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SAFAL

Structured Assessment For Analyzing Learning

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Acronyms

CBSE	Central Board of Secondary Education
CDAC	Centre for Development of Advanced Computing
FLN	Foundational Literacy and Numeracy
MoE	Ministry of Education
NAS	National Achievement Survey
NAPLAN	National Assessment Program – Literacy and Numeracy
NCERT	National Council of Educational Research and Training
NEP	New Education Policy
PISA	Program for International Student Assessment
SAFAL	Structured Assessment For Analyzing Learning

Foreword

The National Education Policy (2020) is a comprehensive framework by the Ministry of Education (MoE) to ensure quality education in India. The policy recognizes high quality Foundational Literacy and Numeracy (FLN) as an urgent and necessary prerequisite to learning. The quality of assessments in elementary grades can play a pivotal role in measuring progress towards achieving this goal and also provide guidance to each stakeholder in the system for improving learning levels. NEP 2020 recommends transforming the assessment system to promote development of students and suggests a shift from testing rote memorization to competency-based learning. To map progress throughout school years, the NEP 2020 proposes an annual school examination for all students in Grades 3, 5, and 8. This assessment will focus on testing core concepts, application of knowledge and higher order thinking skills.

Structured Assessment for Analyzing Learning levels (SAFAL) will ensure progress throughout school years by providing diagnostic information about students' learning to schools and thus, support school education to move towards competency-based education. The results of this assessment will largely be used to provide development feedback to schools and not for promotion of students to the next grade.

CBSE invites all schools to participate in SAFAL in 2021-22.

Team CBSE
26 July, 2021

Background

Measurement of student learning outcomes is important for improving quality of education. Assessment is the process of gathering and evaluating information on what students know, understand, and can do. This can help students as well as educators, make an informed decision about the next steps in the education process (Clarke, 2012). There are two kinds of assessment of students' learning, used in different contexts and for different purposes:

1. Individual assessments for students
2. System-level assessments or evaluations for schools, regions, or national education system

Individual assessments for pupils can be formative to give feedback to learners and teachers on their skills and progress, or they can be summative, in the form of final grade examination results. Various large-scale regional, national, and international assessments are used to evaluate the output of a school system; and are designed to provide evidence about the levels of student achievement in specific learning domains. A large-scale assessment system needs to address educational policy issues and priorities.

INTRODUCTION TO

SAFAL

In view of the New Education Policy 2020, key focus on skill-based and competency-based assessment, and of NIPUN Bharat, with its commitment towards improving the achievement of student learning outcomes in the foundational years, the Central Board of Secondary Education (CBSE) is planning to introduce a competency-based assessment to assess student learning outcomes on key competencies. The proposed name of the assessment is Structured Assessment for Analyzing Learning (SAFAL). The assessment would be focused on the assessment of core competencies. SAFAL results would provide diagnostic data and insights to each school for promoting development of students.

Relevant sections from National Education Policy 2020 pertaining to assessments at key stages:

'To track progress throughout the school years, and not just at the end of Grades 10 and 12 - for the benefit of students, parents, teachers, principals, and the entire schooling system in planning improvements to schools and teaching-learning processes - all students will take school examinations in Grades 3, 5, and 8 which will be conducted by the appropriate authority. These examinations would test achievement of basic learning outcomes, through assessment of core concepts and knowledge from the national and local curricula, along with relevant higher-order skills and application of knowledge in real-life situations, rather than rote memorization. The Grade 3 examination, in particular, would test basic literacy, numeracy, and other foundational skills. The overall results of school examinations will be used only for developmental purposes of the school education system, including for public disclosure by schools of their overall (anonymized) student outcomes, and for continuous monitoring and improvement of the schooling system.'

The Grade 3 SAFAL results will identify areas of intervention to imporve foundational literacy and numeracy among learners and help develop reforms for the NIPUN Bharat Mission.

