Ministry of Education
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PARAKH

Performance Assessment, Review, and
Analysis of Knowledge for Holistic Development

PARAKH
RASHTRIYA SARVEKSHAN 2024

ASSESSMENT
FRAMEWORK

PARAKH RASHTRIYA SARVEKSHAN 2024

ASSESSMENT FRAMEWORK

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Acronyms

AMPL	Assessment of Minimum Proficiency level
BIB	Balanced Incomplete Block
CG	Curricular Goal
CTT	Classical Test Theory
DIF	Differential Item Functioning
DoSE&L	Department of School Education & Literacy
ERCE	Regional Comparative and Explanatory Study
ESD	Educational Survey Division
ETS	Educational Testing Service
GAML	Global Alliance to Monitor Learning
GPD	Global Proficiency Descriptors
GPF	Global Proficiency Framework
GPL	Global Proficiency Level
HCI	Human Capital Index
ICC	Item Characteristic Curve
IRT	Item Response Theory
LO	Learning Outcome
MCQ	Multiple Choice Question
MIL	Modern Indian Language
MLE	Maximum Likelihood Estimate
MoE	Ministry of Education
NAC	National Assessment Centre
NAEP	National Assessment of Educational Progress
NAS	National Achievement Survey

NCERT   National Council of Educational Research and Training

NCF-SE   National Curriculum Framework for School Education

NEP   National Education Policy

OECD   Organisation for Economic Co-operation and Development

PARAKH   Performance Assessment, Review, and Analysis of Knowledge for Holistic Development

PASEC   Programme d'analyse des systèmes éducatifs de la CONFEMEN (CONFEMEN Programme for the Analysis of Education Systems)

PIRLS   Progress in International Reading Literacy Study

PISA   Programme for International Student Assessment

PQ   Pupil Questionnaire

PV   Plausible Values

SDG   Sustainable Development Goal

SE   Standard Error

SQ   School Questionnaire

SS   Scale Score

TIMSS   Trends in International Mathematics and Science Study

TQ   Teacher Questionnaire

TWAU   The World Around Us

WLE   Weighted Maximum Likelihood Estimate

1. Introduction

Formerly known as the National Achievement Survey (NAS), PARAKH Rashtriya Sarvekshan 2024 is a national-level large-scale assessment to assess and track the performance of India's school education system over time. PARAKH Rashtriya Sarvekshan 2024 is managed by the National Assessment Center, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), which is located within the National Council of Educational Research and Training (NCERT) and under supervision of the Ministry of Education (MoE). PARAKH Rashtriya Sarvekshan 2024 will offer in-depth insights into India's educational achievements and advancements. In particular, PARAKH Rashtriya Sarvekshan 2024 will be uniquely tailored to align with the objectives outlined in the National Education Policy (NEP) 2020. Furthermore, PARAKH Rashtriya Sarvekshan 2024 will incorporate modifications to the previous NAS and lay a foundation for a new trendline of educational achievement data suited to address contemporary educational needs and goals of India across the country and around the world.

This document provides descriptions of the goals of PARAKH Rashtriya Sarvekshan 2024, including its assessment framework and supporting rationale for its design, development, and implementation. More specifically, PARAKH Rashtriya Sarvekshan 2024 targets the assessment of competencies at the end of the foundational, preparatory, and middle stages in Language (all three stages), Mathematics (all stages), The World Around Us (Foundational and Preparatory stages only), Science (Middle stage only), and Social Science (Middle stage only) with the intent to establish a new trend line for future cycles of PARAKH Rashtriya Sarvekshan. Develop a new high-quality large-scale survey assessment aligned with the National Curriculum Framework for Foundational Stage 2022 (NCF-FS 2022) and the National Curriculum Framework for School Education 2023 (NCF-SE 2023) to evaluate students at Classes 3, 6, and 9, after their completion of foundational, preparatory, and middle stages. The assessment will be in line with the objectives of NEP 2020.

While PARAKH Rashtriya Sarvekshan 2024 is underpinned by the NCF-FS 2022 and NCF-SE 2023 frameworks, distinguishing it from its predecessor NAS 2021, a comprehensive concordance analysis could determine whether trends between NAS 2021 and PARAKH Rashtriya Sarvekshan 2024 may be established.

The current assessment framework document for PARAKH Rashtriya Sarvekshan 2024 is outlined as follows. In Section 2, the integration of PARAKH Rashtriya Sarvekshan 2024 with other

frameworks is discussed such as the global proficiency framework developed by, among others, the UNESCO Institute of Statistics. In the third section, differences between PARAKH Rashtriya Sarvekshan 2024 and its predecessor NAS are summarized. This is followed by a design overview in Section 4. In Section 5, the assessment framework is laid out and the selected, assessable competencies are described for the foundational, preparatory, and middle stages based on the NCF-FS 2022 and NCF-SE 2023 frameworks. Then, Section 6 describes the booklet designs for the main study in Classes 3, 6, and 9, which is followed by the details concerning questionnaire design and development. Finally, the timelines of PARAKH Rashtriya Sarvekshan 2024 are presented in Section 8.

2. Objectives of PARAKH Rashtriya Sarvekshan 2024

The primary objective of PARAKH Rashtriya Sarvekshan 2024 is to evaluate the effectiveness of India's school education system by assessing competencies at various educational stages. This assessment aims to provide valuable insights into the inputs and processes within the education system that help in improving the educational health of the system. This is aligned with goals of the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) for Foundational Stage 2022 and School Education 2023.

Specific objectives of PARAKH Rashtriya Sarvekshan 2024 are:

- **Assess Student Performance:**
  - Assess the performance of students, who have completed the foundational and primary stages, in Language, Mathematics, and The World Around Us and students at the middle stage in Language, Mathematics, Science, and Social Studies.
- **Compare Performance Across Groups:**
  - Analyze and compare the average performance of students based on:
    - Gender (girls and boys)
    - School Location (rural and urban)
    - School Management (state government, central government, government-aided, and private recognized)
    - Social Groups (General, Scheduled Caste, Scheduled Tribes, Other Backward Classes)

- **Identify Learning Gaps:**
    - Identify key gaps in competencies as prescribed in the NCF Foundational Stage 2022 and the NCF School Education 2023.

- **Examine Influencing Factors:**
    - Identify institutional and contextual factors that impact learning outcomes and achievement.

- **Provide Policy Recommendations:**
    - Provide recommendations for policy development, pedagogical interventions, and budgeting to enhance educational quality and ensure equitable learning opportunities, in accordance with the strategic goals set by the NEP 2020 and the NCF frameworks.

