table 2.   Phonological Characteristics of Khmer Consonants

Manner of Articulation		Place of Articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Nasal	A-series		. (nâ)			
	O-series	] (mô)	ı (nô)	$ (nhô)	3 (ngô)	
Plosive	Voiceless un-aspirated — a-series		((tâ)	8 (châ)	3 (kâ)	Ś ('â)
	Voiceless un-aspirated — o-series	i (pô)	8 (tô)	7 (chô)	ffi (kô)	
	Voiceless aspirated — a-series	((pʰâ)	8 , 3 (tʰâ)	2 (chʰâ)	h (kʰâ)	
	Voiceless aspirated — o-series	- (pʰô)	1 , ៦ (tʰô)	1 (chʰô)	fl (kʰô)	
	Voiced — a-series	6 (bâ)	3 (dâ)			
	Voiced — o-series		៦ (dô)			
Fricative	a-series		Ĩ (sâ)			Ň (hâ)
Liquid	**Rhotic** — o-series		Σ (rô)			
	Lateral — a-series		Ō (lâ)			
	Lateral — o-series		Ă (lô)			
Approximant	o-series	Č (vô)		≥ (yô)		

1.1.2 Familiar Words

For the Familiar Word Reading task, on the traditional EGRA the child is presented with 50 familiar words in a grid and asked to read them aloud as quickly as they can. The task is timed, and the child's score is the number of words read correctly (accuracy) in 1 minute (fluency).

On the Khmer CB-EGRA, the construct of word recognition is tested through 10 multiple choice items. As in the Letter Identification task, the child is presented with five response options per item. The assessor reads one word aloud and the child selects the graphical form of the word that they heard. This task is scored for accuracy as the percentage correct over the total. Again, the distractor options are all real words with phonological and/or graphical similarities to the correct answer.

1.1.3 Word and Sentence Dictation

As decoding and encoding are two sides of the same coin, as both rely on a shared knowledge base of letter-sound correspondence, the Khmer CB-EGRA uses dictation to further test the student's mastery of letter-sound correspondence via encoding. The dictation tasks are the only productive tasks on the CB-EGRA, where the multiple choice format is not used. Since dictation is a regular feature of Khmer lessons in Cambodia, this is a task that students are expected to be familiar with.

In the Word Dictation task, the assessor reads aloud eight words, one at a time, and the child writes the word that they hear.

In the Sentence Dictation task, the assessor reads aloud two sentences, one at a time, and the child writes each sentence. In both tasks, the answers are scored giving partial credit for each correct letter and position within the word, as well as at the word level.

1.1.4 Reading Comprehension

For fluency and comprehension, the Khmer traditional EGRA includes a short passage (around 60 words long) that the child reads aloud. This part of the task is scored as the number of words read correctly (accuracy) per minute (fluency). The assessor then asks the child five oral questions based on the passage, and the child answers orally. Any child not able to read the entire text in the time allotted is asked only the questions that cover the portion of the text that they were able to read. Comprehension is scored on accuracy as the percentage correct overall.

It is not feasible to test ORF in group format, but the Khmer CB-EGRA contains a silent reading passage for assessing reading comprehension. Since the passage remains in front of the child during the whole assessment, thereby mitigating the effects of the constraints on short-term memory, the silent reading passage can be longer, which also allows for more questions (and greater variability in scores). The Khmer CB-EGRA silent reading passage was 108 words long (targeted for Grade 3 learners), followed by 10 multiple choice questions with 4 response options for each item. It is scored on accuracy as the percentage correct overall.

1.2 CB-EGRA Adaptation Workshop

A 5-day CB-EGRA adaptation workshop was held from September 19–23, 2022, at the Tonle Basac II venue in Phnom Penh, with logistical and operational support from Real-Time Evaluation (RTE). The workshop was led by two RTI experts (Karon Harden and Chhorn Chhayyuth), while the 10 participants included four early grade reading and language experts with prior EGRA experience; an expert primary school teacher; and five MoEYS representatives, covering the following departments: the Primary Education Department (PED), Education Quality Assurance Department (EQAD), Department of Curriculum Development (DCD) and the Teacher Training Department (TTD).

An overview of the workshop agenda is displayed in Table 3.

Table 3.   **Agenda for the 2022 Khmer CB-EGRA Adaptation Workshop**

Day	Key Activities
Day 1	- Orientation to the activity and workshop - Orientation to the CB-EGRA in contrast to the traditional EGRA - Review of the protocol and development of the CB-EGRA Letter Identification Task
Day 2	- Review of the protocol and development of the CB-EGRA: - Familiar Word Reading Task - Dictation Tasks
Day 3	- Review of protocol and development of the CB-EGRA Silent Reading Comprehension Task - Finalization of instrument and assessor protocol in preparation for the field test
Day 4	- Field test and debrief - Finalization of instrument
Day 5	Finalization of sample and logistics for the pilot data collection

Participants spent the majority of the first 3 days reviewing the parameters of each task type and the considerations for item development, followed by developing the CB-EGRA subtasks accordingly. The CB-EGRA developed under this activity was created for students in Grade 3.

On Day 4, the adaptation team visited a local school in Phnom Penh and field-tested the CB-EGRA instrument with approximately 40 Grade 3 students. In addition to administering the assessment, the team members also interviewed students after the test to gauge their impressions and how well they had understood what to do for each task. This exercise confirmed the overall suitability of the assessment length, administration time, and administration protocol, as well as the comprehensibility of the instructions. Minor adjustments were made to the assessor protocol in order to add clarity, but no adjustments were deemed necessary to the assessment itself.

Upon completion of the workshop, all tools were rendered in Tangerine® for the training and data collection.

2. Training and Data Collection

2.1 CB-EGRA and EGRA Training

Immediately following the adaptation workshop, a 5-day training of data collectors was held at the Tonle Basac II Restaurant in Phnom Penh from September 26–30, 2022. Four full days of training were followed by a half-day of field preparations for logistical arrangements.

The training was attended by 10 assessors, 2 supervisors, and 2 facilitators from 2 organizations. Five MoEYS representatives also joined from PED, EQAD, DCD, and TTD. The purpose of the training was to orient assessors and other stakeholders to Tangerine, as well as the administration and scoring of the CB-EGRA instrument, alongside a traditional EGRA instrument.

The training included two assessor accuracy measures (AAMs) for both the EGRA and CB-EGRA, in order to ensure that assessors were suitably trained for reliable data collection. For the second AAM (on the last day of training), average percent agreement across all assessors was greater than 95% for both the EGRA and CB-EGRA. Additionally, each assessor had at least 90% agreement with the gold standard for both assessments. Therefore, all assessors were retained for the data collection, due to this strong evidence of their reliability.

2.2 Sampling and Data Collection

2.2.1 Sample

Purposive sampling was used for school selection for the data collection activity. Overall, 10 schools were selected from 10 separate districts in Kampot and Kep Provinces (8 schools, one from each of 8 districts in Kampot; 2 schools, one from each of 2 districts in Kep). This sample consisted of 4 urban schools and 6 rural schools, in order to ensure a level of variation.

Within each school, assessors randomly sampled 40 Grade 3 students to participate in the data collection activity (20 boys and 20 girls per school). The final intended sample is displayed in Table 4.

Table 4.   CB-EGRA Intended Data Collection Sample Size

Province	Districts	Number of Schools	Number of Students
Kampot	Angkor Chey Kampong Trach Dangtung Banteay Meas Kompot Chum Kiri Chhouk Teuk Chhou	8	320 (40 Grade 3 students per school)
Kep	Kep Damnak Chang-Oeur	2	80 (40 Grade 3 students per school)
TOTAL		**10 schools**	**400 students**

After data cleaning and processing, the final sample consisted of 376 Grade 3 students (182 boys; 194 girls) with complete (linked) data on both the EGRA and CB-EGRA.

2.2.2 Data Collection

Data collection occurred from October 3–7, 2022, with 10 assessors split into two teams. Each student received both the individually administered EGRA (Letter Identification, Familiar Word Reading, Oral Reading Passage, and Reading Comprehension) and the group-administered CB-EGRA (Letter Identification, Familiar Word Reading, Word Dictation, Sentence Dictation, and Silent Reading Comprehension)—and they were provided with a linking ID in order to ensure that their results on the two assessments could be matched and analyzed accordingly.

CB-EGRA administration in classroom
Photo: RTE

Each data collection team (overseen by a supervisor) administered assessments to 1 primary school each day (i.e., 2 schools per day, with all 10 schools being completed within 1 week). All data entry and uploading were required to be completed by the end of each workday.

RTE also scheduled conference calls every day after school visits with all the field teams (assessors and supervisors) in all provinces to discuss the challenges encountered and identify the best solutions so that these challenges would not be met at the next school. In addition, each team had its own individualized team level meetings in each province every evening at 5 PM to discuss specific situations and challenges and prepare the logistics and transportation arrangements for the next school. The data collected by assessors was reviewed by the RTI headquarters team every night; results were shared back with the team leader every evening. After receiving this feedback, the team leader briefed assessors and supervisors to improve planned activities at the next school and to address any data concerns.

2.2.3   Administration and Scoring

All EGRA data were collected directly on tablets (using Tangerine software). Scoring procedures for EGRA are described in Section 1.1 (above).

CB-EGRA instruments were administered via paper (to 20 students at one time). Assessors stood at the front of the class, with an assessor protocol, which provided them with scripted guidance on how to administer the assessment. Each subtask has slightly different administration procedures (see **Annex A** for details).

Students were seated (one to a desk) in the classroom and provided with one of two stimulus sheets (Form A or Form B). These forms both contain the same items and response options, with the only difference being that response options are in a different order for multiple choice items. This decision was made in order to reduce the likelihood of students obtaining correct answers by looking at their neighbor's test.

After administration of the CB-EGRA, all student forms were collected and scored, and results were entered into Tangerine by assessors. The Letter Identification, Familiar Word, and Silent Reading Comprehension subtasks were simply scored by marking each item as correct or incorrect. For Dictation, scoring was done at both the word level and for partial credit (i.e., each letter, including diacritics). While this scoring procedure leads to more nuanced results for teachers, the results presented throughout this report are based on the whole word scoring approach.

3. Results

In this section, we first present results from the CB-EGRA independently, followed by an examination of their relationship to EGRA results. Overall, the reliability of both assessments was strong, with a test-level Cronbach's alpha (e.g., measure of internal consistency) of 0.94 for both the CB-EGRA and the EGRA (see **Annex B** for details).

3.1 CB-EGRA Subtask-Level Results

There was considerable variation in the mean scores across the CB-EGRA subtasks, as shown in Table 5. As expected, Grade 3 students performed well on both the Letter Identification (85% correct) and Familiar Word subtasks (71.6% correct), while they struggled more with the remaining tasks (less than 50% correct, on average, for Dictation and Reading Comprehension subtasks). Note that throughout this section, scores are displayed separately for the first and second sentences in the Sentence Dictation task.

Table 5.   CB-EGRA Subtask Performance

Subtask	Average Percent Correct	Mean Items Correct	Minimum Items Correct	Maximum Items Correct
Letter Identification (15 items)	85.0%	12.7	1	15
Familiar Words (10 items)	71.6%	7.2	0	10
Word Dictation (8 items)	42.2%	3.4	0	8
Sentence Dictation 1 (5 items)	49.3%	2.5	0	5
Sentence Dictation 2 (5 items)	40.3%	2.0	0	5
Silent Reading Comprehension	44.4%	4.4	0	10

As displayed in Figure 1, nearly 50% of students scored the maximum on the Letter Identification and Familiar Word tasks, providing heavily skewed distributions. This is not necessarily problematic; it is simply a sign that these skills are typically mastered by Grade 3. Interestingly, while the Word Dictation task had a relatively even spread of scores across the distribution, the two Sentence Dictation tasks had relatively high proportions of students scoring zero, as well as those correctly writing the whole sentence. The Silent Reading Comprehension subtask had an even distribution of scores (with a slightly inverted curve— meaning that students were more likely to score at the ends of the distributions, rather than the middle).

Figure 1.   CB-EGRA Subtask Score Distributions
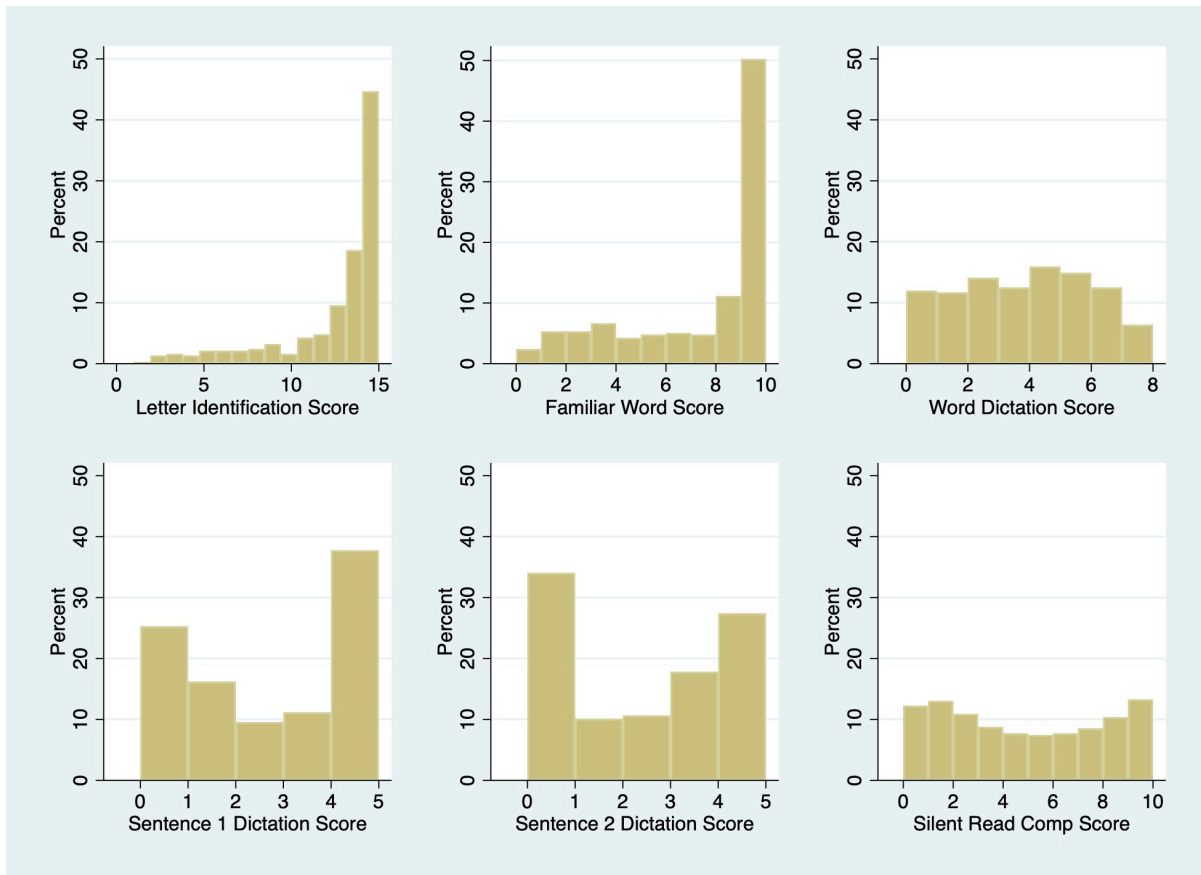
3.2 CB-EGRA Item-Level Results

This section focuses on an exploration of the distribution of scores for each item on each subtask.

