

Ability

The main architecture of the 'Beyond Basics' assessment tool is based on matching curricular expectations and ground realities that need to be taken into consideration if assessment data is to be translated easily to understand gaps and plan effective interventions.

Concepts tested

Because past editions of the ASER survey have highlighted the fact that significant proportions of older children lack foundational skills, ASER's basic assessment of reading, arithmetic and English was retained in the 'Beyond Basics' survey to understand whether all youth in the age group 14-18 have mastered these foundational abilities.

The National Council of Educational Research and Training's (NCERT) Learning Outcome indicators for elementary education also highlight several concepts that youth are expected to be familiar with at the end of each grade.¹ The 'Beyond Basics' assessment tool assesses some of these concepts in context of everyday usage. Some tasks on the 'Beyond Basics' tool are mapped to corresponding Learning Outcome indicators below:

Section and sample tasks	Corresponding subject and grade of learning outcomes
Daily tasks (telling time, counting money, adding weights)	Mathematics - Std III, IV
Common calculations (calculating time, applying unitary method, measuring length)	Mathematics - Std III, IV (time, length) Std VI (unitary method)
Map and General Knowledge	Social Science - Std VI
Financial calculations (percentage, simple interest)	Mathematics - Std VII, VIII

See pages 39-42 for actual tasks.

Development of the testing tool

Work on the ASER 2017 'Beyond Basics' tool began with a focus on what youth in the country should know and actually know; what they should be able to do and what they actually can do. Thus, in addition to the ASER reading and arithmetic tasks, a variety of other domains/dimensions in reading/comprehension, Mathematics and General Knowledge were explored.

Reading and comprehension

In exploring language capabilities of youth, tasks were designed that included both academic or textbook/curricular variety as well as functional or day to day types of tasks. Different methods were used such as reading and comprehension using an oral one-on-one method as well as a pen-paper format.² It was seen that administering a pen-paper test was not suitable in a household setting and did not engage the youth

¹ The entire list of learning outcomes is available in 'Learning Outcomes at Elementary Stage', accessible on the Ministry of Human Resource Development's website, at - http://mhrd.gov.in/sites/upload_files/mhrd/files/Learning_outcomes.pdf

² Reading comprehension: Several variants were developed and piloted. Text length was about 100 to 200 words. Narrative as well as informative texts were used; continuous as well as non-continuous text administered both orally one-on-one and in pen-paper format.

or the community. Hence, rather than academic texts, we focused on identifying documents that are commonly seen in households across the country and have similar objectives and content across states.

Background research was done in a variety of rural contexts on the kind/content of printed material available in public areas. Similar investigations were done for printed materials/documents/cards available in households. Three documents emerged as possible texts to use for an assessment of reading and comprehension: a Std X Board examination mark sheet, instructions on an oral rehydration package, and an immunization card for infants.

Each of these texts/tasks required reading, extracting information and applying what was extracted in a specific context. However, a lack of standardization in mark sheets and immunization cards across states limited the options of documents that could be used as the basis for an assessment to be administered across the country.

Mathematics

Reading and solving tasks using word problems or advanced competencies (such as percentages, fractions) were tried one-on-one as well as in a pen-paper format. These questions were also reframed to be visual, interactive and relatable to the youth's context. Most of these tasks did not require reading, such as tasks related to telling time, counting money, and measuring quantities. Since these tasks proved to be of interest to young people and their families, they were retained in the final assessment.

Questions on financial calculations were also added to this section. These questions were based on managing a budget, financial decision making, computing discounts and calculating rate of interest.

Language of assessment tool

The assessment tool has been translated to 13 languages. The following decisions were taken pertaining to the language of numerals and texts used in the tool.

- O.R.S. text: Through field-based fact finding it was found that O.R.S. packets in India are available in only 2 languages - Hindi and English - across all states in India. However, for purposes of the assessment text was created in all 13 languages used for the ASER survey.
- Numbers on tool: The numbers used throughout the assessment follow the international number system.
- Weights: The language used on the weights question in the assessment tool are Hindi and English, in accordance with the weights observed in different states.

Standardization of the testing process

The assessment was conducted in households and included all youth in the target age group of 14-18. To ensure standardization of the testing process across all survey locations, surveyors adhered to the following rules for testing:

- Surveyors had to read out the instructions as written on a standardized Test Administration Sheet. No variation in oral stimulus was permitted.
- Youth were provided with rough sheets for any calculations.
- Youth had the option to answer orally or in written form.