These objectives are designed to generate comprehensive data that supports strategic improvements and aligns with the NEP 2020 and NCF frameworks, fostering a more effective and equitable education system.

3. Integration with Global Frameworks and Initiatives

The objectives of PARAKH Rashtriya Sarvekshan 2024 outlined in the above underscore its commitment to fostering educational excellence on a global scale, guided by alignment with national frameworks, international standards, and collaborative efforts towards meaningful educational assessment, reporting, and human capital development. This section elaborates on the integration of PARAKH Rashtriya Sarvekshan 2024 with other international assessment frameworks and initiatives.

3.1 Key Global Frameworks and Initiatives Shaping School Education and Assessment

The following global frameworks and initiatives play integral roles in shaping educational policies, assessing learners' competencies, and driving progress towards equitable and quality education for all. It is acknowledged that the list below consists of a mix of frameworks and initiatives, but the relation with PARAKH Rashtriya Sarvekshan 2024 is made explicit for each one.

PARAKH Rashtriya Sarvekshan 2024 Assessment Framework

1. **Sustainable Development Goals (SDGs)[1]:**

   - Seventeen global goals that address social, economic, educational, and environmental challenges, adopted by the United Nations in 2015 to be achieved in 2030.

   - These goals include SDG 4, which focuses on ensuring inclusive and equitable quality education for all.

   - SDG 4 provides a framework for monitoring progress towards education-related targets, including literacy and numeracy proficiency.

   - PARAKH Rashtriya Sarvekshan 2024 aims to report on SDG 4 using SDG 4 indicator 4.1.1: "Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex." and SDG 4 indicator 4.1.6 "Administration of a nationally representative learning assessment (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education".[2]

   - PARAKH Rashtriya Sarvekshan 2024 would serve as a national benchmark to report on SDG 4.1.1. To this end, the five eligibility criteria for reporting against SDG 4.1.1 will be employed.[3]

2. **Global Proficiency Framework (GPF)[4]:**

   - Developed by the UNESCO Institute of Statistics (UIS), the U.S. Agency for International Development (USAID), and other partner organizations, including several university professors.
   - Defines proficiency levels in Reading and Mathematics for Grades 2 to 9.
   - Developed collaboratively by specialists with international experience.
   - Serves as a global benchmark for assessing learners' competencies.
   - For PARAKH RSS 2024, the goal is to map the selected competencies from the NCF-FS 2022 and NCF-SE 2023 frameworks onto the relevant competencies from the GPF.

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[1] https://sdgs.un.org/goals

[2] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2020/09/SDG4_indicator_list.pdf

[3] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2023/12/Eligibility-criteria-for-reporting-against-SDG-4.1.1_final.pdf

[4] https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2021/03/Global-Proficiency-Framework-Reading.pdf

3. **Human Capital Index (HCI)[5]:**

- Developed by the World Bank to highlight how improvements in education (and health) outcomes affect a countries' next generation.

- Measures the extent to which countries leverage human capital for economic growth.

- Highlights the importance of investing in quality education for sustainable development.

- The education component of the HCI combines education (expected years of school) and learning (learning-adjusted years of school).

- The learning component is estimated using harmonized test scores from large-scale educational survey assessments (e.g., PISA, PIRLS, TIMSS).

4. **Global Alliance to Monitor Learning (GAML)[6]:**

- Developed by UIS.

- Facilitates benchmarking of minimum proficiency levels across assessments.

- Compares proficiency levels in reading and mathematics globally.

- Supports monitoring progress towards educational goals, including SDGs.

- PARAKH Rashtriya Sarvekshan 2024 will be linked to the GAML framework to establish minimum proficiency benchmarks, fostering internationally comparable measures for educational reporting.

The Global Proficiency Framework (GPF) provides a structured approach to defining proficiency levels in Reading and Mathematics for grades 2 to 9 via its four Global Proficiency Levels (GPLs). Specifically, the "meets minimum proficiency" category within the GPF directly aligns with the SDG 4.1.1 indicators. Detailed tables within the GPF offer insights into expected skills and competencies, facilitating informed decision-making for policymakers and educators. Additionally, the Global Proficiency Descriptors (GPDs) in the framework serve as a fundamental tool for aligning assessments worldwide with SDGs and other global indicators, ensuring all learners reach minimum proficiency in Reading and Mathematics.

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[5] https://hdr.undp.org/data-center/human-development-index#/indicies/HDI

[6] https://gaml.uis.unesco.org/

4. Differences Between PARAKH Rashtriya Sarvekshan 2024 and NAS 2021

4.1 Review of NAS 2021 Design

In NAS 2021, the design for Class 3 was such that each learner took all three subjects: Language, Mathematics, and Environmental Studies (EVS). The design, shown in Table 1, contained four booklets of each 47 items (15 language, 17 mathematics, and 15 EVS). Each booklet had 10 (language and EVS) or 12 (mathematics) new items and 5 anchor items. This design resulted in a total of 45 unique items for language and EVS, and a total of 53 unique items for mathematics. Learners were randomly administered one of the four booklets and the duration of the assessment was 90 minutes.

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Table 1: NAS 2021 Booklet Design for Class 3.

Booklet	Section 1	Section 2	Section 3	Number of Items
1	L: 10 + 5[1]	M: 12 + 5	E: 10 + 5	47
2	E: 10 + 5	L: 10 + 5	M: 12 + 5	47
3	M: 12 + 5	E: 10 + 5	L: 10 + 5	47
4	E: 10 + 5	M: 12 + 5	L: 10 + 5	47
L = Language, M = Mathematics, E = Environmental Studies				
[1] The summation means 10 unique + 5 anchor items				

In NAS 2021, the design for Class 5 was similar to that of Class 3, except that the four booklets contained 53 instead of 47 items (L: 10 + 5, M: 15 + 5; E: 13 + 5). This resulted in a total of 45 unique items for language, 65 for mathematics, and 57 for EVS. Again, learners were administered one of the four booklets using a spiral design and the duration was 90 minutes. Given the similarities to the Class 3 design, the same two comments mentioned above apply.

For Class 8 in NAS 2021, the design was different from the designs for Classes 3 and 5 since four instead of three subjects were assessed: language, mathematics, science, and social science. Table 2 shows the design, which consisted of four booklets of each 60 items. Learners were assessed on two of the four subjects with 30 items for each subject. This design resulted in a total of 54 unique items for each subject. Learners were randomly administered one of the four booklets and the duration of the assessment was 120 minutes.