As shown in Figure 2a, students performed well on all 15 of the items on the Letter Identification task (with at least 69% correct, on average, for each item). A few of the items proved more difficult than the others (i.e., letters 5, 9, and 13), but this is expected for less common items. That being said, it is advisable to review these three items and their distractors on the student stimulus sheet, in order to ensure that there are no issues that may be particularly confusing to students (see Figure 2b for letters as they appeared on the student stimulus sheet, with correct items highlighted in red).

Figure 2a. **CB-EGRA Item Scores (Letter Identification)**

CB-EGRA Letter Identification
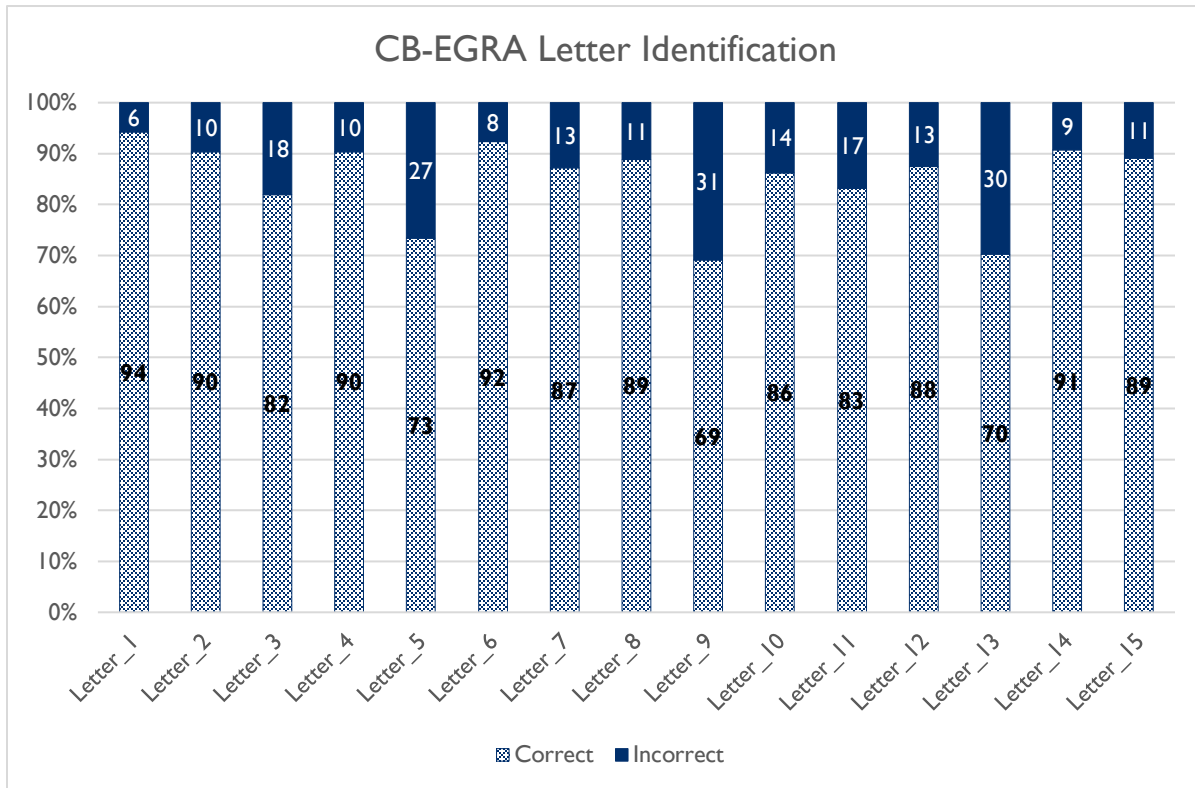
Figure 2b. **CB-EGRA Letter Identification Sheet (Correct Items in Red)**

Although students performed well on the Familiar Word Reading subtask overall, there is still strong variation in the item-level scores (with the percentage of correct responses ranging from 58% to 82%), as shown in Figure 3a (see Figure 3b for words as they appeared on the student stimulus sheet, with correct items highlighted in red). Greater variation would be expected for students in Grades 1 and 2.

Figure 3a: CB-EGRA Item Scores (Familiar Words)
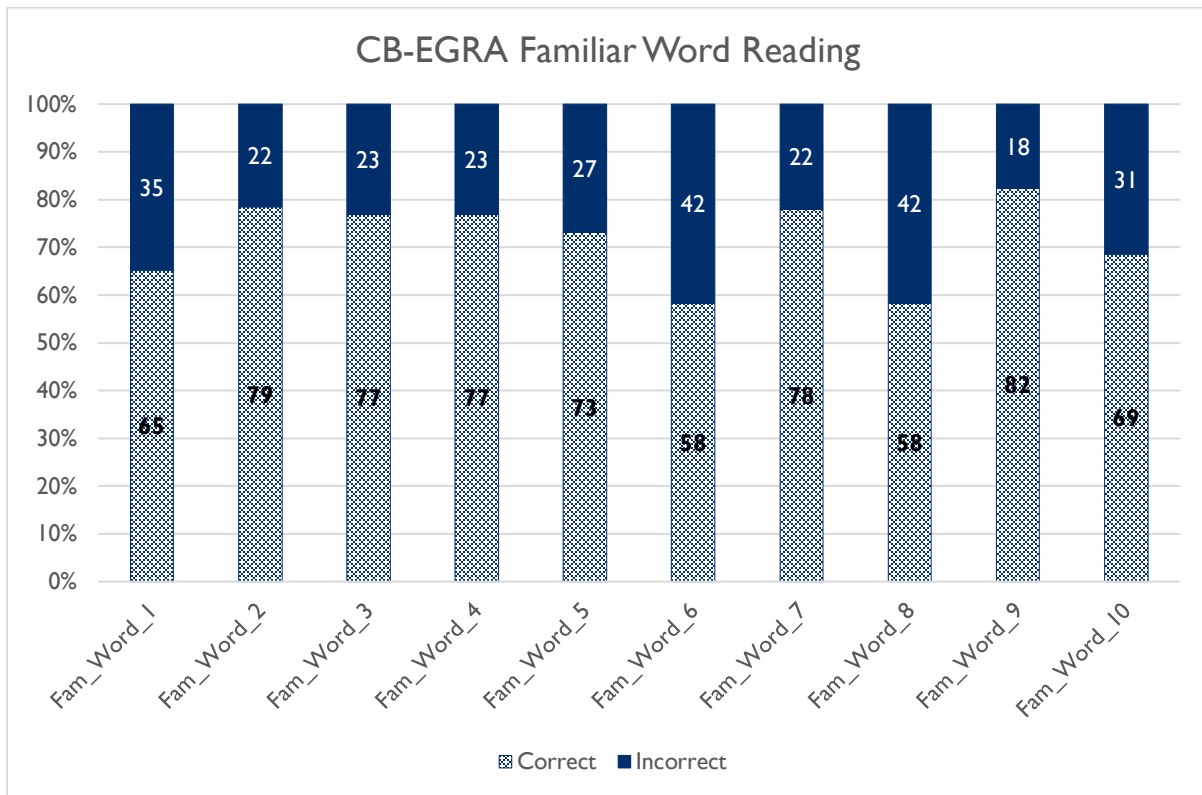
Figure 3b.   CB-EGRA Familiar Word Sheet (Correct Items in Red)

1.	កោះ	នេះ	ចៅ	ឡេះ	នោះ
2.	សសរ	សរសេរ	សរសើរ	សំណួរ	សំណើ
3.	កុក	ពុជ	ឬក	គុណ	ពុក
4.	បំពង	កំពង់	បំពង់	កំបាំង	កំពប់
5.	ខ្លះ	ផ្នុះ	ខ្វះ	ផ្ទុះ	ជ្រេះ
6.	ម្នាស់	ខ្វាស់	ម្ហាស់	ម្នាក់	ម្ហាក់
7.	ក្រជាស	គ្រូសារ	ក្រសារ	ក្រមា	ប្រកាស
8.	កព្រោង	កព្រើល	ចិញ្ញាំ	បញ្ជ្រាប	កព្រោង
9.	កៅស៊ូ	គស៊ូ	សាប៊ូ	តៅហ៊ី	គរ៉ា
10.	ឱសថ	ឱកាស	អាកាស	ឱ៉ា	ឱវាទ

The Word Dictation task showed some worrying variation, with two items providing more than 90% incorrect responses (words 6 and 7; see Figure 4). These words should be reviewed carefully in order to ensure that they are appropriate at the lower primary level and that there is no confusion around their scoring (see **Annex A** for Assessor Protocol with included words). Otherwise, the remaining items show strong variability, as intended by this task.

Figure 4.   CB-EGRA Item Scores (Word Dictation)
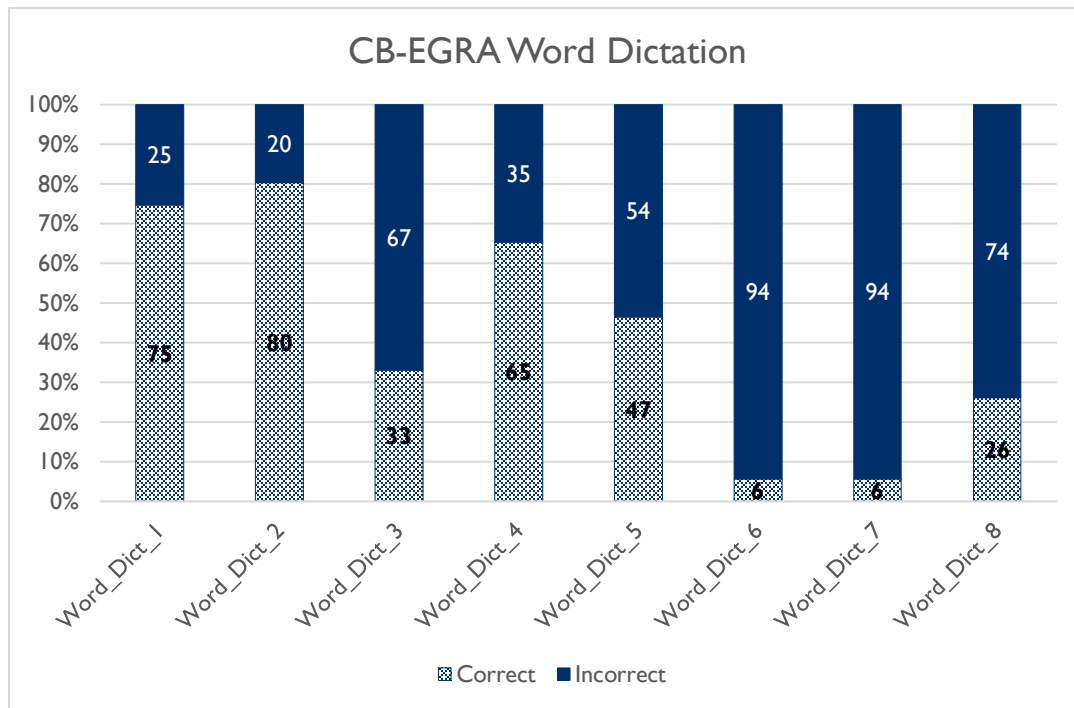
The first Sentence Dictation task provides good variation across items, as shown in Figure 5. Item scores range from 38% correct to 71% correct (i.e., the first five bars), with an average of 27% of students correctly writing each word in the sentence (as shown in the final bar). For sentence 2, however, there is concern about the second item, which only 10% of students wrote correctly. This also reduced the percentage of students who were able to correctly write the whole sentence (7%) and should therefore be carefully reviewed (see **Annex A** for Assessor Protocol with sentences used).