KEY FEATURES OF ASSESSMENT

Test core concepts and move away from rote learning

Assessments applicable for all Government and Private Schools

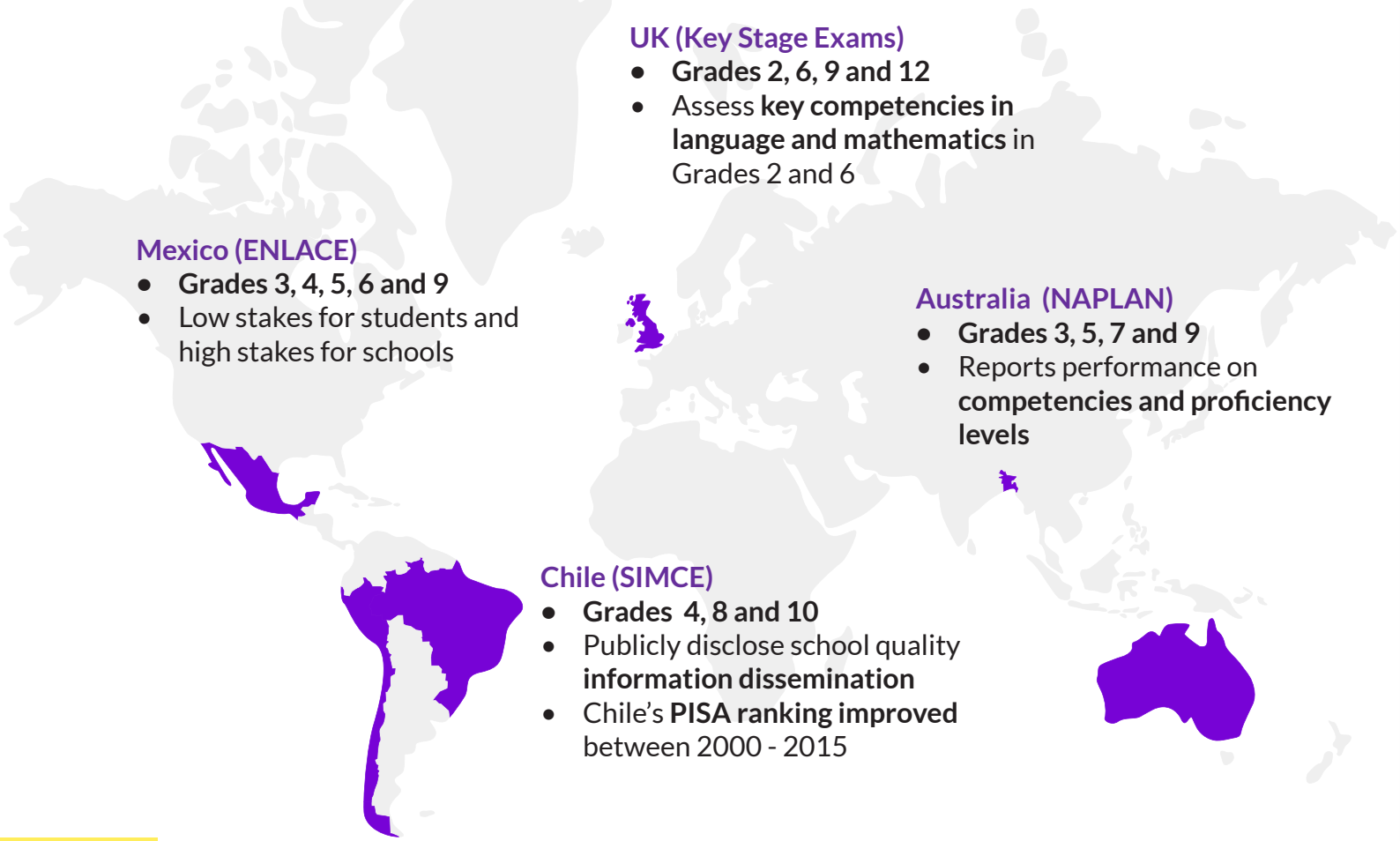
School level data will be shared for development of learning outcomes

Data to be used for continous monitoring and improvement

ASSESSMENTS AT KEY STAGES: EXAMPLES FROM ACROSS THE GLOBE

Key stage assessments are conducted around the world to provide a comparable school-level learning marker that could be used to improve learning outcomes. Chile, Peru, Mexico, Australia, and the United Kingdom have adopted a census-based approach to learning assessments as a key pillar in their education reforms. The assessment tools and implementation standards are rigorous to ensure data reliability and enable effective use of learning achievement data. Some examples are below:

- The National Assessment Program –Literacy and Numeracy (NAPLAN) assessment in Australia is developed using rigorous assessment frameworks based on competencies and proficiency levels. Test developers are engaged to develop items that meet test specifications, items undergo field trials and psychometric analysis before being selected for the final test instruments. NAPLAN assessments are equated every year to enable comparisons over cycles
- Chile's Sistema de Medición de la Calidad de la Educación (SIMCE) has been widely studied and is considered a reliable metric of measuring school level outcomes by parents, schools and the Government. This assessment, alongside a host of other reforms in education, has contributed to overall improvement of learning in Chilean schools. This is also validated by Chile's improved ranking on international large-scale assessments such as PISA



UK (Key Stage Exams)

- **Grades 2, 6, 9 and 12**
- Assess **key competencies in language and mathematics** in Grades 2 and 6

Mexico (ENLACE)

- **Grades 3, 4, 5, 6 and 9**
- Low stakes for students and high stakes for schools

Australia (NAPLAN)

- **Grades 3, 5, 7 and 9**
- Reports performance on **competencies and proficiency levels**

Chile (SIMCE)

- **Grades 4, 8 and 10**
- Publicly disclose school quality **information dissemination**
- Chile's **PISA ranking improved** between 2000 - 2015

PURPOSE OF KEY STAGE ASSESSMENT (SAFAL) IN CBSE SCHOOLS

NUDGE SYSTEM TOWARDS COMPETENCY-BASED LEARNING

Establish a formal protocol to collect valid and reliable data to chart performance on competencies at and below the grade level and monitor progress

MEASURE SCHOOL PERFORMANCE ON KEY COMPETENCIES

School level performance on key competencies and proficiency levels can be used to measure effectiveness of a system through systematic monitoring and reporting of learning levels

IDENTIFY AREAS OF ACADEMIC INTERVENTION FOR SUPPORT/ MANAGEMENT

School managements and school systems can use this data for targeting academic support and data-based management

SAFAL establishes a formal protocol to collect valid and reliable data to chart students' performance on competencies at and below the grade level and monitor progress. It can report school-level performance on key competencies and proficiency levels, and be used to measure effectiveness of a system through systematic monitoring and reporting of learning levels. School management and school systems (e.g. Kendriya Vidyalaya Sangathan, Navodaya Vidyalaya Samiti, State Government schools affiliated to CBSE board, etc.) can use this data for targeting academic support and data-based management. SAFAL will provide a reliable and comparable 'absolute' measure of learning for parents, schools and state officials to assess school performance on core concepts. It is to be noted that SAFAL will not decide to pass or fail at any stage. Rather it will be used for developmental purposes as envisaged in NEP 2020.

SAFAL PILOT 2021-22

SAFAL will be conducted on a pilot basis in CBSE schools for students in Grades 3, 5 and 8 during the academic year 2021-22. The assessment will track schools' progress on core competencies and include the following subjects and languages :

Grade 3 : Pilot assessment for Language and Mathematics offered in the school's language of instruction for Hindi and English medium schools

Grade 5 : Assessment for Language, EVS, and Mathematics offered in the school's language of instruction for Hindi and English medium schools

Grade 8 : Assessment for Language, Science and, Mathematics offered in the school's language of instruction for Hindi and English medium schools

In the first year (2021-22), SAFAL will be conducted in a sample set of schools for Grade 3. For Grades 5 and 8, SAFAL will be offered to all schools.

KEY FEATURES OF SAFAL IN 2021-22

- The languages assessed in the pilot assessment in the first year of implementationwillbeEnglishandHindi
- The mode of administration for the pilot would be digital with the option of paper-based administration for schools with limited infrastructure or lack of access to internet facilities. To this effect CBSE, in conjunction with Centre for Development of Advance Computing (CDAC), would engage with experts to develop a centralized, digital and non-adaptive computer-based assessment software
- In the first year of the assessment, question papers will be shared with schools for implementation through digital/ pen and paper mode
- Schools can conduct the assessment for their students in Grades 5 and 8 and upload assessment data
- For Grade 3, the assessment may be implemented in a sample set of schools with 1-1 administration of questions
- To provide accurate diagnostic information, the assessment will test competencies up to two grades below the testing level to ensure the data does not have floor effects
- Report cards generated from the assessment pilot will report schools' performance on core competencies, for development of learning outcomes and core competencies

Note: Final implementation modalities of SAFAL will be decided after closely monitoring the COVID-19 situation.