Table 2: NAS 2021 Booklet Design for Class 8.

Booklet	Section 1	Section 2	Number of Items
1	L: 24 + 6[1]	M: 24 + 6	60
2	M: 24 + 6	SST: 24 + 6	60
3	SC: 24 + 6	L: 24 + 6	60
4	SST: 24 + 6	SC: 24 + 6	60
L = Language; M = Mathematics, SC = Science, SST = Social Science [1] The summation means 24 unique + 6 anchor items			

The NAS 2021 design for Class 10 was similar to that of Class 8, except that there were five booklets and five subjects: Modern Indian Language (MIL), Mathematics, Science, Social Science, and English (EN). The booklets consisted of 70 instead of 60 items (28 new + 7 anchor items per subject). This resulted in a total of 63 unique items for each subject.

4.2 Design Innovations for PARAKH Rashtriya Sarvekshan 2024

Given the review of the NAS 2021 design in the previous sections, two major innovations for the PARAKH Rashtriya Sarvekshan 2024 are to be implemented.

The first enhancement for PARAKH Rashtriya Sarvekshan 2024 compared to NAS 2021 is to make use of balanced incomplete block (BIB) designs. BIB designs have a long history in combinatorial mathematics and the design of experiments (Fisher, 1935; Bose, 1939). These designs are highly efficient for the estimation of summary statistics (e.g., means). One of the first major applications of BIB designs in educational assessment was in the National Assessment of Educational Progress (NAEP; Messick,

Beaton, Lord, 1983; Knapp, 1968). Since then, BIB designs have been commonly used in many large-scale survey assessments, including NAEP, PISA, PIRLS, TIMSS, and many others. Such designs are also referred to as matrix sampling designs or, in case of the assessment of multiple subjects such as in PISA, multiple matrix sampling designs (Frey et al., 2009; Rutkowski et al., 2014).

The aim for PARAKH Rashtriya Sarvekshan 2024 is to make use of BIB designs. For example, for the Class 3 Language assessment, if the 45 items are distributed across 9 blocks and each booklet contains three blocks, then 12 booklets would be required to have a fully balanced BIB design. However, implementing 12 booklets in the PARAKH Rashtriya Sarvekshan 2024 presents significant challenges due to various factors, including translation, verification, printing, and distribution. Firstly, translating test booklets into multiple languages, especially considering the diverse linguistic landscape of India, where PARAKH Rashtriya Sarvekshan 2024 will be conducted in 20 different languages, is a time-consuming and resource-intensive process. Ensuring accurate translations that effectively convey the intended meaning and maintain consistency across all versions is essential. Additionally, the printing process for a larger number of different booklets requires meticulous attention to detail to avoid errors and discrepancies, further complicating the production timeline. Moreover, distributing numerous booklets to schools (sometimes in multiple languages within the same school) across the country necessitates efficient coordination and logistics management to ensure timely delivery and correct distribution to all participating students. All large-scale assessments such as PARAKH Rashtriya Sarvekshan 2024 are confronted to such challenges. While optimality is desired, it is common practice to implement designs that balance statistical optimality with implementation practicality. Furthermore, such designs still allow the production of high-quality results. Section 3 contains more detailed descriptions of the proposed PARAKH Rashtriya Sarvekshan 2024 designs.
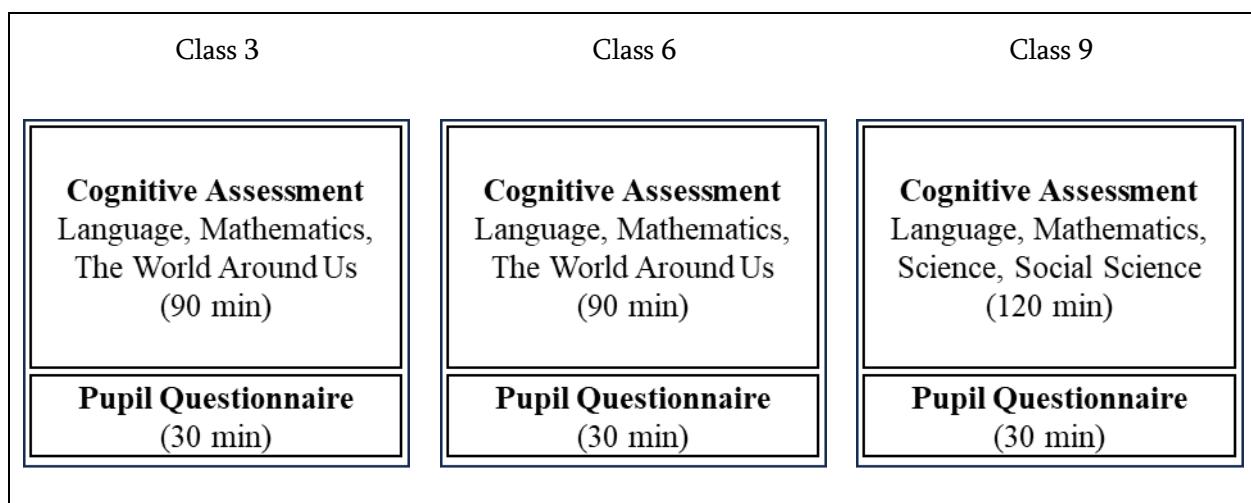
It should be noted that linking PARAKH Rashtriya Sarvekshan 2024 to previous cycles, notably NAS 2021, is not the core focus. An inventory of NAS 2021 items showed that many items either do not fit the new framework NCF-SE 2023 or need significant changes (e.g., in the item stem or in the response options). More importantly, it is not without risk if a link with NAS 2021 is created based on small numbers of items that are either not representative of the old framework (i.e., focusing on learning outcomes) or not of the new framework (i.e., focusing on competencies). For example, if items function differently across cycles, this can lead to unexpected and inconsistent results in trend estimates.

The second major difference for PARAKH Rashtriya Sarvekshan 2024 is the use of plausible values (PVs, see e.g., von Davier, Gonzalez, & Mislevy, 2009) for reporting results. Although weighted maximum likelihood estimates (WLEs) were used to report the results for NAS 2021, PVs are more commonly used in large-scale survey assessments (e.g., PVs are used in PISA, PIRLS, TIMSS, and NAEP). Technically, PVs are multiple imputations drawn from students' posterior distributions of proficiency given their item responses and background variables (Wu, 2005; Marsman, Maris, Bechger, & Glas, 2016). PVs represent a range of proficiencies that a student might reasonably have, and therefore capture the uncertainty of the assessment. An advantage of PVs is that they can be used in subsequent analyses for reporting at the group level, but also for relating proficiency to background variables. Together with sampling weights, PVs are also typically used to estimate variances of the reported statistics.