Figure 5.   CB-EGRA Item Scores (Sentence Dictation 1 and 2)
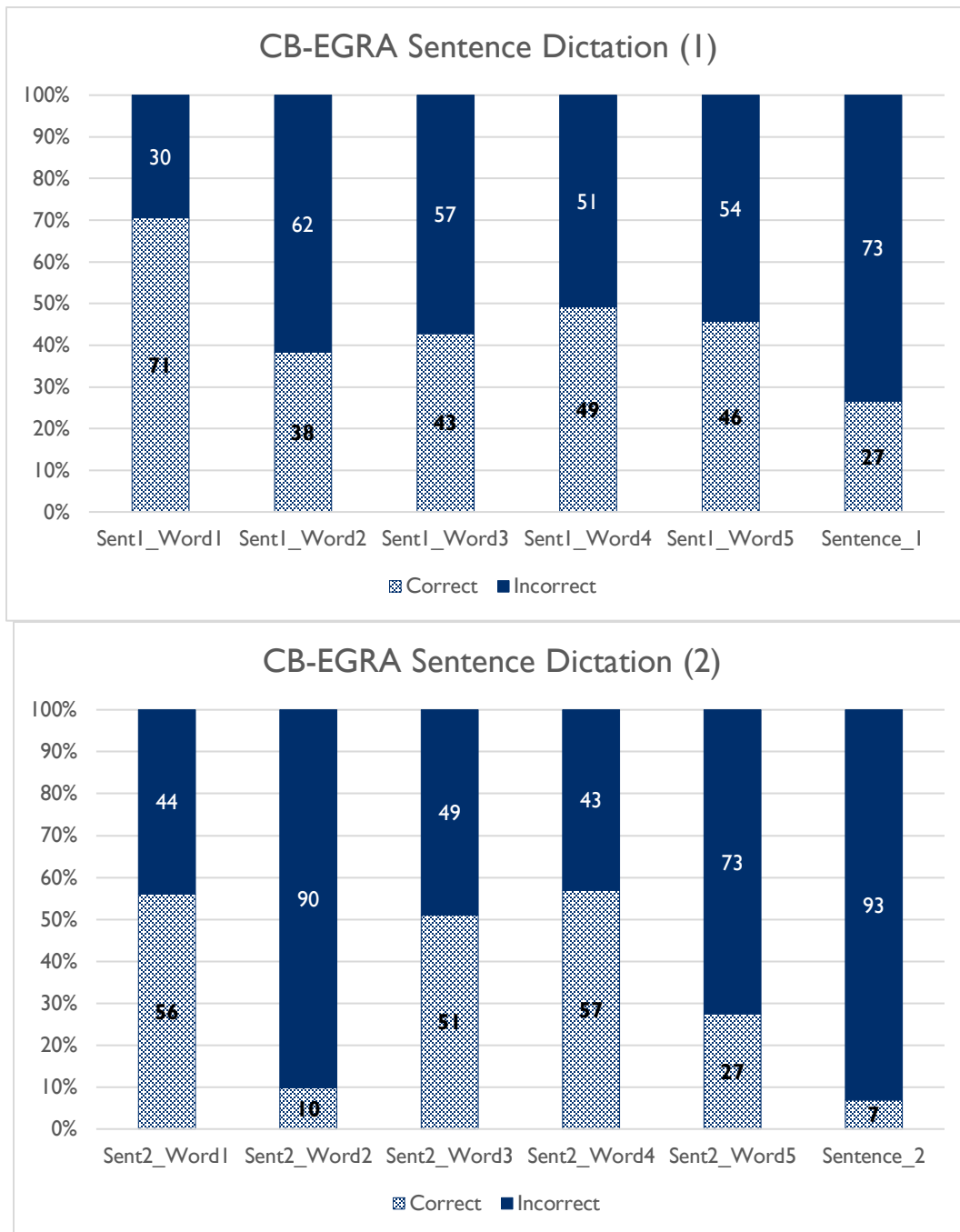
On average, students scored approximately 44% on the Silent Reading Comprehension task, as shown in Figure 6. This was comprised of a relatively even distribution of item-level scores around the mean, ranging from 29% correct on item 9 to 59% correct on item 3. As expected, the two items with the lowest proportions of correct responses (item 9 and item 10), were the two inferential questions for the subtask (i.e., the items that could not be answered directly from information explicitly stated in the text).

Figure 6: **CB-EGRA Item Scores (Silent Reading Comprehension)**
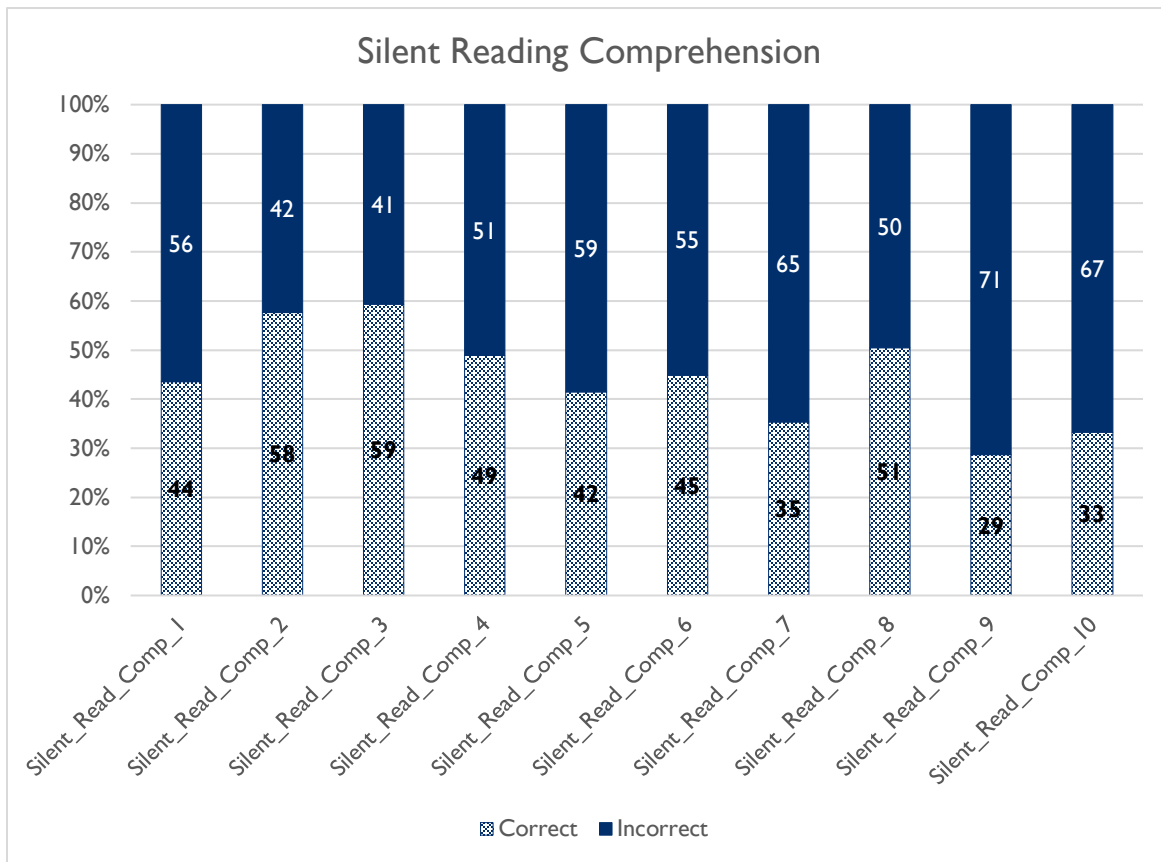
3.3 Relationship between CB-EGRA and EGRA

Since the CB-EGRA was designed as a group-administered alternative to the traditional EGRA, it is important to examine the relationship between the two assessments. One of the simplest ways to explore this relationship is through correlations across subtasks. If similar subtasks on each assessment are strongly correlated with one another, that would provide evidence that the scores are related.

Overall, there are strong correlations between the CB-EGRA and EGRA subtasks, as shown in Table 6. Ultimately, there are only 7 pairwise correlations below the 0.70 threshold (6 of which are related to the Letter Identification task on either the EGRA or CB-EGRA). The strongest correlations are between the CB-EGRA Familiar Word and Dictation subtasks, and the EGRA Familiar Word and Oral Reading subtasks (all of which are 0.85 or higher). Additionally, the strongest predictors of ORF come from the CB-EGRA Dictation tasks. (See **Annex B** for additional correlations.)

Table 6.   Pairwise Correlations for CB-EGRA and EGRA Subtasks

	letter (cb)	fam_word (cb)	word_dict (cb)	sent1 (cb)	sent2 (cb)	silent_read (cb)
letter	0.74	0.81	0.78	0.79	0.76	0.69
fam_word	0.70	0.85	0.86	0.88	0.86	0.78
oral_read	0.75	0.88	0.85	0.87	0.86	0.74
orf	0.58	0.74	0.84	0.85	0.82	0.79
read_comp	0.66	0.78	0.79	0.79	0.78	0.70
letter (cb)	1	0.82	0.71	0.66	0.64	0.52
fam_word (cb)	-	1	0.80	0.79	0.78	0.65
word_dict (cb)	-	-	1	0.83	0.80	0.73
sent1 (cb)	-	-	-	1	0.84	0.75
sent2 (cb)	-	-	-	-	1	0.75
silent_read (cb)	-	-	-	-	-	1

In addition to correlations, we examined the average (mean) scores across matched subtasks: Letter Identification, Familiar Words, and Reading Comprehension. Results are shown in Table 7. The overall average score on EGRA Letter Identification was 27.7% (i.e., an average of 27.7 letters out of the grid of 100 letters in 1 minute). As a more appropriate comparison for the CB-EGRA, students were able to correctly identify 69.6% of the letters they attempted on the EGRA Letter Identification subtask (i.e., the letters they attempted in 1 minute, as opposed to their score out of the 100 total items). The CB-EGRA Letter Identification score was higher (85.0%) than the traditional EGRA scores, likely due to the multiple choice nature of the subtask (which provides potential options and allows for the potential to guess the correct answer without actually knowing the letter). Similar results were found for the Familiar Word subtask, with students averaging higher scores on CB-EGRA (71.6%) than on the attempted items on the EGRA task (59.4%).

Table 7:   **Average (Mean) Scores for Matched CB-EGRA and EGRA Subtasks**

Subtask	Mean Score
EGRA Letter Identification (% correct out of 100 in 1 minute)	27.7
EGRA Letter Identification (% correct of attempted)	69.6
CB-EGRA Letter Identification	**85.0**
EGRA Familiar Words (% correct out of 50 in 1 minute)	47.9
EGRA Familiar Words (% correct of attempted)	59.4
CB-EGRA Familiar Words	**71.6**
EGRA Reading Comprehension (% correct out of passage in 1 minute)	44.4
EGRA Reading Comprehension (% correct of attempted)	51.9
CB-EGRA Silent Reading Comprehension	**44.4**
EGRA Reading Comprehension (>=80% correct)	32.4
CB-EGRA Silent Reading Comprehension (>=80% correct)	**23.7**
CB-EGRA Silent Reading Comprehension (>=70% correct)	**32.2**

Interestingly, the average Reading Comprehension scores were identical across both the EGRA and CB-EGRA (44.4% correct), while the percent correct of attempted on the EGRA was slightly higher (51.9%). This provides evidence that the CB-EGRA Reading Comprehension task was slightly harder than the EGRA task, likely due to the fact that it was 10 questions based on a longer passage.

Finally, scoring at least 80% correct on the EGRA Reading Comprehension task is a commonly used indicator for proficiency in reading comprehension. As shown in Table 7, 32.4% of the sample met this threshold. While only 23.7% of students reached the 80% mark on the CB-EGRA comprehension task, 32.2% reached a 70% threshold.

However, there was only a moderate correlation between the two reading comprehension benchmarks (with many students meeting one but not the other). Therefore, while an equivalent proportion of students met the 70% reading comprehension benchmark on CB-EGRA and an 80% benchmark on EGRA, the two measures are not exact proxies for one another at the individual level. So, aggregate level estimates of EGRA reading comprehension benchmark performance can be obtained from the CB-EGRA but the individual scores for students differ due to the changes in administration type (and length of passages).

3.4 Predicting ORF Scores from CB-EGRA

A secondary objective of this study was to develop a model by which ORF scores can be predicted by CB-EGRA performance. The goal is for the statistical equating model developed through this process to be simple enough to be understood by local-level education stakeholders for extrapolating students' ORF and comprehension skills based on CB-EGRA scores in the future.

In general, assessment linking is a process in which scores on one assessment are linked to a second outcome scale, such that the second assessment does not have to be administered every time you require estimated results. This linking is achieved by using a statistical equating process that allows for predicting what a student's score would be on the second test based on their score on the first, using data from

students who have been assessed on both tests. The assessment linking approach is widely used and accepted internationally.

Because the CB-EGRA does not include an ORF measure, but some stakeholders are highly interested in oral reading fluency as a high-level indicator, we used assessment linking to identify a statistical model that would relate CB-EGRA scores to the ORF scores that are typically derived from the EGRA. In order to do this, we first created a composite score to calculate the overall CB-EGRA average percentage score. Then, to establish the relationship between the overall CB-EGRA average percentage score and ORF, we trialed common approaches to assessment linking to maximize statistical precision and reliability and determine the best model fit for our data. This iterative process looked specifically at the variance explained between the two assessments.

The model was based on using a composite CB-EGRA score to predict the ORF score. All variations of the composite were tested but the final composite consists of three subtasks: Word Dictation, Sentence Dictation, and Silent Reading. This composite variable has a possible score range of 0 to 28 (i.e., 8 from Word Dictation, 10 from Sentence Dictation, and 10 from Silent Reading) and uses unweighted results for simplicity (i.e., all subtasks are evenly weighted for the composite score). The reduced model provides a more precise model fit than more comprehensive composite scores and will make it easier for stakeholders, since they can produce equated scores based on a small number of subtasks (thus reducing administration and scoring time, if necessary). If a comprehensive model is of interest, it would be advisable to weight the subtask scores (e.g., providing higher weights to more important or impactful subtasks).

Ultimately, we concluded that the best model for equating CB-EGRA and reading fluency was a simple linear regression model, with the CB-EGRA score predicting ORF. The output results from this prediction model are displayed in Table 8.

Table 8.   Predicting ORF from CB-EGRA Composite Score—Regression Output

Constant	$a = -10.70$***
x = Average CB-EGRA score	$b = 3.61$***
R	0.90
R^2	80.8%
Adjusted R^2	80.8%
No. of observations	376

***$p < .01$.

The overall CB-EGRA percentage score was the linear function of ORF with a very strong correlation coefficient ($r = 0.90$). Furthermore, as shown in the output above, the CB-EGRA composite score was able to account for 80.8% of the variation in ORF scores. Thus, we feel that this model can be used for future predictions (with the strongest justification for Grade 3). The model can be expressed as:

Average Grade 3 predicted ORF = (3.608 × CB_EGRA composite mean score) - 10.697

Using this equation in our current dataset, we confirm that the predicted ORF score from the CB-EGRA composite score is 33.7 correct words per minute (cwpm) (which is identical to the actual mean score in the data, by design).