Assessment tool

The 'Beyond Basics' assessment tool tested the functional competencies of youth by assessing them on the following broad domains:

1. Basic ASER assessment of reading, arithmetic and English
2. Daily tasks like counting money, adding weights
3. Common calculations like measuring length, calculating time
4. Reading and understanding written instructions
5. Map and General Knowledge
6. Financial calculations (administered only to youth who were at subtraction or division level on the ASER arithmetic assessment)

1. Basic ASER assessment*

ASER reading tool

अनुच्छेद

आज मामा आए हैं।
मिठाई साथ लाए हैं।
हम सब मिठाई खाएंगे।
फिर मामा से कहानी सुनेंगे।

अनुच्छेद

रात हो गई है।
चाँद दिख रहा है।
तारे भी चमक रहे हैं।
सब लोग सो गए हैं।

कहानी

विमला और अजय मेला देखने गए। उन्हें मेले में तरह-तरह की दुकानें दिखी। मेले में बहुत झूले थे। वहाँ गरम-गरम हलवा और जलेबियाँ भी बिक रही थी। जलेबी देखकर दोनों के मुँह में पानी आने लगा। उन्हें जलेबी खाने का मन करने लगा। विमला ने जलेबी खरीदी। दोनों ने मिलकर जलेबी खाई। शाम को दोनों घर लौट आए।

शब्द

नाक तोता कूड़ा
धुन मैना
देर रोटी पीला
पुल दिन

अक्षर

द क च
ब ल
थ ह त
म ख

ASER arithmetic tool

Subtraction	Division	Number recognition 10-99	Number recognition 1-9
$\begin{array}{r} 36 \\ - 18 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{)591} \end{array}$	<input type="text" value="28"/> <input type="text" value="81"/>	<input type="text" value="1"/> <input type="text" value="4"/>
$\begin{array}{r} 82 \\ - 24 \\ \hline \end{array}$	$\begin{array}{r} 7 \overline{)872} \end{array}$	<input type="text" value="92"/> <input type="text" value="13"/>	<input type="text" value="7"/> <input type="text" value="3"/>
$\begin{array}{r} 73 \\ - 54 \\ \hline \end{array}$	$\begin{array}{r} 6 \overline{)759} \end{array}$	<input type="text" value="49"/> <input type="text" value="63"/>	<input type="text" value="6"/> <input type="text" value="9"/>
$\begin{array}{r} 98 \\ - 79 \\ \hline \end{array}$	$\begin{array}{r} 8 \overline{)986} \end{array}$	<input type="text" value="78"/> <input type="text" value="34"/>	<input type="text" value="5"/> <input type="text" value="2"/>
$\begin{array}{r} 74 \\ - 59 \\ \hline \end{array}$			
$\begin{array}{r} 57 \\ - 18 \\ \hline \end{array}$			
$\begin{array}{r} 85 \\ - 67 \\ \hline \end{array}$			
$\begin{array}{r} 43 \\ - 26 \\ \hline \end{array}$			

ASER English tool

Capital letter

A J Q
N E
Y R O

Small letter

h p x
u m
d g t

Word

cat sun red
new fan
bus

Sentence

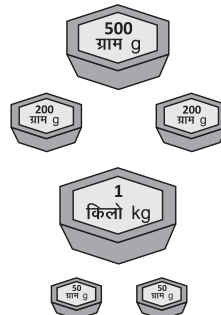
What is the time?
This is a large house.
I like to read.
She has many books.

*Administration instructions for the basic ASER assessment remains unchanged from previous ASER editions. To see these instructions see page 43-46.

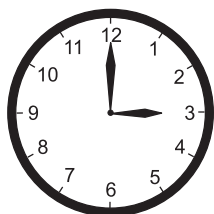
2. Daily tasks



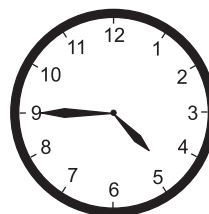
Add and tell me what is the total amount of money shown in this picture.



What is the total weight shown in this picture? Add and give the answer in kilograms.