5. Design Overview for PARAKH Rashtriya Sarvekshan 2024

In PARAKH Rashtriya Sarvekshan 2024 the testing time for measuring the achievement in Language, Mathematics, and The World Around Us (TWAU) in Classes 3 and 6 will be 90 minutes, and testing time for measuring the achievement in Language, Mathematics, Science, and Social Science in Class 9 will be 120 minutes. In addition, a 30-minute Pupil Questionnaire (PQ) will be administered for each class. Figure 1 shows the PARAKH Rashtriya Sarvekshan 2024 main survey design overview for Classes 3, 6, and 9.

Figure 1. PARAKH Rashtriya Sarvekshan 2024 Main Survey Design Overview.

Class 3	Class 6	Class 9
Cognitive Assessment Language, Mathematics, The World Around Us (90 min)	**Cognitive Assessment** Language, Mathematics, The World Around Us (90 min)	**Cognitive Assessment** Language, Mathematics, Science, Social Science (120 min)
Pupil Questionnaire (30 min)	**Pupil Questionnaire** (30 min)	**Pupil Questionnaire** (30 min)

6. Assessment Framework and Competencies

As noted, Rastriya PARAKH will assess competencies at the end of each learning stage described in the national curricular frameworks NCF-FS 2022 and NCF-SE 2023. These frameworks describe curricular goals and the associated competencies for the foundational, preparatory, and middle stages. In this section, the competencies that will be measured through the cognitive assessments are presented for each class. Furthermore, the extent to which the competencies align with relevant competencies from the Global Proficiency Framework (GPF) will be described as well.

In reviewing the full range of competency statements presented in the NCF, only those competencies that could readily yield evidence of a learner's possession of a particular competency via multiple-choice questions were selected for assessment in PARAKH Rashtriya Sarvekshan Sarvekshan2024. Other competencies, while important, were not selected for PARAKH Rashtriya Sarvekshan 2024 primarily for two reasons:

- The competency statement was entirely focused on a situation or context that had requirements outside the scope of a paper-and pencil test (e.g., ability to distinguish among different sounds).
- The competency statement was entirely focused on an activity, inclination, disposition, or work product that was not reproducible in multiple-choice format (e.g., the tendency to show kindness).

The list of competencies not selected for the survey is provided in the Annexure.

6.1 Assessment Framework for End of Foundational Stage (Assessed in Class 3)

At the end of the Foundational stage, learners will be evaluated in three subjects: Mathematics, Language, and The World Around Us. The introduction to The World Around Us takes place during the Preparatory stage and the learners will already have been exposed to it for some months by the time of the survey in November 2024. PARAKH Rashtriya Sarvekshan 2024 for the Foundational stage will assess students' foundational skills in The World Around Us, albeit through the medium of Mathematics and Language.

For the subject of Language, Table 3 shows the two selected competencies for Class 3 at the end of the foundational stage. CG-10 is "Children develop fluency in reading and writing in Language 1 (L1)". Only competencies that can be assessed by means of a multiple-choice (MC) response format have been chosen. Certain competencies adhering to listening, speaking, and writing skills cannot

be assessed with this format (e.g., C-9.1: Listens to and appreciates simple songs, rhymes, and poems; C-10.8: Writes a paragraph to express their understanding and experiences). In PARAKH Rashtriya Sarvekshan 2024, 13% (2/15) of the competencies from the Language and Literacy Development domain at the Foundational Stage will be assessed in PARAKH Rashtriya Sarvekshan 2024. The last column of Table 3 shows the alignment with the GPF. The selected competencies for PARAKH Rashtriya Sarvekshan 2024 can be aligned to 50% (1/2) of the sub-constructs of the Global Proficiency Descriptors for Reading at Grade 2.

Table 3. Selected Competencies for Class 3 Language (Foundational Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	Alignment with GPF (Reading)
CG-10	C-10.5	Reads short stories and comprehends their meaning - by identifying characters, storyline and what the author wants to say - on their own	R1.2 Retrieve explicit information in a grade-level text by synonymous word matching
CG-10	C-10.7	Reads and comprehends the meaning of short news items, instructions and recipes, and publicity material	R1.2 Retrieve explicit information in a grade-level text by synonymous word matching

For the subject of Mathematics, Table 4 presents the ten selected competencies for Class 3 at the end of the foundational stage. In the NCF-SE 2023, CG-8 is defined as "Children develop mathematical understanding and abilities to recognize the world through quantities, shapes, and measure". Again, not all competencies can be assessed because of the MCQ format (e.g., CG-8.3: Counts up to 99 both forwards and backwards and in groups of 10s and 20s). In addition, some competencies automatically cover other competencies within the same domain (example needed). So, in PARAKH Rashtriya Sarvekshan 2024 71% (10/14) from the Cognitive Development domain. The last column in the table shows that the selected competencies have been aligned to 100% (10/10) of the sub-constructs of the global proficiency descriptors for mathematics at Grade 2.

Table 4. Selected Competencies for Class 3 Mathematics (Foundational Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct)
CG-8	C-8.1	Sorts objects into groups and sub-groups based on more than one property	S1.1 Retrieve and interpret data presented in displays
CG-8	C-8.2	Identifies and extends simple patterns in their surroundings, shapes, and numbers	N1.1-Identify and count in whole numbers, and identify their relative magnitude A1.1 -Recognize, describe, extend, and generate patterns
CG-8	C-8.4	Arranges numbers up to 99 in ascending and descending order	N1.1-Identify and count in whole numbers, and identify their relative magnitude
CG-8	C-8.5	Recognises and uses numerals to represent quantities up to 99 with the understanding of decimal place value system	N1.1-Identify and count in whole numbers, and identify their relative magnitude
CG-8	C-8.6	Performs addition and subtraction of 2-digit numbers fluently using flexible strategies of composition and decomposition of both numerical and word problems	N1.2- Represent whole numbers in equivalent ways, N1.4 Solve real-world problems involving whole numbers -, A3.2- Demonstrate an understanding of equivalency
CG-8	C-8.7	Recognises multiplication as repeated addition and division as equal sharing	N1.3-Solve operations using whole numbers