3.5 Categorizing Students by CB-EGRA Scores

While the equating procedure above is useful to estimating average reading fluency scores across students, it is less helpful for teachers and/or school-level support staff. With that in mind, we examined the possibility of categorizing students based on their CB-EGRA scores in relation to EGRA outcomes (particularly ORF and reading comprehension).

The goal of this component was to create profiles of students that can be used to better understand their learning levels and instructional needs. We opted for a four-category profile, with categorizations based on the same composite CB-EGRA score used for equating. Various cut points were explored to determine which thresholds would most appropriately categorize students into justifiable profiles with limited overlap in scores across profiles. The following cut points and category names were used: score less than or equal to 7 is "Low"; score between 8 and 14 (inclusive) is "Emerging"; score between 15 and 20 (inclusive) is "Proficient"; and a score of greater than 20 is "Advanced".

Beginning with ORF, we found that 94 of the 99 non-readers in the sample (i.e., students who were unable to read a single word correctly in the reading passage) were in the Low category, while the remaining five were Emerging. As shown in Table 9, Low category students averaged less than 5 cwpm (4.1), while Emerging students averaged just over 20 (22.0), Proficient students averaged 50.1, and Advanced students averaged 77.7. While these categorizations are not perfect and there is some overlap in extreme values across categories, there is no overlap in the 25th to 75th percentiles for any consecutive categories. This provides evidence that they are sufficiently unique and allows us to categorize students by their ORF scores (based on CB-EGRA scores).

Table 9:   CB-EGRA Categories and ORF Scores

Category	Mean ORF	25th Percentile ORF	75th Percentile ORF
Low	4.1	0	7.3
Emerging	22.0	11.7	31.1
Proficient	50.1	36.3	64.6
Advanced	77.7	65.5	89.3

Examining the relationship between our CB-EGRA categories and other EGRA scores provides additional details on the value of these profiles. While the Low category students had the lowest scores across all EGRA subtasks, there is variation in the magnitude of differences in EGRA scores across the categories (see Table 10). These relationships are more clearly seen in Figure 7 and Figure 8.

Table 10. **CB-EGRA Categories and EGRA Scores**

EGRA Subtask Score

CB-EGRA Category	Letter Identification (Percent Correct of Attempted)	Correct Letters per Minute	Familiar Words (Percent Correct of Attempted)	Correct Words per Minute	Oral Reading (Percent Correct of Attempted)	Oral Reading Fluency	Reading Comprehension (Percent Correct)	
Low	44.0	13.6	22.5	5.8	15.0	4.1	12.7	
Emerging	76.5	27.8	66.0	22.3	59.6	22.0	43.1	
Proficient	89.8	38.3	87.5	38.2	88.9	50.1	65.9	
Advanced	91.8	42.9	94.3	54.1	97.0	77.7	81.1	

It is clear from Figure 7 that students in the Low category were significantly below their peers on the following four scores: letters (percent correct of attempted), letter (correct letters per minute), familiar words (percent correct of attempted), and oral reading (percent correct of attempted). In other words, students in the Low category require additional support in letter tasks (accuracy and fluency), as well as foundational reading tasks (i.e., independent and connected text word reading for accuracy). Students in the Emerging category would also benefit from these additional supports, but they are much closer to their peers in letter-related tasks and would therefore benefit most from additional support in word reading. Across these four EGRA scores, there is little to no difference in performance for students in the Proficient and Advanced categories.

Figure 7. **CB-EGRA Categories and Lower-Order EGRA Scores**
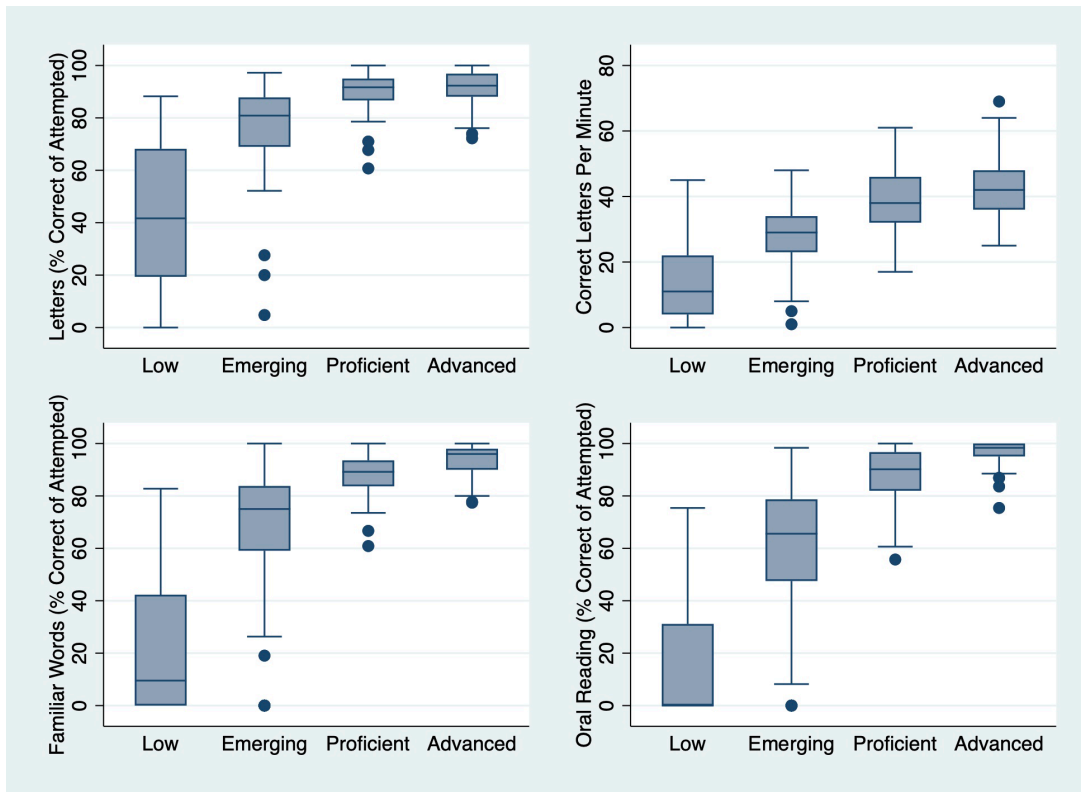
Figure 8 shows that higher-order skills (i.e., reading fluency and reading comprehension) distinguish learners across all categories. Therefore, these skills should be supported once foundational learning is achieved—which is the case for learners in the Proficient category.

Figure 8.   CB-EGRA Categories and Higher-Order EGRA Scores
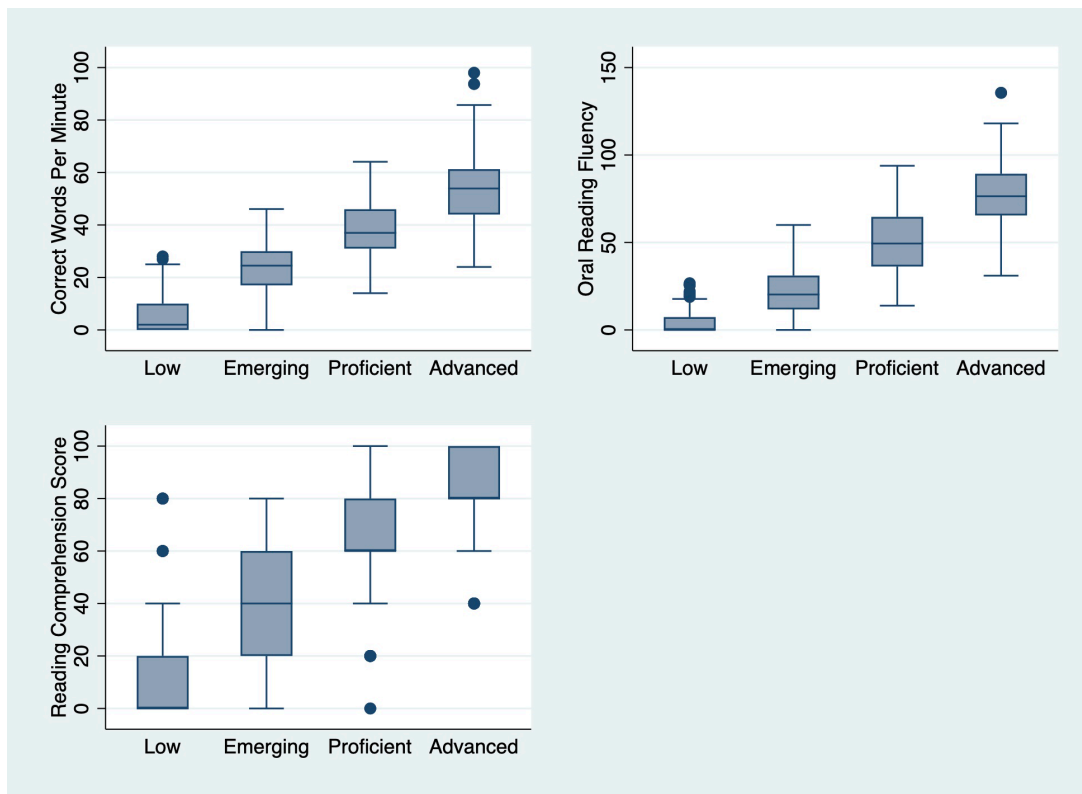
4. CONCLUSIONS AND RECOMMENDATIONS

The CB-EGRA instrument developed and piloted in Cambodia shows strong evidence of reliability and validity, based on its high levels of internal consistency, as well as its strong correlations with previously validated EGRA subtasks. Although these correlations are strong, there are still some important differences between the two assessments.

For example, while mean scores on the CB-EGRA Silent Reading Comprehension and EGRA Reading Comprehension tasks were nearly identical, there were differences in the proportions of students meeting benchmark levels (e.g., reading with at least 80% comprehension). This is likely the result of differences in administration procedures and subtask length. However, it should be noted that the CB-EGRA subtask is arguably a more direct and reliable measure of reading comprehension, since it does not rely on reading fluency or memory recall (since the passage is kept in front of the child while they are answering the questions) and it includes 10 items, which allows for greater variation in scores.

Furthermore, although the CB-EGRA does not include any fluency measures, these data show that scores can reliably predict ORF scores. Therefore, the CB-EGRA can be used as a group-administered alternative to the individually administered EGRA, while still providing estimates of oral reading performance at the population level.

On an individual level, CB-EGRA scores can be used to identify the current learning levels of children, as well as their instructional needs (as related to EGRA subtasks). Therefore, this tool can be used by teachers or other school-level support staff to more quickly assess student reading levels, without the need for one-on-one administration, tablets, timed subtasks, or complex scoring and analyses.

Prior to rollout of the CB-EGRA into classrooms or as a monitoring tool, there are a few recommended next steps:

- Any potentially problematic items (as identified in the Results section of this report) should be carefully reviewed and considered for revision, if necessary.

- It would be useful to create leveled versions of this assessment for any grade in which it will be applied. The current version of the tool is targeted for Grade 3, but it may be of interest to create versions for additional grades.

- The CB-EGRA tool should be piloted with a sample of teachers in order to better understand the possibilities for administration of the assessment in classrooms, as well as teachers' perceptions of the value of the CB-EGRA tool. A similar pilot is also recommended for school supervisors and coaches.

Ultimately, this study provides promising evidence for the use of a short, simple classroom-based assessment that is tied to the EGRA in Cambodia. The results are exciting and could have significant implications for assessment in the country.

ANNEX A. CB-EGRA ASSESSOR PROTOCOL

Classroom-Based EGRA

Khmer

ការវាយតម្លៃអំណានថ្នាក់ដំបូង(អ៊ីក្រា)សម្រាប់ថ្នាក់រៀន

Assessor Protocol

សេចក្ដីណែនាំសម្រាប់អ្នកវាយតម្លៃ

CB-EGRA General Instructions
សេចក្ដីណែនាំ
អ្នករាយតម្លៃ អំណានថ្នាក់ដំបូងសម្រាប់ថ្នាក់រៀន (CB-EGRA)

1. Prior to selecting students, ensure that there are at least XX desks/tables and chairs in the classroom.

1. មុនពេលជ្រើសរើសសិស្ស ត្រូវប្រាកដថាមានតុ និងកៅអីគ្រប់គ្រាន់សម្រាប់សិស្សគ្រប់គ្នាអង្គុយ។

2. Follow the sampling protocol to randomly select XX students to participate in the group assessment.

2. អនុវត្តតាមសេចក្ដីណែនាំ ក្នុងការជ្រើសរើសសំណាកសិស្ស XX ដោយចៃដន្យ ដើម្បីធ្វើតេស្ត សិស្សជាក្រុម។

3. Instruct students to sit as spread out across the classroom as possible, ensuring that each student is sitting at his/her own desk. However, also make sure that all students will be able to clearly hear your instructions from the front of the classroom.

3. ណែនាំសិស្សឱ្យចូលអង្គុយតាមតុរៀងៗខ្លួន តែត្រូវប្រាកដថា សិស្សទាំងអស់នឹងអាចស្ដាប់ការ ណែនាំរបស់អ្នករាយតម្លៃបានច្បាស់។

4. Ask students to clear their desks.

4. សុំឱ្យសិស្សយករបស់របរនៅលើតុចេញ។

5. Ensure that the board is clean and that chalk/markers are available.

5. ត្រូវប្រាកដថាបានលុបក្ដារខៀនស្អាត ហើយមានដីស/ហ្វីកសម្រាប់សរសេរ

6. Write the examples for each section of the assessment (from the Assessor Protocol) on the board prior to beginning the assessment. Ensure that the examples are spread out enough in order to keep the students from getting confused when explaining the examples for each section.