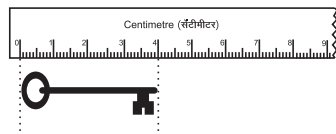


What is the time shown in this clock?

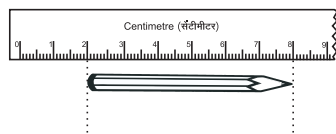


What is the time shown in this clock?

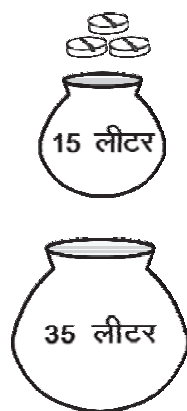
3. Common calculations



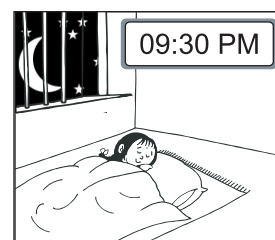
Using the scale shown, measure the length of the key. Give the answer in centimetres.



Using the scale shown, measure the length of the pencil. Give the answer in centimetres.



If 3 chlorine tablets are needed to purify 15 litres of water, how many chlorine tablets are needed to purify 35 litres of water?



If this girl sleeps at this time at night and wakes up at this time in the morning then for how many hours does she sleep?

For each task, the surveyor shows the visual and reads out the question. The youth's responses are coded as correct or incorrect. If the youth does not respond or says that he/she does not know the answer then that is also coded.

4. Reading and understanding written instructions

ओ.आर.एस.
(जीवन रक्षक घोल)

ओ.आर.एस. घोल तैयार करने की विधि



साफ बर्तन में 1 लीटर पानी उबालें और उसे ठंडा कर लें।



ठंडे पानी में 1 पैकेट पूरा ओ.आर.एस. डाल दें।



इसे अच्छी तरह मिला लें।



यह घोल बच्चे को पिलाएँ।

ओ.आर.एस. के घोल की मात्रा उम्र और दस्त की गंभीरता को देखते हुए दें।
 बच्चे : 1 से 2 लीटर घोल को 24 घंटे के अन्दर पिलाएँ।
 युवा : 2 से 4 लीटर घोल को 24 घंटे के अन्दर पिलाएँ।
 इस इलाज को दस्त ठीक होने तक जारी रखें।

सचेत:

- बना हुआ घोल ढककर रखें एवं 24 घंटे के अन्दर ही इस्तेमाल करें।
- बचा हुआ घोल फेंक दें।

इस पैकेट को सूखी जगह में ही रखें।
 मूल्य : 19 रुपये
 उत्पादन की तारीख : मार्च 2015
 समाप्ति की तारीख : मार्च 2018

- How many packets of O.R.S. should be added to 2 litres of water?
- Within how many hours should the prepared solution of O.R.S. be consumed?
- How many litres of O.R.S. can be given to a 21-year old within a span of 24 hours?
- Based on the information given, can this packet of O.R.S. be consumed in December 2018?

5. Map and General Knowledge



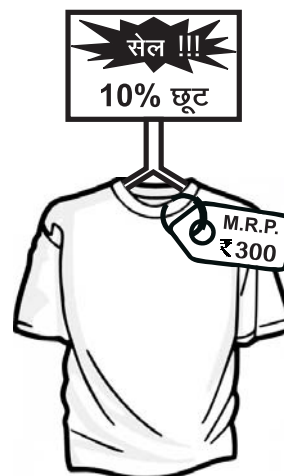
- The map shown here is of which country?
- What is the name of our country's capital?
- Which state do you live in currently? Name that state.
- On the map, point and show the state that you live in currently.

For each task, the surveyor shows the visual and reads out the question. The youth's responses are coded as correct or incorrect. If the youth does not respond or says that he/she does not know the answer then that is also coded.

6. Financial calculations*

मूल्य सूची	
कोल्ड ड्रिंक.....	₹ 25
चाय.....	₹ 12
नमकीन.....	₹ 22
बिस्कुट.....	₹ 27
चॉकलेट.....	₹ 16

You visit a shop where this rate list has been displayed. If you have to spend Rs. 50 completely and buy 3 different things, which 3 things can you buy?



This is the price of this t-shirt and it is available on a discount of 10 percent. If you were to buy this t-shirt, how much money would you need to spend?