DIFFERENCE BETWEEN SAFAL, BOARD EXAMS AND NATIONAL ACHIEVEMENT SURVEY

	NAS	SAFAL (Year1)	Board Examination
Assessment Coverage	Sample-based assessment (district level sample) that provides a snapshot of what students know and can do	Census assessment for all students across target grades, indicative of individual and school's performance against core competencies	Census assessment for target grades, evaluates student performance against prescribed curriculum
Target Population	Students in Grades 3, 5, 8 and 10	All students for Grade 5 and 8 in year 1, potential pilot for Grade 3	All students in Grade 10 and 12
Assessment Authority	NCERT, CBSE (2021 onwards)	CBSE	CBSE
Purpose of Assessment	Provides aggregated data on Districts, States/UTs and National performance against the learning outcomes to enable differential planning; also helps to identify institutional and contextual factors that affect learning achievement of students	Provides diagnostic data on each individual/ school against learning outcomes and key competencies. In subsequent years, data from SAFAL may be be used to institute a monitoring system for schools	Certification/school-leaving exam used to promote students to the next grade, sort students into streams and/or educational institutions in Grade 11/ UG college
Reporting and Data Use	The individual student achievement results are aggregated at the system level. NAS findings inform stakeholders at varied levels in policy, planning and teaching learning processes to improve quality and ensure equity in learning	SAFAL will provide diagnostic data via school level report cards for each school to help plan resource allocation, academic support and inform communities/ parents about school performance	Exams provide student level performance data on key academic subjects, and is used to rank individual students on their performance

ASSESSMENT FRAMEWORK

An Assessment Framework is a document that uses consistent terminology to communicate the purpose and characteristics of the learning assessment to individuals/ groups who are working on it and to a broader audience. It emphasizes the validity of the assessment by making explicit the aim of the assessment, and what it will cover in terms of content, skills, knowledge, and context. A framework also helps those in the wider community to understand what the assessment is about and what the assessment results mean.[1]

Considering the importance of an Assessment Framework, a competency-based assessment framework will be developed for SAFAL, which will include competencies, sub-competencies and define learning outcomes or indicators at various levels for literacy, numeracy, science/EVS, and other core elements of Language and Mathematics. This framework will be the key guiding document for item development. The assessment will test core concepts from the curriculum along with application and higher-order thinking skills. Learning outcomes will be aligned to national curricula and global assessment framework such as the Global Proficiency framework for Reading and Mathematics.[2] As an example, Knowledge and Skill by domain, construct and grade level as per Global Proficiency framework for Mathematics is included here.

The framework design specifically factors in assessment at a given proficiency level of the test taker. Thus, for a given grade, the framework would test student proficiency on two levels below grade level.

In simple terms, the assessment for a Grade 5 student would account for the proficiency level of a child who may be at a Grade 3, 4 or 5 level. The items developed will have diverse Grade level texts and help to account for the disparity in proficiency levels of students' learning. This data would be of diagnostic value for students/schools.

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1 *Principles of Good Practice in Learning Assessment, ACER, UIS and UNESCO*

2 *Global Proficiency Frame work for Reading and Mathematics, UNESCO Institute of Statistics, USAID and others*

ITEM DEVELOPMENT

All test items for Grades 5 and 8 will ask the student to select a response, i.e. choose an answer from a set of two or more options (e.g. multiple-choice items).

Grade 3 items may include constructed response questions (questions that require the test-taker to produce or construct the answer, including those requiring students to respond orally or by writing their response) and instructions for administering oral items through one-on-one administration. Each item or task type requires a set of procedural guidelines for construction and administration. Technical standards for the entire assessment process shall be developed.