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct)
CG-8	C-8.9	Selects appropriate tools and units to perform simple measurements of length, weight, and volume of objects in their immediate environment	M1.1 -Use non-standard and standard units to measure, compare, and order
CG-8	C-8.10	Performs simple measurements of time in minutes, hours, day, weeks, and months	M1.2- Solve problems involving measurement, M2.2-Solve problems involving time
CG-8	C-8.11	Performs simple transactions using money up to INR 100	M3.1-Use different currency units to create amounts
CG-8	C-8.13	Formulates and solves simple mathematical problems related to quantities, shapes, space, and measurements	G1.1-Recognize and describe shapes and figures, G2.1- Compose and decompose shapes and figures, G3.1-Describe the position and direction of objects in space

Table 5 displays the ten selected competencies for the subject The World Around Us (TWAU) for Class 3 after the Foundational Stage. CG-1 is defined as "Children develop habits that keep them healthy and safe"; CG-2 as "Children develop sharpness in sensorial perceptions"; CG-4 as "Children develop emotional intelligence, i.e., the ability to understand and manage their own emotions, and respond positively to social norms"; and CG-7 as "Children make sense of world around through observation and logical thinking".

Table 5. Selected Competencies for Class 3 The World Around Us (Foundational Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-1	C-1.1	Shows a liking for and understanding of nutritious food and does not waste food
CG-1	C-1.5	Shows awareness of safety in movements (e.g., walking, running, cycling) and acts appropriately
CG-2	C-2.1	Differentiates between shapes, colours, and their shades
CG-2	C-2.2	Develops visual memory for symbols and representations
CG-7	C-7.1	Observes and understands different categories of objects and the relationships between them
CG-7	C-7.2	Observes and understands cause and effect relationships in nature by forming simple hypotheses and uses observations to explain their hypotheses
CG-7	C-7.3	Uses appropriate tools and technology in daily life situations and for learning

6.2 Assessment Framework for End of Preparatory Stage (Assessed in Class 6)

Table 6 shows the five selected competencies for the subject of Language for Class 6 at the end of the preparatory stage. CG-2 is defined as "Develops the ability to read with comprehension by gaining a basic understanding of different forms of familiar and unfamiliar texts (such as prose and poetry)". Again, competencies relating to listening, speaking, and writing skills cannot be assessed with the MCQ format (e.g., C-1.1: "Converses fluently and meaningfully in different contexts"). In PARAKH Rashtriya Sarvekshan 2024, 13% (2/15) of the competencies from the domain of Language Education at the end of the Preparatory Stage will be assessed in PARAKH Rashtriya Sarvekshan

2024. The last column of Table 3 shows the alignment with the GPF. The selected competencies for PARAKH Rashtriya Sarvekshan 2024 can be aligned to 62.5% (5/8) of the sub-constructs of the Global Proficiency Descriptors for Reading at Grade 5.

Table 6. Selected Competencies for Class 6 Language (Preparatory Stage).

Curricular goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
CG-2	C-2.1	Applies varied comprehension strategies (inferring, predicting, visualising) to understand different texts	R2.2 Make inferences in a grade-level text
CG-2	C-2.2	Understands main ideas and draws essential conclusions from the material read	R1.3 Retrieve explicit information in a grade-level text by synonymous word matching R2.3 Identify the main and secondary ideas in a grade-level text R3.1 Identify the purpose and audience of a text R3.2 Evaluate the text with justification

In Table 7, the ten selected competencies for the subject of Mathematics for Class 6 at the end of the preparatory stage are displayed. Here, CG-1 is defined as "Understands numbers (counting numbers and fractions), represents whole numbers using the Indian place value system, understands and carries out the four basic operations with whole numbers, and discovers and recognizes patterns in number sequences", CG-2 as "Analyses the characteristics and properties of two – and three-dimensional geometric shapes, specifies locations and describes spatial relationships, and recognises and creates shapes that have symmetry", CG-3 as "Understands measurable attributes of objects and the units, systems, and processes of such measurement, including those related to distance, length, weight, area, volume, and time using non-standard and standard units", and CG-4 as "Develops problem-solving skills with procedural fluency to solve mathematical puzzles as well as daily-life problems, and as a step towards developing computational thinking". So, in PARAKH Rashtriya Sarvekshan 2024, 53% (10/19) from the Mathematics learning Standard. The last column in the table shows that the selected competencies

have been aligned to 100% (10/10) of the sub-constructs of the global proficiency descriptors for mathematics at Grade 5.

Table 7. Selected Competencies for Class 6 Mathematics (Preparatory Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	Alignment with GPF (Mathematics)
CG-1	C-1.1	Represents numbers using the place value structure of the Indian number system, compares whole numbers, and knows and can read the names of very large numbers	N1.1 Identify and count in whole numbers, and identify their relative Magnitude N1.3 Solve operations using whole numbers
CG-1	C-1.2	Represents and compares commonly used fractions in daily life(such as ½, ¼) as parts of unit wholes, as locations on number lines and as divisions of whole numbers	N2.2 Solve operations using fractions N2.3 Solve real-world problems involving fractions N3.2 Represent decimals in equivalent ways (including fractions and percentages)
CG-1	C-1.3	Understands and visualises arithmetic operations and the relationships among them, knows addition and multiplication tables at least up to 10x10 (pahade) and applies the four basic operations on whole numbers to solve daily life problems	N1.3 Solve operations using whole numbers
CG-1	C-1.4	Recognises, describes, and extends simple number patterns such as odd numbers, even numbers, square numbers, cubes, powers of 2, powers of 10, and Virahanka–Fibonacci numbers.	N1.4 Solve real-world problems involving whole numbers

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	Alignment with GPF (Mathematics)
CG-2	C-2.2	Describes location and movement using both common language and mathematical vocabulary; understands the notion of map (najri naksha)	G3.1 Describe the position and direction of objects in space
CG-2	C-2.4	Discovers, recognises, describes, and extends patterns in 2D and 3D shapes	G1.1 Recognize and describe shapes and figures G2.1 Compose and decompose shapes and figures A1.1 Recognize, describe, extend, and generate patterns
CG-3	C-3.3	Carries out simple unit conversions, such as from centimetres to metres, within a system of measurement	M1.2 Solve problems involving measurement
CG-3	C-3.5	Devises strategies for estimating the distance, length, time, perimeter (for regular and irregular shapes), area (for regular and irregular shapes), weight, and volume and verifies the same using standard units	M1.1 Use non-standard and standard units to measure, compare, and order M1.2 Solve problems involving measurement
CG-4	C-4.1	Solves puzzles and daily-life problems involving one or more operations on whole numbers (including word puzzles and puzzles from 'recreational' areas, such as the construction of magic squares)	S1.1 Retrieve and interpret data presented in displays
CG-4	C-4.3	Selects appropriate methods and tools for computing with whole numbers, such as mental computation, estimation, or paper pencil calculation, in accordance with the context	M1.2 Solve problems involving measurement M1.1 Use non-standard and standard units to measure, compare, and order