दुकान 1		दुकान 2	
मूल्य सूची		मूल्य सूची	
किताब का नाम	मूल्य	किताब का नाम	मूल्य
विज्ञान	₹ 50	विज्ञान	₹ 50
गणित	₹ 80	गणित	₹ 80
हिन्दी	₹ 30	हिन्दी	₹ 30
अंग्रेज़ी	₹ 70	अंग्रेज़ी	₹ 70
इतिहास	₹ 40	इतिहास	₹ 40

विशेष बचत!!
 इन 5 किताबों का सेट
 केवल
₹ 299
 में

Suppose that you go to a market to buy books. There are two bookshops in the market, each selling the same 5 books. Compare the rate lists of the 2 shops and tell me which shop will you buy the books from, if you have to buy all the 5 books?

What is the least amount of money you will have to spend in order to buy the 5 books?

Raju's father has to buy a plot of land. For this he has to take a loan from a bank. The rates of interest offered by 3 different banks has been listed below.

बैंकों के ब्याज दर	
बैंक का नाम	लोन (ऋण) पर ब्याज दर
लक्ष्मी बैंक	11% प्रतिवर्ष
लेना बैंक	12% प्रतिवर्ष
राशि बैंक	13% प्रतिवर्ष

लोन की रकम = 20,000 रुपये

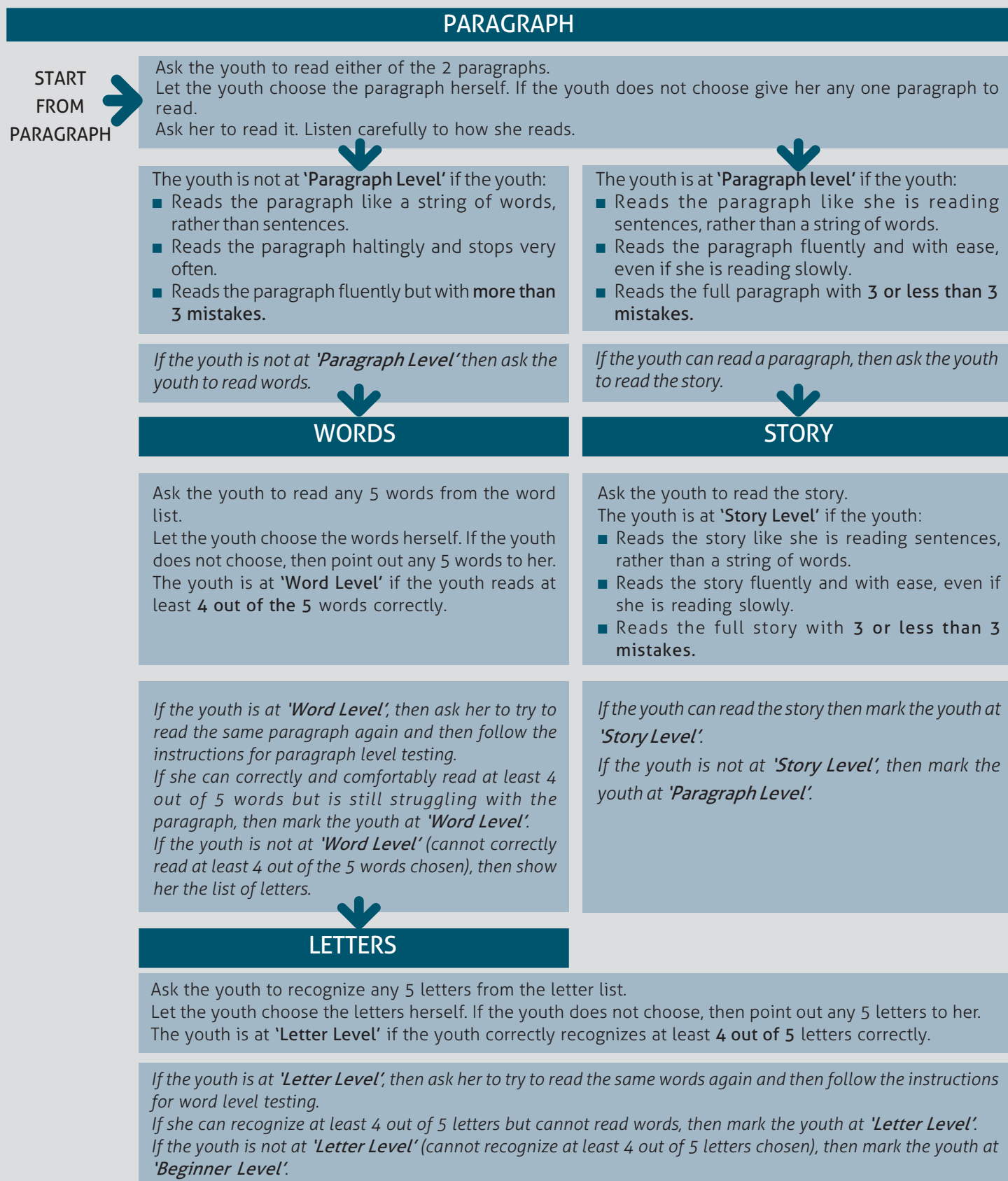
Taking a loan from which of these banks would be most profitable for Raju's father?