6. អ្នករាយតម្លៃសរសេរឧទាហរណ៍ទាំងអស់សម្រាប់ផ្នែកនីមួយៗឱ្យហើយជាមុននៅលើក្ដារខៀន មុនពេលចាប់ផ្ដើម។ សូមប្រាកដថាឧទាហរណ៍ត្រូវបានពន្យល់ច្បាស់លាស់ និងគ្រប់គ្រាន់ ពេល ធ្វើផ្នែកនីមួយៗ។

7. Distribute pencils and erasers to each of the XX students.

7. ចែកខ្មៅដៃ និងជ័រលុបដល់សិស្សម្នាក់ៗ (ប្រសិនបើមាន)។

8. Distribute the Student Answer Sheets, alternating Form A and Form B so that students sitting next to one another have different forms.

8. ចែកសន្លឹកកិច្ចការសិស្សទម្រង់ ក(A) និង ខ(B) ឆ្លាស់គ្នា ដើម្បីឱ្យសិស្សអង្គុយក្បែរគ្នាមាន សន្លឹកកិច្ចការផ្សេងគ្នា។

10. Use the Assessor Protocol script to explain the activity and obtain student consent.

10. អនុវត្តតាមសេចក្ដីណែនាំដែលរៀបរាប់សម្រាប់អ្នករាយតម្លៃពន្យល់ពីសកម្មភាពតេស្តតាម ផ្នែកនីមួយៗ និងសុំការយល់ព្រមពីសិស្សក្នុងការចូលរួមធ្វើតេស្ត។

11. Put students at ease by explaining the activity as a reading game.

11. ពន្យល់ប្រាប់សិស្សថានេះគ្រាន់តែជាល្បែងអំណានប៉ុណ្ណោះ ដូច្នេះសូមម្នាក់ៗកុំមានការបារម្ភ។

12. Administer all 6 sections of the group assessment:

12. ផ្នែកទាំង ៦ នៃការរាយតម្លៃជាក្រុម

Task	Assessor Protocol page(s)	Student Answer Sheet page(s)

កិច្ចការ	លេខទំព័រក្នុងសេចក្តីណែនាំសម្រាប់ អ្នកវាយតម្លៃ	លេខទំព័រក្នុងសន្លឹកកិច្ចការ សិស្ស
1. Consent and Student Information ការយល់ព្រម និងព័ត៌មានសិស្ស	4	1
2. Letter Identification ការកំណត់ឈ្មោះតួអក្សរ	6-8	2-3
3. Familiar Word Reading ការអានពាក្យដែលស្គាល់ញឹកញាប់	9-10	4
4. Word Dictation ការសរសេរតាមអាន (ពាក្យ)	11-13	5
5. Sentence Dictation ការសរសេរតាមអាន (ឃ្លះ)	14-15	6
6. Silent Reading Comprehension ការអានអត្ថបទស្ងាត់ៗ (ការអានយល់ន័យ)	16-17	7-11

13. Thank the students for participating.

13. អរគុណសិស្សសម្រាប់ការចូលរួមធ្វើតេស្តនេះ។

14. Mark all the Student Answer Sheets and enter the data into Tangerine.

14. ដាក់ពិន្ទុវាល់ចម្លើយសិស្សទាំងអស់ ហើយបញ្ចូលទិន្នន័យទៅក្នុងកម្មវិធី Tangerine។

15. Gather all completed and blank Student Answer Sheets and place them in a clearly labeled envelope.

15. ប្រមូលសន្លឹកកិច្ចការសិស្សដែលបានបញ្ចប់ និងសន្លឹកកិច្ចការសល់ទាំងអស់ ហើយដាក់វានៅ ក្នុងស្រោមសំបុត្រដោយមានសរសេរស្លាកសម្គាល់យ៉ាងច្បាស់។

REMINDER: កំណត់ចំណាំ

🗣 **Signifies instructions that should be read aloud to the class.**

សញ្ញានេះ 🗣 សម្គាល់ថា អ្នកវាយតម្លៃត្រូវអានការណែនាំឱ្យបានឮៗ និងច្បាស់ៗដល់សិស្ស។

INSTRUCTIONS: Signifies assessor instructions that are to be read silently.

ពាក្យ "សេចក្តីណែនាំ" សម្គាល់ថាអ្នកវាយតម្លៃ ត្រូវអានសេចក្តីណែនាំស្ងៀមស្ងាត់ដោយខ្លួនឯងៗ។

Student Consent and Information

ការយល់ព្រម និងព័ត៌មានសិស្ស

INSTRUCTIONS: Clearly read the text in the box to the children.
សេចក្តីណែនាំ៖ អានអត្ថបទក្នុងប្រអប់ខាងក្រោមឱ្យបានច្បាស់ៗដល់សិស្ស។

🕮 **Good morning. My name is _____ and I work with _____. We are visiting schools and trying to understand how children learn to read. We would like your help in this.**
We are going to do a reading activity together. As part of that activity, I am going to ask you to read letters, words and a short story. You will also write some words and sentences.

This is NOT a test and it will not affect your grade at school.

I will NOT write down your name so no one will know that these are your answers.

You do not have to participate if you do not wish to.
Do you have any questions?

🕮 សួស្តី! ខ្ញុំឈ្មោះ ___ និងធ្វើការនៅ ___ ។ ខ្ញុំសូមប្រាប់មូលហេតុដែលខ្ញុំមកទីនេះ។ ខ្ញុំធ្វើការជាមួយសាលារៀនប្អូន និងក្រសួងអប់រំ ហើយពួកខ្ញុំកំពុងព្យាយាមស្វែងយល់ពីរបៀបដែលសិស្សរៀនអាន។
ខ្ញុំចង់ឱ្យប្អូន ចូលរួមជាមួយខ្ញុំ ប៉ុន្តែប្រសិនបើប្អូនមិនចង់ចូលរួមក៏បានដែរ។ យើងនឹងលេងល្បែងដែលទាក់ទងនឹងការអាន។ ខ្ញុំនឹងឱ្យប្អូនៗនឹងអាន គូអក្សរ ពាក្យ រឿងខ្លី និងសរសេរតាមអាន ពាក្យ និងល្បះ។
គេស្ទនេះមិនមែនជាគេស្ទដាក់ពិន្ទុទេ ហើយវាក៏មិនប៉ះពាល់ដល់ពិន្ទុក្នុងការឡើងថ្នាក់ ឬមិនឡើងថ្នាក់ទេ។
ខ្ញុំនឹងមិនសរសេរឈ្មោះប្អូនទេ ដូច្នេះគ្មាននរណាម្នាក់ដឹងចម្លើយរបស់ប្អូនឡើយ។
តើប្អូនមានសំណួរអ្វីដែរឬទេ?

INSTRUCTIONS: Write a small box and the word "Yes" on the board like on the Student Answer Sheet. Draw a tick in the box as an example.
សេចក្តីណែនាំ៖ អ្នកវាយតម្លៃគូសប្រអប់តូចមួយ និងសរសេរពាក្យ "បាទ/ចាស"ក្រោយប្រអប់ នៅលើក្តារខៀន ឬលើក្រដាសផ្ទាំងធំ ឱ្យដូចនៅលើសន្លឹកកិច្ចការរបស់សិស្ស។ បន្ទាប់មក អ្នកវាយតម្លៃគូសសញ្ញា √ ក្នុងប្រអប់ជាឧទាហរណ៍ឱ្យសិស្សមើល។

🕮 **If you understand and would like to stay and play the reading game, please make a tick in the box next to the word "Yes" on the first page of your answer booklet. If you would rather not stay, please raise your hand.**
🕮 កុល្ហារនេះសូមប្អូនៗមើលមកក្តារខៀន ហើយមើលលើសន្លឹកកិច្ចការរបស់ប្អូន
តើមានប្រអប់ដូចនៅលើក្តារខៀននេះដែរឬទេ។ ប្រសិនបើប្អូនយល់ព្រម ចូលរួមលេង
ល្បែងអំណាន សូមប្អូនគូសសញ្ញា √ ដូចនេះ (អ្នកវាយតម្លៃគូសធិចលើក្តារខៀនជាគំរូ) ក្នុង
ប្រអប់នៅជាប់នឹងពាក្យ "បាទ/ចាស" នៅទំព័រទីមួយនៃសន្លឹកកិច្ចការរបស់ប្អូន។ បើមិនចង់
ទេ សូមលើកដៃឡើងៗ។

INSTRUCTIONS: Check to ensure that students have marked their papers with a tick. If they have not, ask them if they would not like to participate. If any student declines to participate, find one of the chosen alternates to take his/her place.

សេចក្ដីណែនាំ ៖ ពិនិត្យមើលដើម្បីឲ្យប្រាកដថាសិស្សបានគូសសញ្ញា √ លើក្រដាស។ បើមិនទាន់គូស ទេ សូមសួរបញ្ជាក់ថាតើឡូនមិនចង់ចូលរួមទេឬ? ប្រសិនបើសិស្សណាម្នាក់បដិសេធមិនចូលរួម ស្វែងរកសិស្សជំនួសដែលបានជ្រើសរើសដើម្បីជំនួសកន្លែងរបស់គាត់។

🖐 **Good. Are you ready to get started?**

🖐 ល្អ! តើឡូនបានត្រៀមខ្លួនហើយឬនៅ?

INSTRUCTIONS: Write the word "Age" and a small line next to it on the board. Also write boxes the words "Girl" and "Boy" on the board, as on the Student Answer Sheet.

សេចក្ដីណែនាំ ៖ អ្នកវាយតម្លៃសរសេរពាក្យ "អាយុ"និងគូសបន្ទាត់តូចមួយបង្ហាញនៅលើក្ដារខៀ ន។ សូមសរសេរប្រអប់ពាក្យ "ស្រី"និង "ប្រុស"នៅលើក្ដារខៀន ដូចនៅលើសន្លឹកចម្លើយរបស់ សិស្សដែរ។

🖐 **On the first page, you should also see the word "Age" like I've written on the board. On the line next to the word "Age", write your age in numbers. Does everyone understand?**

🖐 នៅលើទំព័រទីមួយ ឡូននឹងឃើញពាក្យ "អាយុ" ដូចខ្ញុំបានសរសេរនៅលើក្ដារខៀនដែរ។ លើ បន្ទាត់នៅជាប់នឹងពាក្យ "អាយុ" សូមសរសេរអាយុរបស់ឡូនជាលេខ។ តើឡូនទាំងអស់គ្នាយល់ ទេ?

INSTRUCTIONS: Check to ensure that everyone has written their age on the line next to the word "Age".

សេចក្ដីណែនាំ ៖ ពិនិត្យមើលដើម្បីឲ្យប្រាកដថាសិស្សគ្រប់គ្នាបានសរសេរអាយុរបស់ពួកគេនៅលើ បន្ទាត់នៅជាប់នឹងពាក្យ "អាយុ"។

🖐 **You will also see the words "Girl" and "Boy" on the cover page. Does everyone see them? If you are a girl, tick the box next to the word "Girl." If you are a boy, tick the box next to the word "Boy." Does everyone understand?**

🖐 ឡូននឹងឃើញពាក្យ "ស្រី"និង "ប្រុស"ដូចខ្ញុំបានសរសេរនៅលើក្ដារខៀនដែរ។ ប្រសិនបើឡូនអ្នកទស្រី សូមគូសសញ្ញា √ នៅប្រអប់ដែលមានពាក្យ "ស្រី" ហើយប្រសិនបើឡូនអ្នកទប្រុស សូមគូសសញ្ញា √ នៅប្រអប់ដែលមានពាក្យ "ប្រុស"។ តើឡូនទាំង អស់គ្នាយល់ទេ?

INSTRUCTIONS: Check to ensure that everyone correctly marked their gender on the cover.

សេចក្ដីណែនាំ ៖ សូមពិនិត្យមើលដើម្បីឲ្យប្រាកដថា សិស្សគ្រប់គ្នាបានគូសអ្នកទរបស់ពួកគេត្រឹមត្រូវ នៅលើគម្រប។

🖐 **Good. Now put your pencil down on your desk and turn to the next page.**

🖐 ល្អ! ឥឡូវនេះដាក់ខ្មៅដែចុះលើតុរបស់ឡូន ហើយបើកទំព័របន្ទាប់។

Letter Identification Task

<div align="center">

ការកំណត់ឈ្មោះតួអក្សរ

(Student Answer Sheet pages 2-3)

(សន្លឹកកិច្ចការសិស្ស ទំព័រទី **2-3**)

</div>

INSTRUCTIONS: Before beginning this section, draw boxes with the following letters on the chalkboard, as in the example next to the star at the top of the Student Answer Sheet page 2:

សេចក្តីណែនាំ មុននឹងចាប់ផ្តើមផ្នែកនេះ អ្នកវាយតម្លៃត្រូវគូសប្រអប់ឧទាហរណ៍នៅដែលមាន តួអក្សរខាងក្រោម នៅលើក្តារខៀន ប្ញ្ជ្រកដូចសញ្ញាងផ្កាយ ដូចឧទាហរណ៍នៅផ្នែកខាងលើនៃសន្លឹក កិច្ចការសិស្ស ទំព័រទី2៖

ឌ.	ច	ញ	ឈ	ូ	ឡ្ឫ

📣 **Everyone should be on Page 2. Do you all see the number 2 at the top of**
your page? Good. We are now going to do an example before we start. Please keep your pencils on your desk and look at me. Do not mark any answers on your sheet until I tell you to do so.