Items aligned to the competency framework and blueprint will be developed by experts trained in item development. A set of rigorous guidelines have been developed to help reviewers (or writers) to ascertain the quality of test items by comparing each item against the checklist. These criterion will ensure that the items are aligned to the competency framework, adhere to quality standards set forth for item stems, prompts, answer options and graphics/stimuli. Additionally, items will be reviewed to ensure that they are free from bias and are sensitive to all test-takers.

To ensure that instruments developed for SAFAL meet requirements of validity, reliability and fairness, selected test items that have undergone rigorous review will be piloted and analyzed using psychometric methods before they are used. A representative sample of schools will be selected to conduct field pilots for items. Following parameters will be taken into consideration while designing the item pilots:

1. Sample size
2. Psychometric standards
3. Test administration and test security
4. Equivalence of test items in Hindi/ English
5. Collection of contextual data as part of the test booklet. For example, type of school (KV, JNV, private, etc.), location, etc.

SAMPLE ITEMS FOR SAFAL

The assessment items to be developed for SAFAL will test the critical competencies (aligned to learning outcomes) across key strands and domains. The items will be developed based on the performance indicators across the four levels to determine the student proficiency and achievement in the respective competencies. This kind of assessment design will ensure a shift towards a competency-based assessment and learning system, allowing students to demonstrate understanding and mastery of knowledge and skills they are expected to learn as they progress through the curriculum.

SAMPLE ITEMS FOR MATHEMATICS

Domain	Strand	Competency	Proficiency Level
Numbers and Number Operations	Fractions	Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude	Basic - Divide quantities by equal grouping and repeated subtraction

Sample Question for Grade 5

STEM:
Kamal made one roti as shown in the picture.

If he shares half the roti with his sister, how many pieces will he get for himself?

OPTIONS:
A. 2
B. 3
C. 4
D. 5

KEY & EXPLANATION
B. 3
Total number of pieces of roti = 6. Kamal shares half with his sister. Half of 6 = 3, So, Kamal gets 3 slices.
Option B is correct.

SAMPLE ITEMS FOR EVS/SCIENCE

Strand	Competency (NCERT Theme)	Proficiency Level
Life Sciences	Family and Friends: Relationships	Advance: Describes the interdependence among animals, plants and humans.

Sample Question for Grade 5

STEM:
Arun hears in the news that the forest next to his village will be cleared to build some factories. On hearing this, he is worried about the animals in the forest. Why is Arun worried?

OPTIONS:
A. The villagers use animals for their livelihood
B. The villagers will be angry that the factory took away their land
C. The animals will lose their natural habitat
D. The animals will fight with each other

Key & Explanation :
C. The animals will lose their natural habitat
The animals are dependent on forests for their food and shelter. Due to clearing of forests, they will lose their natural habitat.

SAMPLE ITEMS FOR LANGUAGE

Strand	Competency	Proficiency Level
Reading Comprehension	Make inferences in a Grade level text	Proficient – Make inferences in a Grade 5-level continuous text by relating two or more pieces of explicit and/or implicit information (e.g. causal relationship or comparisons) from a paragraph but not in consecutive sentences, when there is limited competing information

Sample Reading Passage for Grade 5

Every day Mala took the goats out to find new grass. At night, she brought them home again. Every day was the same. One day, Mala was so bored that she fell asleep. The goats started walking off down the road, but an old man saw them. He brought the goats back and woke Mala up. “Thank you, old man,” said Mala.

The next day, Mala fell asleep again. An eagle saw her sleeping and flew down hoping to have a baby goat for dinner, but all the other birds made so much noise they woke Mala. “Thank you, birds,” said Mala as she waved a big stick to frighten the eagle away. “This is good,” said Mala, “I can sleep every day.”

The next day, Mala was asleep in the grass when a thief crept up and stole two of her goats. When she finally woke up, she searched and searched but she could not find the missing goats. She was very frightened. When she got home, her parents were waiting. Mala told them the truth straight away and said that she was very sorry.

“Have you learned your lesson now?” her father said angrily. Then he added, “You are a very lucky girl. A policeman caught the thief and so we’ve got our two goats back.” And after that, Mala became the best goat minder in the village.

STEM:
How does Mala feel about the old man and the birds waking her up?