Raju's father took a loan of Rs. 20,000. After 1 year, what is the total amount, including the interest, that he would have to return to the bank?

For each task, the surveyor shows the visual and reads out the question. The youth's responses are coded as correct or incorrect. If the youth does not respond or says that he/she does not know the answer then that is also coded.

*These tasks were administered only to youth who were at subtraction or division level on the ASER arithmetic assessment.


How to test ASER reading



Refer to page 39 for the testing tool.

How to test ASER arithmetic

SUBTRACTION 2 digit with borrowing

START FROM SUBTRACTION 

The youth is required to solve 2 subtraction problems. Show the youth the subtraction problems. First ask the youth to choose a problem, if not, then you pick one.
Ask the youth what the numbers are, then ask the youth to identify the subtraction sign.
 If the youth is able to identify the numbers and the sign, ask her to write and solve the problem in the rough sheet provided in the Village Booklet. Observe if the answer is correct.
Even if the first subtraction problem is answered incorrectly, ask the youth to solve the second question following the process explained above. If the second problem is correct, ask the youth to try and do the first problem again.
 If the youth makes a careless mistake, then give the youth another chance with the same question.

*If the youth **cannot do both** subtraction problems correctly, then ask the youth to recognize numbers from 10-99.*
 Even if the youth does just one subtraction problem wrong, give her the number recognition (10-99) task.

*If the youth **does both** the subtraction problems correctly, ask her to do a division problem.*

NUMBER RECOGNITION (10-99)

Ask the youth to identify any 5 numbers from the list. Let the youth choose the numbers herself. If the youth does not choose, then point out any 5 numbers to her.
 If she can correctly recognize at least **4 out of 5** numbers, then mark her at '**Number Recognition (10-99) Level**'.

DIVISION: 3 digits by 1 digits

The youth is required to solve 1 division problem. Show the youth the division problems. She can choose any one problem. If not, then you pick one. Ask her to write and solve the problem. Observe what she does. If she is able to correctly solve the problem, then mark the youth at '**Division Level**'.
Note: The quotient and the remainder both have to be correct.
 If the youth makes a careless mistake, then give the youth another chance with the same question.

*If the youth is not at '**Number Recognition (10-99) Level**' (cannot correctly recognize at least 4 out of 5 numbers chosen), then ask her to recognize numbers from 1-9.*

*If the youth is unable to solve a division problem correctly, mark the youth at '**Subtraction Level**'.*

NUMBER RECOGNITION (1-9)

Ask the youth to identify any 5 numbers from the list. Let the youth choose the numbers herself. If the youth does not choose, then point out any 5 numbers to her.
 If she can correctly recognize at least **4 out of 5** numbers, then mark her at '**Number Recognition (1-9) Level**' .
 If the youth is not at '**Number Recognition (1-9) Level**' (cannot recognize at least 4 out of 5 numbers chosen), then mark her at '**Beginner Level**'.

Refer to page 39 for the testing tool.

How to test ASER English

There are 2 parts in the English testing: Reading and Meaning.

- First administer the reading section and mark the highest reading level of the youth.
- Then administer the meaning section. **This is only for youth who are marked at word or sentence level in the English reading section.**

PART 1: READING

CAPITAL LETTERS

START FROM CAPITAL LETTERS



Ask the youth to recognize any 5 capital letters from the capital letter list. Let the youth choose the letters herself. If the youth does not choose, then point out any 5 letters to her.