Table 8 shows the thirteen selected competencies for Class 6 The World Around Us at the end of the Preparatory Stage. TWAU is linked to the interdisciplinary area The World Around Us in the NCF-SE 2023, which is intended to "help students observe, engage with, and understand their immediate social and natural environment" (NCF-SE 2023, p. 386). In the table, CG-1 is defined as "Explores and engages with the natural and socio-cultural environment in their surroundings", CG-2 as "Understands the interdependence in their environment through observation and experiences, developing the basis for appreciation of the idea of 'Vasudhaiva Kutumbakam'", CG-3 as "Explains how to ensure the safety of self and others in different (normal as well as emergency) situations", CG-4 as "Develops sensitivity towards social and natural environment", CG-5 as "Develops the ability to read and interpret simple maps", and CG-7 as "Gains foundational familiarity with basic concepts and methods from the natural sciences (life sciences, physical sciences, and earth and space sciences) and engineering".

Table 8. Selected Competencies for Class 6 The World Around Us (Preparatory Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-1	C-1.1	Observes and identifies the natural (insects, plants, birds, animals, geographical features, sun and moon, stars, planets, natural resources) and social (houses, relationships) components in their immediate environment
CG-1	C-1.3	Asks questions and makes predictions about simple patterns (season change, food chain, phases of the moon, movement of stars and planets, shapes of trees, plants, leaves, and flowers, rituals, celebrations) observed in the immediate environment
CG-1	C-1.4	Explains the functioning of local institutions (family, school, panchayat) bank/post office, market, and in different forms (story, drawing, tabulating data, reports), and analyses their roles

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-2	C-2.1	Identifies natural and humanmade systems that support their lives (water supply, water cycle, river flow systems, seasons, life cycle of plants and animals, food, household items, transport, communication, electricity in the home)
CG-2	C-2.2	Describes the relationship between the natural environment and cultural practices in their immediate environment (nature of work, food, festivals, traditions)
CG-3	C-3.1	Describes the basic safety needs and protection (health and hygiene, food, water, shelter, precautions, awareness of emergency situations, abuse, and unsafe situations) of humans, birds, and animals
CG-3	C-3.2	Discusses how to prepare for emergency situations (smoke, fire, small injuries, burns, electrical safety, unseasonal rains, fallen trees) based on discussions with family and community, or personal experiences
CG-4	C-4.1	Observes and describes diversity among plants, and birds and animals in their immediate environment (shape, sounds, food habits, growth, habitat)
CG-4	C-4.3	Describes usage of natural resources in their immediate environment
CG-4	C-4.7	Learns about basic social and behavioural norms, values, and dispositions that benefit our social and natural environments and that help our society function smoothly (using dustbins, standing in queues, conserving water, using public transportation, keeping

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
		one's environment clean, always helping others in need regardless of background)
CG-5	C-5.3	Reads simple maps of city, state, and country to identify natural and humanmade features (well, lake, post office, school, hospital) with reference to symbols and directions

Assessment Framework for End of Middle Stage (Assessed in Class 9)Table 9 shows the five testable competencies for Class 9 language at the end of the Middle Stage. For this stage, CG-1 is defined as "Develops the capacity for effective communication using Language skills for description, analysis, and response", CG-2 as "Appreciates the language and literary and cultural heritage in and related to Language by exploring the various forms of literary devices", and CG-3 as "Develops the ability to recognise basic linguistic aspects (word and sentence structure) and use them in oral and written expression".

Table 9. Selected Competencies for Class 9 Language (Middle Stage).

Curricular goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
CG-1	C-1.1	Identifies main points and summarises from a careful listening or reading of the text (news articles, reports, editorials)	R1.2 Retrieve explicit information in a grade-level text by direct- or close-word matching R1.3 Retrieve explicit information in a grade-level text by synonymous word matching R2.3 Identify the main and secondary ideas in a grade-level text R3.2 Evaluate the status of claims made in a text R3.4 Evaluate the effectiveness of a text

Curricular goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
			R2.2 Make inferences in a grade-level text
			R3.1 Identify the purpose and audience of a text
			R3.3 Evaluate the status of claims made in a text

Table 10 shows the selected, testable competencies for Mathematics in Class 9 at the end of the middle stage. Here, CG-1 is defined as "Understands numbers and sets of numbers (whole numbers, fractions, integers, rational numbers, and real numbers), looks for patterns, and appreciates relationships between numbers", CG-2 as "Understands the concepts of variable, constant, coefficient, expression, and (one-variable) equation, and uses these concepts to solve meaningful daily-life problems with procedural fluency", CG-3 as "Understands, formulates, and applies properties and theorems regarding simple geometric shapes (2D and 3D)" CG-4 as "Develops understanding of perimeter and area for 2D shapes and uses them to solve day-to-day life problems", and CG-5 as "Collects, organises, represents graphically and in tables), and interprets data/information from daily-life experiences". In PARAKH Rashtriya Sarvekshan 2024, 40% (12/30) from the Mathematics learning standard. The last column in the table shows that the selected competencies have been aligned to 100% (10/10) of the sub-constructs of the global proficiency descriptors for mathematics at Grade 8.