OPTIONS:
A. Angry
B. Grateful
C. Confused
D. Excited

KEY & EXPLANATION
B. Grateful
The information is a simple inference that relates two pieces of information across paragraphs when there is limited competing information (“Thank you, old man” and “Thank you, birds”)

Source: Adapted from GLOBAL PROFICIENCY FOR READING: GRADES 1 TO 9, December 2020

SELECTION AND CAPACITY BUILDING OF SAFAL ITEM WRITERS

The item authors for SAFAL would be selected from a pool of expert teachers in the CBSE network. These teachers would be selected on the basis of teaching experience, academic qualification, and prior item writing experience. Consequently, the selected pool will undergo a rigorous training and capacity building program. The program will orient them on the SAFAL assessment framework and on what constitutes a good item relevant for SAFAL.

REPORTING

Reporting for SAFAL will focus on school-level achievement of learning by reporting on proficiency levels across grade-level competencies demonstrated in the assessment. Proficiency bands provide a convenient way to describe the profile of a school's achievement and a national minimum standard (benchmark) would be established for each grade. Raw or percentage scores will be converted to scaled scores to prevent misuse of data for promoting/failing a child. As cohorts of students progress year by year, they can be tested in the key areas in subsequent grades and their performance can be compared against this common scale. The data will be confidential. School level reports and student-wise diagnostic data on strengths and areas of development from the assessment will be made available to schools. The report templates will include the following metrics:

1. Reporting Against Proficiency Levels

Disclose a threshold level based on performance on predetermined essential competencies and proficiency standards.

Note: Students whose results are located within a particular level of proficiency are expected to understand the competencies and skills associated with that level and lower levels. Student performance will be placed in a specific band which will be either below, at or above the minimum standard set for the grade and subject tested.

E.g. Use indicators such as ‘x% students have demonstrated proficiency in foundational literacy and numeracy skills’ or ‘40% students in xyz school have demonstrated proficiency in language at grade 5 level’.