The youth is not at 'Capital Letter Level' if the youth cannot recognize at least 4 out of the 5 letters.

The youth is at 'Capital Letter Level' if the youth correctly recognizes at least 4 out of the 5 letters.



If the youth is not at 'Capital Letter Level' (cannot recognize at least 4 out of the 5 letters chosen), then mark the youth at 'Beginner Level'.

If the youth is at 'Capital Letter Level', then ask the youth to recognize small letters.



SMALL LETTERS

Ask the youth to recognize any 5 small letters from the small letter list. Let the youth choose the letters herself. If the youth does not choose, then point out any 5 letters to her.



The youth is not at 'Small Letter Level' if the youth cannot recognize at least 4 out of the 5 letters.

The youth is at 'Small Letter Level' if the youth correctly recognizes at least 4 out of the 5 letters.

If the youth is not at 'Small Letter Level' (cannot recognize at least 4 out of 5 letters chosen), then mark the youth at 'Capital Letter Level'.

If the youth is at 'Small Letter Level', then ask the youth to read the words.



WORDS

Ask the youth to read any 5 words from the word list. Let the youth choose the words herself. If the youth does not choose, then point out any 5 words to her.



The youth is not at 'Word Level' if the youth cannot read at least 4 out of the 5 words.

The youth is at 'Word Level' if the youth correctly reads at least 4 out of the 5 words.

If the youth is not at 'Word Level' (cannot read at least 4 out of the 5 words chosen), then mark the youth at 'Small Letter Level'.

If the youth is at 'Word Level', then ask the youth to read the sentences.

Continued on the next page.

SENTENCES

Ask the youth to read all four of the given sentences.

The youth is not at '**Sentence Level**' if the youth:

- Cannot read at least **2 out of the 4** sentences fluently.
- Reads the sentences like a string of words, rather than a sentence.
- Reads the sentences haltingly or stops very often.

*If the youth is not at '**Sentence Level**', then mark the youth at '**Word Level**'*

AND

Ask the youth to tell you the meaning of the words she has read correctly.

The youth is at '**Sentence Level**' if the youth:

- Reads at least **2 out of the 4** sentences fluently.
- Reads the sentence like a sentence and not a string of words.
- Reads the sentence fluently and with ease, even if she is reading slowly.

*If the youth is at '**Sentence Level**', then mark the youth at '**Sentence Level**'*

AND

Ask the youth to tell you the meaning of the sentences she has read correctly.

PART 2: MEANING

FOR 'WORD LEVEL' YOUTH

WORD MEANINGS

Ask the youth to tell the meaning of the words she has read correctly, **in her local language**.

The youth knows the meaning of the words, if the youth can correctly tell the meaning of at least 4 of the read words. She can tell the meaning of the words by:

- Saying the correct meaning in her local language OR
- Pointing to an object, which explains the meaning of the word. For eg. pointing to her father while explaining the meaning of 'man'; pointing to something red to explain the meaning of 'red'.

*If the youth can correctly tell the meaning of **at least 4** of the words, then mark the youth as '**Can say**' in the meaning column.*

*If the youth cannot correctly tell the meaning of **at least 4** of the words, then mark the youth as '**Cannot say**' in the meaning column.*

Note: If the youth is marked at word level, then ask only word meaning.
 If the youth is marked at sentence level, then ask only sentence meaning.

FOR 'SENTENCE LEVEL' YOUTH

SENTENCE MEANINGS

Ask the youth to tell you the meaning of the sentences she has read correctly, **in her local language**.

The youth knows the meaning of the sentences, if the youth can correctly tell the meaning of at least 2 of the read sentences. She can tell the meaning of the sentences by:

- Saying the correct meaning in her local language OR
- Explaining the meaning of at least the main underlined words in the sentence. For eg. For a sentence like 'What is the time?' the youth should at least be able to say '*kya/kitna*' and '*samay/waqt*'.

Note: Do not ask the meaning of the main underlined words by pointing at them one by one

*If the youth can correctly tell the meaning of **at least 2** of the sentences, then mark the youth as '**Can say**' under the meaning column.*

*If the youth cannot tell the meaning of **at least 2** of the sentences, then mark the youth as '**Cannot say**' under the meaning column.*