📣 សូមប្ញូនៗបើកទៅទំព័រទី2។ តើប្ញូនទាំងអស់គ្នាឃើញលេខ 2 នៅផ្នែកខាងលើនៃទំព័រ របស់ប្ញូនទេ? ល្អ ឥឡូវនេះយើងនឹងធ្វើឧទាហរណ៍មួយមុនពេលយើងចាប់ផ្តើម។ សូមទុកខ្មៅដៃ របស់ប្ញូននៅលើតុ ហើយមើលមកខ្ញុំ។ សូមប្ញូនៗកុំទាន់គូសចម្លើយណាមួយនៅលើសន្លឹក របស់ប្ញូន រហូតដល់ខ្ញុំប្រាប់ប្ញូនឱ្យធ្វើ។

📣 **You can see some boxes next to a star at the top, like the ones I've drawn on the board. I'm going to say the name of a letter and ask you to tick the letter that I say. Please look at my mouth as I say the letter. So if I say "Tick the letter** ច **as in** ចាប**," I want you to tick letter** ច**, like this:**

📣 សូមប្ញូនមើលមកក្តារខៀន តើឃើញប្រអប់ ឌ. ដូចនៅ លើសន្លឹកកិច្ចការរបស់ប្ញូនដែរប្ញូ? ខ្ញុំនឹងអានអក្សរមួយ ហើយសុំឱ្យប្ញូនគូសរង្វង់អក្សរដែលខ្ញុំ អាន។ សូមស្តាប់ខ្ញុំដោយយកចិត្តទុកដាក់។ ចូរប្ញូន "គូសរង្វង់អក្សរ ច ដូចពាក្យ ចាប" សូមប្ញូន គូសរង្វង់អក្សរ "ច" *(ការិនាទីក្រោយ)* "ច" *(ការិនាទីក្រោយ)* "ច"*(អ្នកវាយតម្លៃគូសនៅលើក្តារខៀន)*។ សូមប្ញូនគូសរង្វង់អក្សរ "ច" លើសន្លឹកកិច្ចការរបស់ប្ញូន។

INSTRUCTIONS: Tick the letter ច *on the board. Ensure that all the students tick* ច *next to the example on their answer sheet.*

សេចក្តីណែនាំ អ្នកវាយតម្លៃគូសរង្វង់អក្សរ ច នៅលើក្តារខៀន។ ត្រូវប្រាកដថាសិស្សទាំងអស់គូស រង្វង់ ច នៅជាប់នឹងឧទាហរណ៍នៅលើសន្លឹកកិច្ចការរបស់ពួកគេ។

📣 **Also, if you tick a letter and then change your mind, just erase your first tick and tick your new answer. Does everyone understand?**

📣 ប្រសិនបើប្ញូនគូសអក្សរមួយ រួចប្ញូរចិត្ត ប្ញូនត្រូវតែគូសខ្ទងលើអក្សរនោះ *(អ្នកវាយតម្លៃគូសជាគំរូនៅលើក្តារខៀន)*។ បន្ទាប់មក គូសរង្វង់អក្សរថ្មីរបស់ប្ញូន។ តើប្ញូនទាំង អស់គ្នាយល់ទេ?

INSTRUCTIONS: If anyone does not understand, repeat the example. Assessor reads each letter or word three times, and between each letter or word for three seconds.
សេចក្ដីណែនាំ ប្រសិនបើមានសិស្សណាមិនយល់ សូមលើកឧទាហរណ៍ឡើងវិញម្ដងទៀតៗ អ្នកវាយតម្លៃត្រូវអានតួអក្សរ ឬពាក្យនីមួយៗឱ្យបានពាដង ហើយចន្លោះពីតួអក្សរ ឬពាក្យនីមួយៗទុកពេលប្រមាណពាវិនាទីៗ

❧ Now I am now going to read the letters for you to tick on your papers. You can now pick up your pencils. Let's begin.
❧ គឡ្ងរនេះ ខ្ញុំនឹងអានអក្សរឱ្យប្អូនគូសរង់លើសន្លឹកកិច្ចការរបស់ប្អូនៗ ប្អូនត្រូវធ្វើកិច្ចការរៀងៗខ្លួន ដោយមិនត្រូវចម្លង ឬបើលគ្នាឡើយ ព្រោះកិច្ចការប្អូនមិនដូចគ្នាទេៗ គោះប្អូនអាចកាន់ខ្មៅដៃ នឹងចាប់ផ្ដើមៗ

1. **❧ Put your finger by number 1. Look at my mouth. Tick the letter គ, as in គោ**
1. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី1។ គូសរង់អក្សរ **គ** ដូចពាក្យ **គោ...គ...គ...គ**
2. **❧ Put your finger by number 2. Look at my mouth. Tick the letter ប, as in បៃះ**
2. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី2។ គូសរង់អក្សរ **ប** ដូចពាក្យ **បៃះ...ប...ប...ប**
3. **❧ Put your finger by number 3. Look at my mouth. Tick the letter យ, as in យ៉ំ**
3. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី3។ គូសរង់អក្សរ **យ** ដូចពាក្យ **យ៉ំ...យ...យ...យ**
4. **❧ Put your finger by number 4. Look at my mouth. Tick the letter រ, as in រាយ**
4. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី4។ គូសរង់អក្សរ **រ** ដូចពាក្យ **រាយ...រ...រ...រ**
5. **❧ Put your finger by number 5. Look at my mouth. Tick the letter ផ, as in ផៃះ**
5. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី5។ គូសរង់អក្សរ **ផ** ដូចពាក្យ **ផៃះ...ផ...ផ...ផ**
6. **❧ Put your finger by number 6. Look at my mouth. Tick the letter អ, as in អាវ**
6. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី6។ គូសរង់អក្សរ **អ** ដូចពាក្យ **អាវ...អ...អ...អ**
7. **❧ Put your finger by number 7. Look at my mouth. Tick the letter ឡ្ប, as in ឡ្បាន**
7. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី7។ គូសរង់អក្សរ **ឡ្ប** ដូចពាក្យ **ឡ្បាន...ឡ្ប...ឡ្ប...ឡ្ប**
8. **❧ Put your finger by number 8. Look at my mouth. Tick the letter ◌ុ, as in ខ្មៅ**
8. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី8។ គូសរង់ជើង ◌ុ ដូចពាក្យ **ខ្មៅ...◌ុ...◌ុ...◌ុ**
9. **❧ Put your finger by number 9. Look at my mouth. Tick the letter ◌ួ, as in ក្បៀវ**
9. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី9។ គូសរង់ជើង ◌ួ ដូចពាក្យ **ក្បៀវ...◌ួ...◌ួ...◌ួ**
10. **❧ Put your finger by number 10. Look at my mouth. Tick the letter ◌ៀ, as in ផ្ទៀរ**
10. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី10។ គូសរង់ជើង ◌ៀ ដូចពាក្យ **ផ្ទៀរ...◌ៀ...◌ៀ...◌ៀ**

❧ Please open the worksheet page 3
❧ **សូមប្អូនបើកទៅទំព័រទី៣**
INSTRUCTIONS: Assessor ensure that open page 3 of the worksheet
សេចក្ដីណែនាំ អ្នកវាយតម្លៃត្រូវប្រាកដថាសិស្សទាំងអស់បានបើកដល់ទំព័រទី៣។

11. **❧ Put your finger by number 11. Look at my mouth. Tick the letter e a, as in ខៀ**
11. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី11។ គូសរង់ស្រៈ **e a** ដូចពាក្យ **ខៀ...e a ...e a ...e a**
12. **❧ Put your finger by number 12. Look at my mouth. Tick the letter é, as in ដៃ**
12. ❧ ដាក់ម្រាមដៃចង្អុលលើជួរទី12។ គូសរង់ស្រៈ **é** ដូចពាក្យ **ដៃ...é ...é ...é**
13. **❧ Put your finger by number 13. Look at my mouth. Tick the letter H, as in ស្រះ**

13. ✿ ដាក់ម្រាមដៃចង្អុលលើជួរទី13។ គូសរង្វង់ស្រ: H ដូចពាក្យ **ស្រះ**...H ...H ...H

14. ✿ **Put your finger by number 14. Look at my mouth. Tick the letter I, as in ឌី**

14. ✿ ដាក់ម្រាមដៃចង្អុលលើជួរទី14។ គូសរង្វង់ស្រ: I ដូចពាក្យ **ឌី**... I... I... I

15. ✿ **Put your finger by number 15. Look at my mouth. Tick the letter Mu, as in កុំ**

15. ✿ ដាក់ម្រាមដៃចង្អុលលើជួរទី15។ គូសរង្វង់ស្រ: Mu ដូចពាក្យ **កុំ**... Mu... Mu... Mu

✿ **Good work. Now put your pencil on your desk and turn to the next page of the booklet.**

✿ អរគុណច្រើន បុ៉ណ្ណឹងបានហើយ ដាក់ខ្មៅដៃចុះ។ តទ្បៀរសូមបុ៉នបើកទៅទំព័របន្ទាប់ រួចដាក់ដៃ នៅលើតុ។

INSTRUCTIONS: Assessor ensure that open page 4 of the worksheet

សេចក្តីណែនាំ អ្នកវាយតម្លៃត្រូវប្រាកដថាសិស្សទាំងអស់បានបើកដល់ទំព័រទី៤។

Familiar Word Reading

ការអានពាក្យដែលស្គាល់

(Student Answer Sheet page 4)

(សន្លឹកកិច្ចការសិស្ស ទំព័រទី **4)**

INSTRUCTIONS: Before beginning this section, draw boxes with the following words on the chalkboard, as in the example next to the star at the top of the Student Answer Sheet page 4:

សេចក្តីណែនាំ មុននឹងចាប់ផ្តើមផ្នែកនេះ សូមគូសប្រអប់ខទាហរណ៍នៅដែលមានពាក្យខាង ក្រោម នៅលើក្តារខៀន ដូចខទាហរណ៍ នៅផ្ទៃកខាងលើនៃផ្ទៃកសន្លឹកកិច្ចការសិស្ស ទំព័រទី4៖

ឧ.	ជើ	នេះ៖	កុំ	ខ៖	ចោះ៖

✶ **Everyone should be on the Page 4 of the booklet. Do you all see the number 4 at the top of your page? Good. We are now going to do another example. Please keep your pencils on your desk and look at me. Do not mark any answers on your sheet until I tell you to do so.**

✶ សូមប្អូនៗបើកទៅទំព័រទី4។ តើប្អូនទាំងអស់គ្នាឃើញលេខ 4 នៅផ្ទៃកខាងលើនៃទំព័រ របស់ប្អូនទេ? ល្អ ឥឡូវនេះយើងនឹងធ្វើខទាហរណ៍មួយមុនពេលយើងចាប់ផ្តើម។ សូមទុកខ្មៅដៃ របស់ប្អូននៅលើតុ ហើយមើលមកខ្ញុំ។ សូមប្អូនៗកុំទាន់គូសចម្លើយណាមួយនៅលើសន្លឹក របស់ប្អូន រហូតដល់ខ្ញុំប្រាប់ប្អូនឱ្យធ្វើ។

✶ **You can see some boxes next to a star at the top, like the ones I've drawn on the board. I'm going to say a word and ask you to tick the word that I say. Please look at my mouth as I say the word. So if I say "Tick the word** ជើ**," I want you to tick the word** ជើ**, like this:**

✶ សូមប្អូនមើលមកក្តារខៀន តើឃើញប្រអប់ ឧ. ដូចនៅ លើសន្លឹកកិច្ចការរបស់ប្អូនដែរឬទេ? ខ្ញុំនឹងអានពាក្យមួយ ហើយសុំឱ្យប្អូនគូសរង្វង់ពាក្យដែលខ្ញុំ អាន។ សូមស្តាប់ខ្ញុំដោយយកចិត្តទុកដាក់។ ចូរប្អូន "គូសរង្វង់ពាក្យ ជើ" សូមប្អូនគូសរង្វង់ពាក្យ "ជើ" (ពាវិនាទីក្រោយ) "ជើ" (ពាវិនាទីក្រោយ) "ជើ" ដូចនេះ (អ្នកវាយតម្លៃគូសនៅលើក្តារខៀន)។ សូមប្អូនគូសរង្វង់ពាក្យ "ជើ" លើសន្លឹកកិច្ចការរបស់ប្អូន។

INSTRUCTIONS: Tick the word ជើ *on the board. Ensure that all the students tick* ជើ *next to the example on their answer sheet.*

សេចក្តីណែនាំ អ្នកវាយតម្លៃគូសរង្វង់ពាក្យ ជើ នៅលើក្តារខៀន។ ត្រូវប្រាកដថាសិស្សទាំងអស់គូស រង្វង់ ជើ នៅជាប់នឹងខទាហរណ៍នៅលើសន្លឹកកិច្ចការរបស់ពួកគេ។

✶ **Also, if you tick a word and then change your mind, just erase your first tick and tick your new answer. Does everyone understand?**

✶ ប្រសិនបើប្អូនគូសពាក្យមួយ រួចប្អូនប្តូរចិត្ត ប្អូនត្រាន់តែគូសខ្វែងលើពាក្យនោះ។ បន្ទាប់មក គូសរង្វង់ចម្លើយថ្មីរបស់ប្អូន។ តើប្អូនទាំងអស់គ្នាយល់ទេ?

INSTRUCTIONS: If anyone does not understand, repeat the example. Assessor reads each letter or word three times, and between each letter or word for three seconds.

សេចក្តីណែនាំ ប្រសិនបើមានសិស្សណាមិនយល់ សូមលើកខទាហរណ៍ឡើងវិញម្តងទៀត។ អ្នកវាយ តម្លៃត្រូវអានពាក្យនិមួយៗឱ្យបានពាង ហើយចន្លោះពីពាក្យមួយ ទៅពាក្យមួយទុកពេល ប្រមាណពាវិនាទី។

✶ **I am now going to read the words for you to tick on your papers. You can now pick up your pencils. Let's begin.**

✶ ឥឡូវនេះ ខ្ញុំនឹងអានអក្សរឱ្យប្អូនគូសរង្វង់លើក្រដាសរបស់ប្អូន។ គោះប្អូនអាចកាន់ខ្មៅដៃ នឹងចាប់ផ្តើម។

1. ✎ Put your finger by number 1. Look at my mouth. Tick the word ឆ្នោះ.

1. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី១។ គូសរង្វង់ពាក្យ **ឆ្នោះ...ឆ្នោះ...ឆ្នោះ**

2. ✎ Put your finger by number 2. Look at my mouth. Tick the word សរសៃ

2. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី២។ គូសរង្វង់ពាក្យ **សរសៃ...សរសៃ...សរសៃ**

3. ✎ Put your finger by number 3. Look at my mouth. Tick the word ពុក

3. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៣។ គូសរង្វង់ពាក្យ **ពុក...ពុក...ពុក**

4. ✎ Put your finger by number 4. Look at my mouth. Tick the word កំពង់

4. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៤។ គូសរង្វង់ពាក្យ **កំពង់...កំពង់...កំពង់**

5. ✎ Put your finger by number 5. Look at my mouth. Tick the word ផ្ទះ

5. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៥។ គូសរង្វង់ពាក្យ **ផ្ទះ...ផ្ទះ...ផ្ទះ**

6. ✎ Put your finger by number 6. Look at my mouth. Tick the word ម្ជាស់

6. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៦។ គូសរង្វង់ពាក្យ **ម្ជាស់...ម្ជាស់...ម្ជាស់**

7. ✎ Put your finger by number 7. Look at my mouth. Tick the word ក្រសារ

7. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៧។ គូសរង្វង់ពាក្យ **ក្រសារ...ក្រសារ...ក្រសារ**

8. ✎ Put your finger by number 8. Look at my mouth. Tick the word កប្រ្រោង

8. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៨។ គូសរង្វង់ពាក្យ **កប្រ្រោង...កប្រ្រោង...កប្រ្រោង**

9. ✎ Put your finger by number 9. Look at my mouth. Tick the word តស្ូ៊

9. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី៩។ គូសរង្វង់ពាក្យ **តស្ូ៊...តស្ូ៊...តស្ូ៊**

10. ✎ Put your finger by number 10. Look at my mouth. Tick the word ឱកាស

10. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី១០។ គូសរង្វង់ពាក្យ **ឱកាស...ឱកាស...ឱកាស**

✎ **Good work. Now put your pencil on your desk and please turn to the next page of the booklet.**

✎ អរគុណច្រើន បុ៉ណ្ណឹងបានហើយ ដាក់ខ្មៅដៃចុះ។ តឡ្បូរសូមបុ៉នបើកទៅទំព័របន្ទាប់ រួចដាក់ដៃ នៅលើតុ។

INSTRUCTIONS: Assessor ensure that open page 5 of the worksheet
សេចក្តីណែនាំ អ្នកវាយតម្លៃត្រូវប្រាកដថាសិស្សទាំងអស់បានបើកដល់ទំព័រទី៥។

Word Dictation
ការសរសេរតាមអាន (ពាក្យ)
(Student Answer Sheet Page 5)
(សន្លឹកកិច្ចការសិស្ស ទំព័រទី 5)

✦ Everyone should be on Page 5 of the booklet. Do you all see the number 5 at the top of your page? Good. Now I am going to give you eight words. Please listen carefully. I will say the word. Then I will say the word in a sentence. Then I will say 3 times. After I say the word, write it on your paper. This time write just the word, not the whole sentence. We will do each word separately and you should write each word on a separate line. Does everyone understand?

✦ សូមប្អូនៗបើកទៅទំព័រទី5។ តើប្អូនទាំងអស់គ្នាឃើញលេខ 5 នៅផ្នែកខាងលើនៃទំព័ររបស់ប្អូនទេ? ល្អ! គ្រូរនេះខ្ញុំនឹងអានពាក្យចំនួន៨ ឱ្យប្អូនសរសេរ។ សូមស្តាប់ដោយយកចិត្តទុកដាក់។ បន្ទាប់មក ខ្ញុំនឹងអានពាក្យ និងឃ្លាៗ។ បន្ទាប់មក ខ្ញុំនឹង អានពាក្យពាងៗ។ សូមប្អូនសរសេរវានៅលើសន្លឹកកិច្ចការរបស់ប្អូន។ លើកនេះសរសេរតែពាក្យ មិនមែនឃ្លាៗទាំងមូលទេ។ ប្អូននឹងសរសេរពាក្យម្តងមួយៗ នៅលើបន្ទាត់តាមលេខរៀងនីមួយៗដាច់ដោយឡែកពីគ្នា។ ប្អូន ទាំងអស់គ្នាយល់ទេ?

✦ I am now going to say the words for you to write on your papers. You may now pick up your pencils. Let's begin.

✦ ✦ គ្រូរ ខ្ញុំនឹងអានពាក្យឱ្យប្អូនសរសេរនៅលើសន្លឹកកិច្ចការរបស់ប្អូន។ គោរ! ចាប់ផ្តើម។

**1. ✦ Put your finger by the number 1. The word is តោ, as in [តោជាស្តេចសត្វព្រៃ].
Write the word តោ.**
1. ✦ ដាក់ម្រាមដៃចង្អុលលើជួរទី1។ **តោ [តោជាស្តេចសត្វព្រៃ]**។ សរសេរពាក្យ **តោ...តោ... តោ**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្តីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។
2. ✦ Good. Now put your finger by the number 2. The word is ខែ, as in [ខ្ញុំចូលចិត្តមើល ព្រះខែ]. Write the word ខែ
2. ✦ ដាក់ម្រាមដៃចង្អុលលើជួរទី2។ **ខែ [ខ្ញុំចូលចិត្តមើលព្រះខែ]**។ សរសេរពាក្យ **ខែ...ខែ... ខែ**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្តីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

3. ✦ Good. Now put your finger by the number 3. The word is ដេញ, as in [ក្មេងក្លាងដេញប្រទ្បេងគ្នា]. Write the word ដេញ

3. ✦ ដាក់ម្រាមដៃចង្អុលលើជួរទី3។ **ដេញ [ក្មេងក្លាងដេញប្រទ្បេងគ្នា]**។ សរសេរពាក្យ **ដេញ... ដេញ...ដេញ**

INSTRUCTIONS: Wait about 10 seconds and then say:

សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

4. ✎ Good. Now put your finger by the number 4. The word is ចប, as in [គាស់លីចបទៅព្រៃ]. Write the word ចប

4. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី4។ **ចប** [**គាស់លីចបទៅព្រៃ**]។ សរសេរពាក្យ **ចប...ចប... ចប**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

5. ✎ Good. Now put your finger by the number 5. The word is ឃ្លុំ, as in [ឃ្លុំក្រូបផ្ការ]. Write the word ឃ្លុំ

5. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី5។ **ឃ្លុំ** [**ឃ្លុំក្រូបផ្ការ**]។ សរសេរពាក្យ **ឃ្លុំ...ឃ្លុំ...ឃ្លុំ**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

6. ✎ Good. Now put your finger by the number 6. The word is ព្យេះ, as in [រដូររស្សាមានព្យេះភ្លៀង]. Write the word ព្យេះ

6. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី6។ **ព្យេះ** [**រដូររស្សាមានព្យេះភ្លៀង**]។ សរសេរពាក្យ **ព្យេះ... ព្យេះ...ព្យេះ**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

7. ✎ Good. Now put your finger by the number 7. The word is គីង្គក់, as in [គីង្គក់យំក្បៀរពាងទឹក]. Write the word គីង្គក់

7. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី7។ **គីង្គក់** [**គីង្គក់យំក្បៀរពាងទឹក**]។ សរសេរពាក្យ **គីង្គក់...គីង្គក់...គីង្គក់**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយអានពាក្យបន្ទាប់។

8. ✎ Good. Now put your finger by the number 8. The word is វវ្ញី, as in [មីងឈ្មោណនវវ្ញីប្រើន]. Write the word វវ្ញី

8. ✎ ដាក់ម្រាមដៃចង្អុលលើជួរទី8។ **វវ្ញី** [**មីងឈ្មោណនវវ្ញីប្រើន**]។ សរសេរពាក្យ **វវ្ញី...វវ្ញី...វវ្ញី**

INSTRUCTIONS: Wait about 10 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 10 វិនាទី ហើយចូលកិច្ចការបន្ទាប់។

✎ Good work. Now put your pencil down and turn to the next page of the booklet.

✎ អរគុណឲ្យន ប៉ុណ្ណឹងបានហើយ ដាក់ខ្មៅដៃចុះ។ តឡ្បូវស្មូមឲ្យន បើកទៅទំព័របន្ទាប់ រួចដាក់ដៃនៅលើតុ។

INSTRUCTIONS: Assessor ensure that open page 6 of the worksheet
សេចក្ដីណែនាំ អ្នកវាយតម្លៃត្រូវប្រាកដថាសិស្សទាំងអស់បានបើកដល់ទំព័រទី6។

Sentence Dictation

ការសរសេរតាមអាន (ឃ្លៈ)

✎ **Everyone should be on Page 6 of the booklet. Do you all see the number 6 at the top of your page? Good. Now I am going to read you two short sentences. Please listen carefully. I will read each sentence three times. First I will read it at regular speed. Then I will read it slowly a second time so you can write what you hear. Then I will then read it one more time so that you can check your work.**

We will do each sentence separately. You will write your sentence on the line. If you run out of room on the top line, you can continue on the next line. Does everyone understand?

✎ សូមប្អូនៗបើកទៅទំព័រទី6។ តើប្អូនទាំងអស់គ្នាឃើញលេខ 6 នៅផ្នែកខាងលើនៃទំព័ររបស់ប្អូនទេ? ល្អ! តទៅនេះខ្ញុំនឹងអានល្បះចំនួន២ ឲ្យប្អូនសរសេរ។ សូមស្ដាប់ដោយយកចិត្តទុកដាក់។ បន្ទាប់មក ខ្ញុំនឹងអានល្បះចំនួនពាងង។ ខ្ញុំនឹងអានល្បះយឺតៗ។ សូមប្អូនសរសេរវានៅលើសន្លឹកកិច្ចការរបស់ប្អូន។ លើកនេះ ប្អូនត្រូវសរសេរល្បះទាំងមូល។

ប្អូននឹងសរសេរល្បះម្ដងមួយៗ នៅលើបន្ទាត់តាមលេខរៀងនីមួយៗដាច់ដោយឡែកពីគ្នា។ ប្អូនទាំងអស់គ្នាយល់ទេ?

✎ **Put your pencil at the beginning of the line next to number 1. First, listen carefully to the sentence. Then write it down on your paper. Listen: the first sentence is: "សេះរត់ឡើងលើភ្នំ។"** Now write: **"សេះរត់ឡើងលើភ្នំ។"**

✎ ដាក់ខ្មៅដៃរបស់ប្អូននៅដើមបន្ទាត់នៅជាប់នឹងលេខ១។ ជាដំបូង សូមស្ដាប់ល្បះដោយយកចិត្តទុកដាក់។ បន្ទាប់មកសរសេរវានៅលើសន្លឹកកិច្ចការរបស់ប្អូន។ ស្ដាប់៖ ល្បះទីមួយគឺ៖ **"សេះរត់ឡើងលើភ្នំ។"** ។ តឡូវសរសេរ៖ **"សេះរត់ឡើងលើភ្នំ។"** ។

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី ហើយអានល្បះបន្ទាប់។
✎ **"សេះរត់ឡើងលើភ្នំ។"**

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី ហើយអានល្បះបន្ទាប់។
✎ **"សេះរត់ឡើងលើភ្នំ។"**

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី ហើយអានល្បះបន្ទាប់។
✎ **Good. Now put your pencil at the beginning of the line next to number 2. Listen: the second sentence is "ឈើអណ្ដែតតាមទឹកហូរ។"** Now write: **"ឈើអណ្ដែតតាមទឹកហូរ។"**

✎ ល្អ តឡូវដាក់ខ្មៅដៃរបស់ប្អូននៅខាងដើមបន្ទាត់នៅជាប់នឹងលេខ ២។ ស្ដាប់៖ ល្បះទីពីរគឺ **"ឈើអណ្ដែតតាមទឹកហូរ។"** តឡូវសរសេរ៖ **"ឈើអណ្ដែតតាមទឹកហូរ។"**។

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី ហើយអានល្បះបន្ទាប់។
✎ **"ឈើអណ្ដែតតាមទឹកហូរ។"**

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី ហើយអានល្បះបន្ទាប់។
✊⃰ **"ឈើអណ្ដែតតាមទឹកហូរ។"**

INSTRUCTIONS: Wait about 20 seconds and then say:
សេចក្ដីណែនាំ រង់ចាំប្រហែល 20 វិនាទី បន្ទាប់មក ប្រាប់សិស្សអស់ពេលហើយ។

✊⃰ **Time is up. Put your pencil down. Good work. You have now completed this activity. Congratulations.**
✊ អរគុណប្លូន បុ៉ណ្ណឹងបានហើយ ដាក់ខ្មៅដៃចុះ។ គន្លងសូមប្លូនបើកទៅទំព័របន្ទាប់ រួចដាក់ដៃ នៅលើតុ។
INSTRUCTIONS: Assessor ensure that open page 7 of the worksheet
សេចក្ដីណែនាំ អ្នកវាយតម្លៃត្រូវប្រាកដថាសិស្សទាំងអស់បានបើកដល់ទំព័រទី៧។

Silent Reading Comprehension
ការអានអត្ថបទស្ងាត់ៗ (ការអានយល់ន័យ)
(Student Answer Sheet Pages 7-11)
(សន្លឹកកិច្ចការសិស្ស ទំព័រទី 7-11)

