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:

<table>
<thead>
<tr>
<th>Section and sample tasks</th>
<th>Corresponding subject and grade of learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily tasks (telling time, counting money, adding weights)</td>
<td>Mathematics - Std III, IV</td>
</tr>
</tbody>
</table>
| 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.


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.
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*

*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.

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

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

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.
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*

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?

![Rate List]

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?

![T-shirt]

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?

![Bookshop Rate List]

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.

![Interest Rates]

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

### PARAGRAPH

Ask the youth to read either of the 2 paragraphs. Let the youth choose the paragraph herself. If the youth does not choose give her any one paragraph to read. Ask her to read it. Listen carefully to how she reads.

- The youth is not at 'Paragraph Level' if the youth:
  - Reads the paragraph like a string of words, rather than sentences.
  - Reads the paragraph haltingly and stops very often.
  - Reads the paragraph fluently but with more than 3 mistakes.

- The youth is at 'Paragraph Level' if the youth:
  - Reads the paragraph like she is reading sentences, rather than a string of words.
  - Reads the paragraph fluently and with ease, even if she is reading slowly.
  - Reads the full paragraph with 3 or less than 3 mistakes.

If the youth is not at 'Paragraph Level' then ask the youth to read 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 at 'Word Level' if the youth reads at least 4 out of the 5 words correctly.

- If the youth is at 'Word Level', then ask her to try to read the same paragraph again and then follow the instructions for paragraph level testing.
- If the youth can read a paragraph, then ask the youth to read the story.

### STORY

Ask the youth to read the story. The youth is at 'Story Level' if the youth:

- READS THE STORY LIKE SHE IS READING SENTENCES, RATHER THAN A STRING OF WORDS.
- READS THE STORY FLUENTLY AND WITH EASE, EVEN IF SHE IS READING SLOWLY.
- READS THE FULL STORY WITH 3 OR LESS THAN 3 MISTAKES.

If the youth can read the story then mark the youth at 'Story Level'. If the youth is not at 'Story Level', then mark the youth at 'Paragraph Level'.

If the youth can read the story then mark the youth at 'Story Level'. If the youth is not at 'Story Level', then mark the youth at 'Paragraph Level'.

### LETTERS

Ask the youth to recognize any 5 letters from the 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 at 'Letter Level' if the youth correctly recognizes at least 4 out of 5 letters correctly.

- If the youth is at 'Letter Level', then ask her to try to read the same words again and then follow the instructions for word level testing.
- If she can recognize at least 4 out of 5 letters but cannot read words, then mark the youth at 'Letter Level'.
- If the youth is not at 'Letter Level' (cannot recognize at least 4 out of 5 letters chosen), then mark the youth at 'Beginner Level'.

Refer to page 39 for the testing tool.
How to test ASER arithmetic

SUBTRACTION 2 digit with borrowing

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.

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’.

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

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 not at ‘Number Recognition (1-9) Level’ (cannot recognize at least 4 out of 5 numbers chosen), then mark her at ‘Beginner Level’.

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’.

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’.

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’.

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), 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’.

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

<table>
<thead>
<tr>
<th>Start from Capital Letters</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The youth is not at ‘Capital Letter Level’ if the youth cannot recognize at least 4 out of the 5 letters.</td>
</tr>
<tr>
<td></td>
<td>The youth is at ‘Capital Letter Level’ if the youth correctly recognizes at least 4 out of the 5 letters.</td>
</tr>
<tr>
<td></td>
<td>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’.</td>
</tr>
<tr>
<td></td>
<td>If the youth is at ‘Capital Letter Level’, then ask the youth to recognize small letters.</td>
</tr>
</tbody>
</table>

#### SMALL LETTERS

<table>
<thead>
<tr>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The youth is not at ‘Small Letter Level’ if the youth cannot recognize at least 4 out of the 5 letters.</td>
</tr>
<tr>
<td>The youth is at ‘Small Letter Level’ if the youth correctly recognizes at least 4 out of the 5 letters.</td>
</tr>
<tr>
<td>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’.</td>
</tr>
<tr>
<td>If the youth is at ‘Small Letter Level’, then ask the youth to read the words.</td>
</tr>
</tbody>
</table>

#### WORDS

<table>
<thead>
<tr>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The youth is not at ‘Word Level’ if the youth cannot read at least 4 out of the 5 words.</td>
</tr>
<tr>
<td>The youth is at ‘Word Level’ if the youth correctly reads at least 4 out of the 5 words.</td>
</tr>
<tr>
<td>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’.</td>
</tr>
<tr>
<td>If the youth is at ‘Word Level’, then ask the youth to read the sentences.</td>
</tr>
</tbody>
</table>
**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.

**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.

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.

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.

Refer to page 39 for the testing tool.