Table 10. Selected Competencies for Class 9 Mathematics (Middle Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
CG-1	C-1.2	Discovers, identifies, and explores patterns in numbers and describes rules for their formation (e.g., multiples of 7, powers of 3, prime numbers), and explains relations between different patterns	A1.1 Recognize, describe, extend, and generate patterns, A2.1 Evaluate, model, and compute with expressions, A3.2 Evaluate, model, and compute with expressions
CG-1	C-1.4	Explores and understands sets of numbers, such as whole numbers, fractions, integers, rational numbers, and real numbers, and their properties, and visualises them on the number line	N1 Whole numbers, N2 Fractions
CG-1	C-1.5	Explores the idea of percentage and applies it to solve problems	N2.1 Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude N2.2 Solve operations using fractions N2.3 Solve real-world problems involving fractions
CG-1	C-1.6	Explores and applies fractions (both as ratios and in decimal form) in daily-life situations	N3.1 Identify and represent decimals using objects, pictures, and symbols,

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
			and identify relative magnitude N3.2 Represent decimals in equivalent ways (including fractions and percentages) N3.3 Solve operations using decimals N3.4 Solve real-world problems involving decimals
CG-2	C-2.2	Extends the representation of a number in the form of a variable or an algebraic expression using a variable	A3.3 Solve equations and inequalities, A3.4 Interpret and evaluate functions
CG-2	C-2.3	Forms algebraic expressions using variables, coefficients, and constants and manipulates them through basic operations	A2.1 Evaluate, model, and compute with expressions, A3.3 Solve equations and inequalities
CG-2	C-2.5	Develops own methods to solve puzzles and problems using algebraic thinking	A3.2 Demonstrate an understanding of equivalency
CG-3	C-3.2	Outlines the properties of lines, angles, triangles, quadrilaterals,	M1.2 Solve problems involving measurement

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
		and polygons and applies them to solve related problems	
CG-3	C-3.5	Understands congruence and similarity as it applies to geometric shapes and identifies similar and congruent triangles	G1 Recognize and describe shapes and figures, G2 Compose and decompose shapes and figures
CG-4	C-4.1	Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes	G1 Recognize and describe shapes and figures
CG-5	C-5.1	Collects, organises, and interprets the data using measures of central tendencies such as average/mean, mode, and median	S1.1 Retrieve and interpret data presented in displays S1.2 Calculate and interpret central tendency
CG-6	C-6.1	Applies both inductive and deductive logic to formulate definitions and conjectures, evaluate and produce convincing arguments/ proofs to turn these definitions and conjectures into theorems or correct statements, particularly	S2.2 Identify permutations and combinations

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)	GPF Sub-construct
		in the areas of algebra, elementary number theory, and geometry	

Table 11 shows the twelve selected competencies for Science in Class 9 at the end of the Middle Stage. In this table, CG-1 refers to "Explores the world of matter and its constituents, properties, and behaviour", CG-2 to "Explores the physical world in scientific and mathematical terms", CG-3 to "Explores the living world in scientific terms", CG-4 to "Understands the components of health, hygiene, and well-being", and CG-7 to "Communicates questions, observations, and conclusions related to Science".

Table 11. Selected Competencies for Class 9 Science (Middle Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-1	C-1.1	Classifies matter based on observable physical (solid, liquid, gas, shape, volume, density, transparent, opaque, translucent, magnetic, non-magnetic, conducting, non-conducting) and chemical (pure, impure; acid, base; metal, non-metal; element, compound) characteristics
CG-1	C-1.2	Describes changes in matter (physical and chemical) and uses particulate nature to represent the properties of matter and the changes
CG-1	C-1.4	Observes and explains the phenomena caused due to differences in pressure, temperature, and density (e.g., breathing, sinking-floating, water pumps in homes, cooling of things, formation of winds)
CG-2	C-2.1	Describes one-dimensional motion (uniform, nonuniform, horizontal, vertical) using physical measurements (position, speed, and changes in speed) through mathematical and diagrammatic representations

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-2	C-2.2	Describes how electricity works through manipulating different elements in simple circuits and demonstrates the heating and magnetic effects of electricity
CG-2	C-2.3	Describes the properties of a magnet (natural and artificial; Earth as a magnet)
CG-2	C-2.4	Demonstrates rectilinear propagation of light from different sources (natural, artificial, reflecting surfaces), verifies the laws of reflection through manipulation of light sources and objects and the use of apparatus and artefacts (such as plane and curved mirrors, pinhole camera, kaleidoscope, periscope)
CG-3	C-3.1	Describes the diversity of living things observed in the natural surroundings (insects, earthworms, snails, birds, mammals, reptiles, spiders, diverse plants, and fungi), including at a smaller scale (microscopic organisms)
CG-3	C-3.2	Distinguishes the characteristics of living organisms (need for nutrition, growth and development, need for respiration, response to stimuli, reproduction, excretion, cellular organisation) from non-living things
CG-4	C-4.1	Undertakes a nutrition-based analysis of food components with special reference to Indian culinary practices and modern understanding of nutrition, and explains the effect of nutrition on health
CG-4	C-4.3	Describes biological changes (growth, hormonal) during adolescence, and measures to ensure overall well-being
CG-7	C-7.3	Represents real world events and relationships through diagrams and simple mathematical representations

In Table 12, the 15 out of 22 selected, testable competencies are displayed for Social Science in Class 9 at the end of the Middle Stage.

Table 12. Selected Competencies for Class 9 Social Science (Middle Stage).

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-1	C-1.1	Collects and interprets multiple sources of information (primary and secondary) to understand the historical, cultural, geographical, and socio-political aspects of human life
CG-1	C-1.2	Represents and analyses data related to various aspects of human life given in the form of text, tables, charts, diagrams, and maps
CG-2	C-2.2	Explains and analyses major changes in the past and their impact on society.
CG-2	C-2.3	Recognises elements of the continued prevalence of certain beliefs, relationships, practices, and activities in human society, notwithstanding major changes in society
CG-3	C-3.1	Analyses the effect of various changes in early human society from nomadism to settled life and early civilisation (such as the emergence of agriculture, changes in food habits, basic technologies like construction, transport, pottery, metallurgy), and changes in human habitation, family structures and relationships, the nature of work, people's sociocultural beliefs and concepts over time (e.g., ahimsa, and the fallout of major wars or invasions) that significantly impacted human societies
CG-7	C-7.1	Explains India's unity in diversity by recognising commonalities in its rich and diverse cultural elements, languages, art, philosophical ideas, values, clothing, cuisines, traditions, festivals, trade, commerce, and health practices including ayurveda and yogac.
CG-7	C-7.2	Discovers the topographical diversity of the Indian landmass – from the semi-arid zone in the west and the areas of heavy rains in the north-east to the long coastal areas in the south and the snow-clad mountains in the north, as well as the rich biodiversity of the country