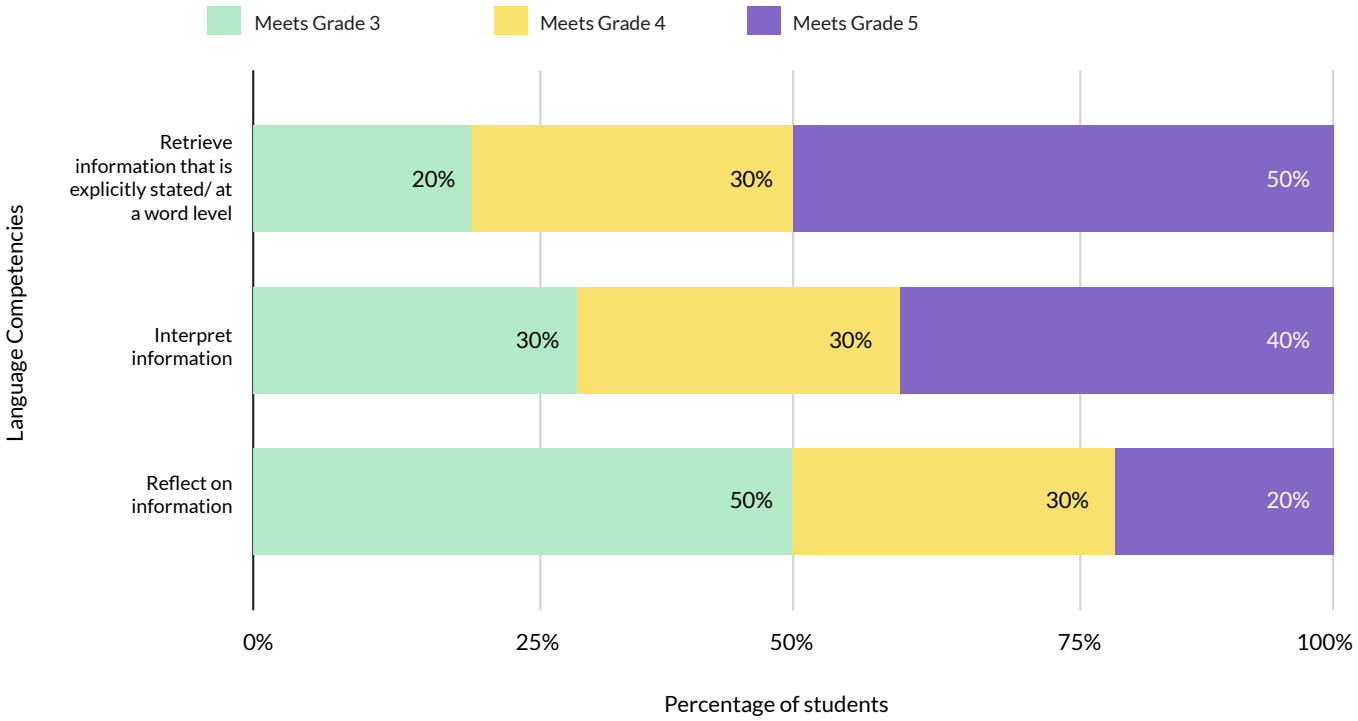


Figure : Sample school report card with proficiency levels for language

2. Diagnostic reporting

Reports proportion of students at each proficiency level across grade level competencies and provide detailed diagnostic feedback to identify learning gaps.

eg. Grade 5 Language
Indicator: From a Grade 5 level text, retrieve explicit information from the text or basic paratextual features
Reporting: 50% students at beginner level, 30% students at intermediate level, 20% students at proficient level.

This report shows the result of xyz School:

This report shows your school's achievement in Literacy and Numeracy assessments administered to students in Grade 5 in CBSE schools. The test results should be interpreted with care, especially since schools experienced disruptions due to COVID-19.

