ICAN
International Common Assessment of Numeracy

An open-source assessment developed through a south-south collaboration and aligned to SDG 4.1.1 (a)
Current context & the deepening learning crisis

The COVID-19 pandemic has impacted societies across the planet. To help contain the spread of the virus, schools around the world have closed affecting over 1.5 billion learners.

Before the shock created by this pandemic, around 260 million children, adolescents and youth were already out of school. Even among those who were enrolled, large proportions of children were not acquiring even foundational reading and numeracy skills.

School closures and other disruptions due to the pandemic will lead to further learning loss, increased dropouts and higher inequality. While children are out of school, almost all learning assessments have come to a halt, exacerbating the challenge of obtaining reliable data on learning, particularly for the most marginalized.

Urgent need for assessments to focus on foundational learning at the early stage

All education systems expect children to acquire foundational abilities of reading and numeracy in the first few years so that they can negotiate more difficult content as they progress to higher grades. In most contexts, classroom teaching is guided by the need to cover an ambitious curriculum. Although large proportions of children lag behind curriculum expectations, they are rarely offered a chance to catch up.

COVID-19 may cause foundational learning to decline even further among children in early primary grades due to unavailability of support at home, especially in less affluent households.

Fueling the SDG promise

Learning outcomes feature prominently in Sustainable Development Goal (SDG) 4. Target 4.1 states: "By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes." Despite the SDG push, school closures due to COVID-19 are likely to reverse any gains made to date, especially for younger children. If foundational skills are not built at the early stage, the likelihood of meaningful progression through elementary education is low.

To identify existing gaps at the early stage, SDG 4.1.1 (a) measures the proportion of children in grades 2 or 3 achieving at least a minimum proficiency level in reading and mathematics. Monitoring progress under this indicator requires robust, regular, and comparable assessments of children’s foundational learning outcomes (both within a country over time as well as cross-nationally).

Domains & tasks in ICAN

**NUMBER KNOWLEDGE**
- Counting, comparing number of objects
- Number recognition
- Operations (without and with regrouping)
- Real world problems

**GEOMETRY**
- Position & direction
- Shapes & figures

**MEASUREMENT**
- Length & capacity
- Time & calendar

**DATA DISPLAY**
- Retrieving simple information

What does ICAN measure?

There is widespread agreement that foundational numeracy includes domains such as number knowledge, geometry, measurement and simple data display.

The minimum proficiency level descriptor for numeracy under SDG 4.1.1 (a) for grades 2/3 also requires students to demonstrate skills in number sense and computation, shape recognition and spatial orientation.

ICAN assessment tasks are aligned to UNESCO’s Global Proficiency Framework that defines the minimum proficiency levels that learners are expected to demonstrate.
How & where has ICAN been implemented?

ICAN is suitable for use in school or household settings. A large-scale proof of concept has been implemented. Data collection procedures were based on PAL Network’s Data Quality Standards Framework that ensures alignment to global best practices in assessment.

ICAN reach and implementing organizations

- Conducted in 13 countries. 60 randomly sampled communities in 1 rural district per country.
- Administered in randomly sampled households to children in the age-group of 5-16 years.
- Each child assessed orally, one-on-one, so as not to assume that they can read or write.
- Information on children’s schooling status, parents’ education and household and community infrastructure was collected to understand equity issues.

Key facts about the ICAN assessment tool

- Open source; currently available in 11 languages.
- Most tasks are aligned to grade 3-level or lower of the UNESCO Global Proficiency Framework.
- Feasible for use in household-based assessments as well as in school settings.
- Suitable for a broad age group of learners, in order to identify gaps in numeracy.
- Oral and one-on-one administration to include all children, even those who are not yet fluent readers.
- Average administration time of 15 minutes per child.
- Progressive assessment administration—only children who can do easier number operation tasks are given more advanced tasks.
- Feasible to be implemented on large scale in low resource settings.
**Q1:** In this picture, which cat is inside the box?

**Q2:** In this picture, which child is farthest from the tree?

**Q3:** In this picture, which is the shortest pencil?

**Q4:** Here are 4 balls of the same size. Now look at the boxes kept next to each ball. If we completely fill each box with the kind of balls shown, which box will have the most number of balls?
SET 1

Q7: Look at the chart given below carefully.

Q8: What is the time in this clock?

Q9: Look at the calendar given below.

Q10: What is the day on 5th March?

Q11: How many apples are there?

Q12: How many more bananas are there than oranges?
ICAN TOOL

Look at these shapes. Which of these is a triangle?

There are 4 groups of objects given here. Look at them carefully. Which group has the most number of objects?

Which of these is a straight line?

How many birds are here? Choose the correct number.
Q15 Recognize numbers.

3  8  2  9
0
At least 4 out of 5 numbers must be correct

Q16 Solve the following questions.

32 + 15

Q17

46 - 21

Q18 2 x 4 =

Q19 9 ÷ 3 =

Q20 Recognize numbers.

48  84  22
97  30
At least 4 out of 5 numbers must be correct

Q21 Solve the following questions.

56 + 17

Q22

78 - 29

Q23 42 x 6

Q24 7 \underline{93}

Q25 Listen to the question carefully, solve and answer.

There were 43 children in the park. Out of these, 25 of them have gone home. How many children are left in the park now?

Q26 Listen to the question carefully, solve and answer.

A shopkeeper has 48 apples. He keeps 3 apples in each box. How many such boxes will he need to keep all the apples?
The People’s Action for Learning Network (PAL Network) is a south-south partnership of organisations working across three continents. Member organisations conduct citizen-led assessments and/or citizen-led actions aimed at improving learning outcomes. From 2005 onwards, members of this network have focused on measuring whether children in the elementary school age group can read basic text and do simple arithmetic. In many cases PAL members also implement action programs aiming to ensure that all children acquire these foundational skills.

Citizen-led assessments are oral assessments, done in the household and conducted one-on-one with each child. These assessments are usually conducted with a representative sample of children at provincial/state or national levels and repeated periodically over time. These efforts are led by academic institutions or civil society organizations and include participation by a wide range of local actors.