🖐 **Everyone should be on Page 7 of the booklet. Do you all see the number 7 at the top of your page? Good. We are now going to do another example. Please keep your pencils on your desk and look at me. Do not mark any answers on your sheet until I tell you to do so.**
🖐 សូមប្អូនៗបើកទៅទំព័រទី7។ តើប្អូនទាំងអស់គ្នាឃើញលេខ 7 នៅផ្នែកខាងលើនៃទំព័រ របស់ប្អូនទេ? ល្អ ឥឡូវនេះយើងនឹងធ្វើឧទាហរណ៍មួយមុនពេលយើងចាប់ផ្តើម។ សូមទុកខ្មៅដៃ របស់ប្អូននៅលើតុ ហើយមើលមកខ្ញុំ។ សូមប្អូនៗកុំទាន់គូសចម្លើយណាមួយនៅលើសន្លឹក របស់ប្អូន រហូតដល់ខ្ញុំប្រាប់ប្អូនឱ្យធ្វើ។
🖐 **In this section, you will read a short story silently. After you read, you will read 10 questions about the story. You will then tick the correct answer to each question from a list of possible answers on your sheet. Let us begin with an example.**
🖐 នៅក្នុងផ្នែកនេះ ប្អូននឹងអានរឿងខ្លីមួយដោយស្ងៀមស្ងាត់។ បន្ទាប់ពីអានចប់ ប្អូនៗត្រូវ ធ្វើយសំណួរទាំង ១០។ បន្ទាប់មកប្អូន គូសធីកក្នុងប្រអប់ចម្លើយមួយដែលត្រឹមត្រូវ ក្នុងចំណោម ប្រអប់ចម្លើយទាំង៤។
គោះ! យើងចាប់ផ្តើមជាមួយឧទាហរណ៍។

INSTRUCTIONS: Before beginning this section, write the following example story, the example question and the example list of answers on the board.
សេចក្តីណែនាំ មុននឹងចាប់ផ្តើមផ្នែកនេះ សរសេរឧទាហរណ៍រឿងខាងក្រោម ឧទាហរណ៍សំណួរ និងឧទាហរណ៍បញ្ជីនៃចម្លើយនៅលើក្តារខៀន។

E.g., Navy is at school. Navy has found her pencil. Navy is happy.
ឧ. ណារី នៅឯសាលារៀន។ ណារី បានរកឃើញខ្មៅដៃរបស់នាង។ ណារី រីករាយណាស់។
What has Navy found?
តើ ណារី បានរកឃើញអ្វី?
 ☐ ក. ស្បែកជើង Shoes
 ☐ ខ. ខ្មៅដៃ Pencil
 ☐ គ. សាលារៀន School
 ☐ ឃ. សៀវភៅ Book

🖐 **Does anyone want to read the story on the board for the class?**
🖐 តើមានប្អូនណាអាចអានឧទាហរណ៍ សំណួរ និងចម្លើយទាំងប្អូននៅលើក្តារ ខៀននេះបានទេ?

INSTRUCTIONS: If a student raises his/her hand, have them read the story aloud. If not, read the story for them, point to each word in the story as you read.
សេចក្តីណែនាំ ប្រសិនបើសិស្សលើកដៃឡើង សូមឱ្យពួកគេអានឱ្យឮៗ។ ប្រសិនបើគ្មានសិស្សអាន ទេ អ្នករាយតម្លៃអានឧទាហរណ៍ សំណួរ និងចម្លើយទាំងប្អូនឱ្យពួកកាត់ ដោយចង្អុលទៅពាក្យនី មួយៗ។ បន្ទាប់មកឱ្យសួរសិស្សដទៃទៀតថា

🖐 **Who can tell us the answer to the question?**

✦ តើ�ួនណាអាចជ្រាប់ចម្លើយនេះបាន?

✦ **Also, if you tick an answer and then change your mind, just cross out your first tick and tick your new answer. Does everyone understand?**
✦ ប្រសិនបើlួនគូសចម្លើយមួយ រួចប្ដូរចិត្ត lួនក្រាន់តែគូសខ្វែងលើចម្លើយនោះ។ បន្ទាប់មក
គូសសញ្ញា √ ចម្លើយមួយថ្មី។ តើlួនទាំងអស់គ្នាយល់ទេ?

✦ **Now it is time for you to read a story on your own. This time you will read a story on your paper silently to yourself. Turn to the next page. Everyone should now be on page 8. Put your finger on the story on your paper. First you will read the story. When you finish, go on to the next page. You will see 10 questions about the story. Tick the correct answer for each question. You may begin.**
✦ គឡរុនេះ ដល់ពេលដែលlួនអានរឿងដោយខ្លួនឯងម្ដង។ សូមបើកទំព័រទី៨ រួចអានរឿង
ដោយស្ងៀមស្ងាត់។ នៅពេលlួនអានចប់ lួននឹងឆ្លើយសំណួរមួយចំនួន។
lួនមានពេលគ្រប់គ្រាន់ក្នុងការអាន និងឆ្លើយសំណួរ។ lួនត្រូវធ្វើកិច្ចការរៀងៗខ្លួន
ដោយមិនត្រូវសួរ ឬចម្លងគ្នាឡើយ ព្រោះកិច្ចការlួនមិនដូចគ្នាទេ។ ពេលlួនធ្វើកិច្ចការចប់
សូមទុកសន្លឹកកិច្ចការនៅលើតុ ហើយអង្គុយដោយស្ងៀមស្ងាត់។ គោះចាប់ផ្ដើមអាន។

✦ **Time is up. Please stop writing. Good work. Now put your pencil down on your desk (even if you are not finished) and turn to the next page.**
✦ អស់ពេលហើយ។ សូមឈប់សរសេរ រួចដាក់ខ្មៅដៃរបស់lួននៅលើតុ។ ធ្វើបានល្អ! គឡរុlួន
បានបញ្ឈប់កិច្ចការអស់ហើយ។ សូមអបអរសាទរ!

TRANSLATED VERSION OF READING PASSAGE AND COMPREHENSION QUESTIONS

Vichet, A Good Boy

(107 words)

One day, Vichet asked his mother's permission to go to a football match.(7) She said he could go, but he had to do three good things.(16) In the morning, Vichet biked to school.(7) On the way, he gave a friend a ride to school.(10) On the way home, he helped a blind man cross the street.(14) His next goal is to do the third good thing.(9) Vichet saw rubbish scattered on the street.(6) He collected and put the rubbish in the rubbish bin.(9) After doing all three good things, Vichet rushed home.(14) He wanted to see his mother as soon as possible.(15)

រឿង វិចិត្រក្មេងល្អ
(១០៧ពាក្យ)

ថ្ងៃមួយ វិចិត្រសុំម្ដាយទៅមើលការប្រកួតបាល់ទាត់។(៧) ម្ដាយប្រាប់ថា កូនអាចទៅបាន តែកូនត្រូវធ្វើរឿងល្អបីយ៉ាងសិន។(១៦) ពេលព្រឹក វិចិត្របានជិះកង់ទៅសាលារៀន។(៧) នៅតាម ផ្លូវ វាជួយដឹកមិត្តម្នាក់ទៅជាមួយគ្នា។(១០) ពេលត្រឡប់មកវិញ វាបានជួយមនុស្សពិការភ្នែក ម្នាក់ឆ្លងផ្លូវ។(១៤) គោលដៅបន្ទាប់របស់វា គឺធ្វើរឿងល្អទីបី។(៩) វិចិត្របានឃើញសំរាមរាយ ប៉ាយតាមផ្លូវ។(៦) វាប្រមូលសំរាមទាំងអស់ដាក់ក្នុងធុងសំរាម។(៩) បន្ទាប់ពីធ្វើរឿងល្អទាំងបី យ៉ាងរួចហើយ វិចិត្រក៏ប្រញាប់ទៅផ្ទះ។(១៤) វាចង់ជួបម្ដាយរបស់វាឱ្យបាននាប់ តាមដែលអាចធ្វើ ទៅបាន។(១៥)

១. តើវិចិត្រសុំម្ដាយទៅណា? Where did Vichet ask his mom to go?
- ☐ ក. ទៅសាលារៀន Go to school
- ☐ ខ. មើលបាល់ទាត់ Watch football
- ☐ គ. លេងបាល់ទាត់ Play football
- ☐ ឃ. ដឹកមិត្តភក្តិ Get ride his friend

២. តើម្ដាយប្រាប់ឱ្យវិចិត្រធ្វើរឿងល្អប៉ុន្មានយ៉ាង? How many good things did his mother tell him to do?
- ☐ ក. រឿងល្អមួយយ៉ាង one good thing.
- ☐ ខ. រឿងល្អពីរយ៉ាង two good things.
- ☐ គ. រឿងល្អបីយ៉ាង three good things.
- ☐ ឃ.រឿងល្អបួនយ៉ាង four good things.

៣. តើវិចិត្រទៅសាលារៀនដោយរបៀបណា? How did he go to school?
- ☐ ក. ដើរ Walk
- ☐ ខ. ជិះឡាន Ride Car
- ☐ គ. ជិះម៉ូតូ Drive motor
- ☐ ឃ.ជិះកង់ Ride bicycle

៤. តើវិចិត្រជួយនរណាឆ្លងផ្លូវ? Who did he help to cross the road?
- ☐ ក. មនុស្សចាស់ Elderly
- ☐ ខ. មិត្តភក្តិ Friend
- ☐ គ. ជនពិការភ្នែក Blind

□ ឃ.ជនពិការជើង Crippled

៥. តើវិចិត្រប្រមូលសំរាមនៅកន្លែងណា? Where did he collect the rubbish?
    □ ក. តាមផ្លូវ On the road
    □ ខ. ទីលានបាល់ទាត់ At football pitch
    □ គ. សាលារៀន At school
    □ ឃ.នៅផ្ទះ At home

៦. តើវិចិត្រដឹកនរណាទៅសាលារៀន? Who did he give a ride to?
    □ ក. ប្អូនប្រុស Brother
    □ ខ. ជនពិការភ្នែក Blind
    □ គ.មនុស្សចាស់ Elderly
    □ ឃ. មិត្តភក្ដិ Friend

៧. តើរឿងល្អទីពីរដែលវិចិត្របានធ្វើគឺអ្វី? What is his second good thing?
    □ ក. ដឹកមិត្តភក្ដិ give his friend a ride
    □ ខ. ជួយមនុស្សពិការភ្នែក help a blind
    □ គ. ប្រមូលសំរាម collect the rubbish
    □ ឃ.ជួយការងារផ្ទះ housework

៨. តើវិចិត្រប្រមូលសំរាមទៅទុកឯណា? Where did he keep the rubbish?
    □ ក. ក្បែរទីលានបាល់ទាត់ near the football pitch
    □ ខ. កៀនផ្លូវ on the road side
    □ គ. ក្នុងធុងសំរាម in rubbish bin
    □ ឃ.ទុកនៅផ្ទះ keep at home

៩. ហេតុអ្វីបានជាវិចិត្រប្រញ៉ាប់ទៅជួបម្ដាយ? Why Vichet hurry to meet his mother?
    □ ក. ព្រោះចង់សុំលុយម្ដាយ Ask for money
    □ ខ. ព្រោះចង់បានការយល់ព្រាមពីម្ដាយ Want permission from mother
    □ គ. ព្រោះចង់ទៅលេងបាល់ទាត់ To play football
    □ ឃ. ព្រោះនឹកម្ដាយ Missing his mother

១០. តើវិចិត្រនឹងធ្វើអ្វី បន្ទាប់ពីជួបម្ដាយ? What would he do after meeting his mother?
    □ ក. ជួបមិត្តភក្ដិ Meet friend
    □ ខ. ជួបជនពិការភ្នែក Meet blind
    □ គ. ជួបគ្រូបង្រៀន meet teacher
    □ ឃ. មើលការប្រកួតបាល់ទាត់ Watch football match

ANNEX B. RELIABILITY STATISTICS

Table B.1. CB-EGRA Reliability

```
                                                      average
                           item-test    item-rest    interitem
Item           | Obs  Sign correlation  correlation  covariance    alpha
---------------+-----------------------------------------------------------
Letters        | 376   +     0.7955       0.7374       842.9991    0.9404
Familiar Words | 376   +     0.9050       0.8599       713.5219    0.9228
Word Dictation | 376   +     0.9127       0.8784       751.8882    0.9232
Sentence 1     | 376   +     0.9298       0.8830       632.2414    0.9228
Sentence 2     | 376   +     0.9162       0.8696       675.8263    0.9217
Silent Reading | 376   +     0.8406       0.7675       742.6369    0.9342
---------------+-----------------------------------------------------------
Test scale     |                                       726.519     0.9393
```

Table B.2. EGRA Reliability

```
                                                      average
                           item-test    item-rest    interitem
Item           | Obs  Sign correlation  correlation  covariance    alpha
---------------+-----------------------------------------------------------
Letters        | 376   +     0.8952       0.8639       1272.498    0.9617
Familiar Words | 376   +     0.9734       0.9467       755.2032    0.8829
Oral Reading   | 376   +     0.9789       0.9539       694.5145    0.8863
Reading Comp   | 376   +     0.9348       0.8766       834.2471    0.9071
---------------+-----------------------------------------------------------
Test scale     |                                       889.1157    0.9358
---------------------------------------------------------------------------
```

Note: EGRA scores are in italics; CB-EGRA scores are in bold

Table B.3.   Pairwise Correlation Matrix for CB-EGRA and EGRA

	letter score	*letter score (attempted)*	*fam_word score*	*fam_word score (attempted)*	*oral_read score*	*oral_read score (attempted)*	**orf**	*read_comp score*	*read_comp score (attempted)*
letter	1								
letter (att)	0.89	1							
fam_word	0.87	0.83	1						
fam_word (att)	0.86	0.9	0.95	1					
oral_read	0.85	0.86	0.95	0.96	1				
oral_read (att)	0.85	0.86	0.95	0.96	1	1			
orf	0.81	0.71	0.93	0.82	0.87	0.87	1		
read_comp	0.78	0.76	0.86	0.86	0.88	0.88	0.81	1	
read_comp (att)	0.74	0.77	0.79	0.84	0.84	0.84	0.7	0.91	1
cb_letter	0.74	0.87	0.7	0.8	0.75	0.75	0.58	0.66	0.69
cb_fam_word	0.81	0.87	0.85	0.9	0.88	0.88	0.74	0.78	0.8
cb_word_dict	0.78	0.79	0.86	0.84	0.85	0.85	0.84	0.79	0.74
cb_sent1	0.79	0.75	0.88	0.83	0.87	0.87	0.85	0.79	0.73
cb_sent2	0.76	0.75	0.86	0.82	0.86	0.86	0.82	0.78	0.71
cb_silent_read	0.69	0.63	0.78	0.7	0.74	0.74	0.79	0.7	0.61