Skills assessed in Grade 5

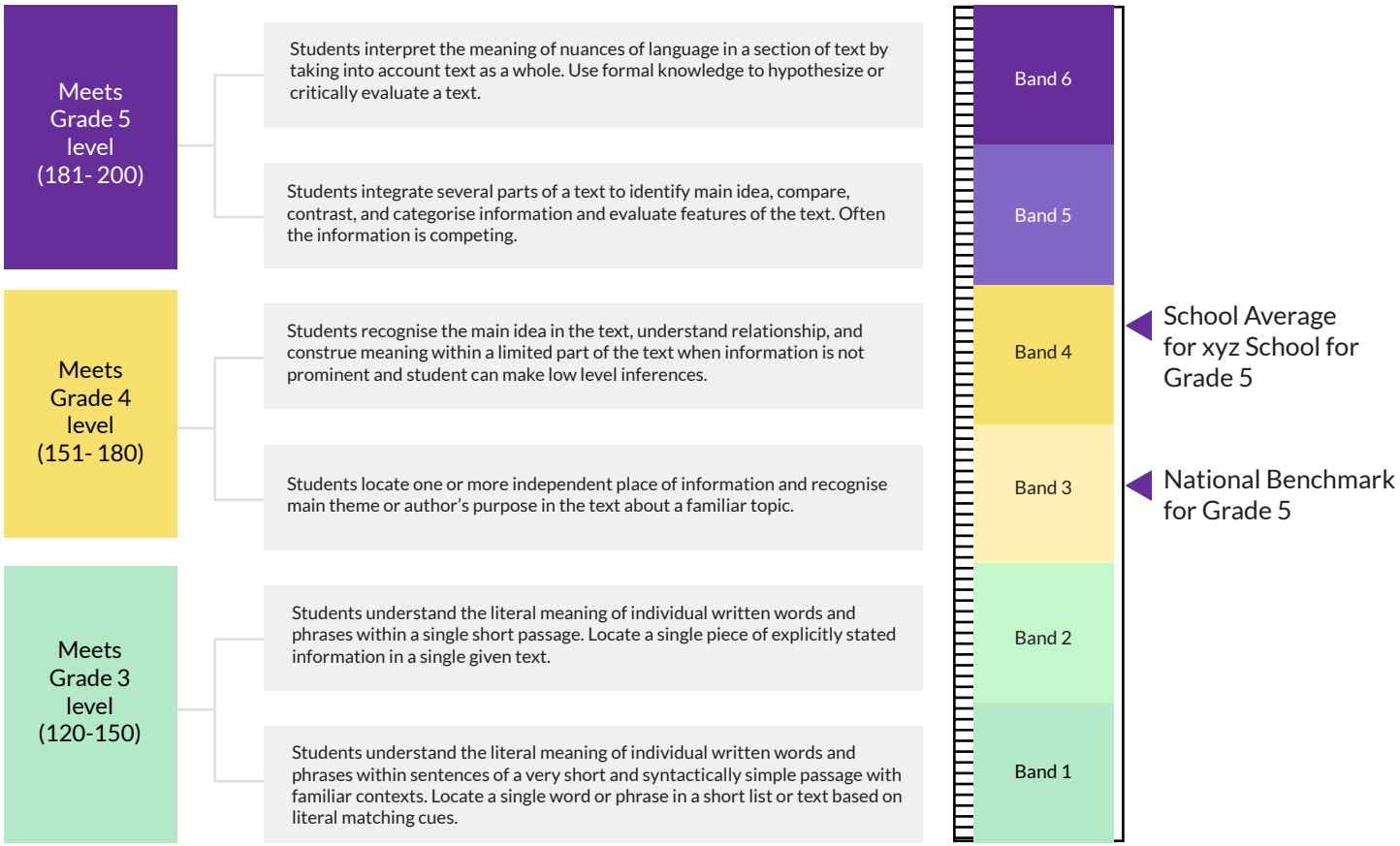
Mathematics

Language

The skills described in this table represent those typically assessed for Grade 5 students. Each band represents a higher difficulty level from the lowest to the highest band. A student achieving a result in a particular band is likely to have correctly answered questions involving skills in that band and in each band below it.

Band 1	Band 2	Band 3	Band 4	Band 5	Band 6

How to read the report?



USE OF DATA AND DISSEMINATION

How can schools use SAFAL?

The assessment will provide diagnostic information to schools on core competencies.

SAFAL reports school performance on each competency and proficiency level to identify areas of focus and guide schools towards improving their learning levels.

How can parents use SAFAL?

Assess performance of your child's school on core concepts.

Support at-home learning for children to shift away from rote memorisation and shift to skill-based and competency-based education.

SAFAL data, reporting school performance on predetermined competencies and proficiency levels, can be used by school systems, school managements, and parents to improve learning outcomes. Student data will not be publicly disclosed and the data won't be used to pass/fail students.

Additionally, the school reports would provide insights and suggestions for strategic intervention mapped to key areas of improvement identified via the assessment. This would provide Principals and teachers with actionable steps that would drive change from bottom-up right from the classroom level.

ROLES AND RESPONSIBILITIES OF CBSE

The Central Board of Secondary Education (CBSE) is committed to the vision of the New Education Policy 2020 that recommends pedagogy and assessment that promotes critical thinking and more holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning. In line with the primary purpose of assessment, as described by NEP 2020, SAFAL will help teachers, students and the entire schooling system to continuously revise teaching-learning processes to optimize learning and development for all students. For this purpose, the Board will take necessary steps in the following areas:

1. Develop fair, reliable, and valid competency-based frameworks and items in collaboration with national and international experts
2. Provide adequate support in the development of necessary tools for the seamless implementation of SAFAL across different schools in the country
3. Take adequate measures to build capacity for developing high-quality training tools and test instruments for SAFAL
4. Engage and communicate with schools to build salience around the importance of a competency-based assessment based on student learning outcomes
5. Take adequate measures to conduct the pilot of SAFAL in a safe and secure manner, in compliance with ongoing health advisories, across the country
6. Provide insights generated from SAFAL to classrooms in a timely manner and support schools in undertaking academic interventions
7. Support schools in using SAFAL data for improving outcomes through academic and management support

FUTURE OUTLOOK

In future cycles of the assessment, teachers may be given secure access to student level data on the competencies tested through the SAFAL examinations. The reports will facilitate teacher's understanding of the student learning levels and the proficiency descriptors can help teachers understand what students know and can do in different subjects. As the report will be diagnostic in nature, it would avoid disclosing raw or percentage scores to prevent misuse of data for promoting/ failing a child. This type of reporting will ensure that every child, irrespective of their performance on the scale, would have 3-4 competencies that they need to improve upon in a subject, which would be disclosed to their teacher.