Curricular Goal (NCF)	Competency (NCF)	Description (NCF)
CG-6	C-6.1	Explains key natural phenomena such as climate, weather, ocean cycles, soil formation, the flow of rivers, and how they are spatially distributed
CG-6	C-6.2	Identifies the distribution of resources such as water, agriculture, raw materials, and services across geographies
CG-6	C-6.3	Analyses Indian perspectives on and efforts towards conservation and sustainability in society, and advocates the importance of the same, and what more needs to be done in these directions including in the context of global climate change
CG-6	C-6.4	Correlates the existence of different patterns of livelihoods with the different types of landforms, availability of resources, and climatic conditions (in local, regional, national, and global contexts).
CG-4	C-4.2	Assesses the influence of social, cultural, and political institutions on an individual/ group/ community/ society in general
CG-8	C-8.2	Explains the process of formation of the Indian Constitution and understands the ideas and ideals of the Indian national movement enshrined in it as well as those drawn from India's civilisational heritage
CG-8	C-8.3	Explains the working of the three tiers of local self-government and appreciates its significance in upholding democracy at the grassroot level
CG-9	C-9.1	Explains the key elements of trade and commerce (commodity, production, consumption, and capital) and its impact on individual life and society

7. Booklet Design and Item Development

7.1 Booklet Design for Class 3

For PARAKH Rashtriya Sarvekshan 2024 Class 3, the proposal is that the main survey design consist of six booklets where each student takes all three subjects: Language, Math, and TWAU. Furthermore, each subject follows a BIB design, so that each item appears in two booklets, and each block of questions on a particular subject appears twice in each position. These features mitigate

position effects, ensure broader content coverage, and strengthen linking. Table 13 shows the design for Class 3. In each booklet, each subject is assessed by means of 15 items. The total number of items in a booklet is 45. Also, the total number of items per subject is 45 (each item appears in two booklets, so (6 x 15) / 2 = 45 items per subject). It should be noted, however, that with this design, not all items appear in all positions. For example, the first section of booklets 1 and 2 comprise 30 Language items, which means that 15 Language items are not in the first section. The same holds for the other subjects and this is due to the fact that the number of booklets is limited due to operational constraints.

Table 13. Booklet Design for Main Survey for Class 3.

Grade 3	Section 1	Section 2	Section 3	Total Items
Booklet 1	L: 15	M: 15	W: 15	45
Booklet 2	L: 15	W: 15	M: 15	45
Booklet 3	M: 15	L: 15	W: 15	45
Booklet 4	M: 15	W: 15	L: 15	45
Booklet 5	W: 15	L: 15	M: 15	45
Booklet 6	W: 15	M: 15	L: 15	45
L = Language, M = Mathematics, W = The World Around Us				

Table 14 shows an example BIB design for the Language sections of the booklet design for the main for Class 3. In this design, each booklet consists of three language blocks and each block appears in two booklets. As noted, the design below is not fully efficient, because only 18 out of 36 pairs of blocks can be observed with 6 booklets. Since there are five competencies (see Table 3), each block can contain one item of each competency. The nine blocks can be assembled using automated test assembly (ATA) methods (e.g., van der Linden, 2005) to optimally balance the psychometric properties obtained from the pilot (e.g., difficulty) and content constraints (e.g., competency, number of words, answer key).

Table 14. Example BIB Design for Language Sections in Booklet Design for Main Survey for Class 3.

Grade 3	L1	L2	L3	L4	L5	L6	L7	L8	L9
Booklet 1		X				X			X
Booklet 2	X						X	X	
Booklet 3			X	X	X				
Booklet 4			X					X	X
Booklet 5					X	X	X		
Booklet 6	X	X		X					

Using an overhead factor of 2, this means that 90 items per subject need to be developed by teachers. After the pilot, the 45 best items are selected based on content review, psychometric features, and alignment with the assessment framework to assemble the blocks for the design of the Main Survey. For Language, Mathematics, and TWAU, respectively, two, ten, and ten competencies were selected for PARAKH Rashtriya Sarvekshan 2024 and, to the extent possible, uniform distributions of items across the competencies will be used. Final tweaks to the Main Survey booklet designs may be needed based on the results of the pilot.

7.2 Booklet Design for Class 6

For PARAKH Rashtriya Sarvekshan 2024 Class 6, the design is highly similar to that of Class 3: The Main Survey design consists of six booklets where each student takes all three subjects: Language, Math, and TWAU. Again, each subject follows a BIB design, so that each item appears in two booklets, and each subject appears twice in each position (see Table 15. Table 13 shows the design for Class 3. In each booklet, Language is assessed by means of 15 items whereas Mathematics and The World Around Us are assessed by means of 18 items each. The total number of items in a booklet is 51. Also, the total number of items per subject is 45 (Language) and 54 (Mathematics and TWAU) and each item appears in two booklets (e.g., 6 x 15 / 2 = 45 items for Language and 6 x 18 / 2 = 54 items for Mathematics and TWAU).

Table 15. Booklet Design for Main Survey for Class 6.

Grade 3	Section 1	Section 2	Section 3	Total Items
Booklet 1	L: 15	M: 18	W: 18	51
Booklet 2	L: 15	W: 18	M: 18	51
Booklet 3	M: 18	L: 18	W: 18	51
Booklet 4	M: 18	W: 18	L: 15	51
Booklet 5	W: 18	L: 15	M: 18	51
Booklet 6	W: 18	M: 18	L: 15	51
L = Language, M = Mathematics, W = The World Around Us				

For Language, sets of 5 questions per reading passage are to be maintained and so, learners will attempt 15 items as compared to 18 items in Mathematics and The World Around Us.

Using an overhead factor of 2, this means that 90 items are needed for Language and 108 items are needed for Mathematics and TWAU. The rest is similar to Class 3.

7.3 Booklet Design for Class 9

For Class 9, the proposal is that the Main Survey design consist of eight booklets. The goal is to let each student take three out of the four subjects: Language, Mathematics, Science, and Social Science. Also, each item is to appear in two booklets and each of the four subjects is to appear twice in each of three positions in the booklet. Table 16 shows the resulting BIB design for 4 subjects, 8 booklets, and 3 subjects per booklet (note that the blocks here are the four subjects). The D-efficiency of this design is 100% with each subject appearing in 6 booklets and each pair of subjects appearing in 4 booklets. Note that 20 items per subject will be used in PARAKH Rashtriya Sarvekshan 2024, compared to 30 items per subject in NAS 2021. However, students will now be assessed on three instead of two subjects in NAS 2021. Furthermore, the use of PVs allows for incorporating the correlations between the different subjects, thereby enhancing the measurement precision (i.e., the reliability). Also, the total number of items per booklets remains at 60.

Table 16. Booklet Design for Main Survey for Class 9.

Grade 9	Section 1	Section 2	Section 3	Total Items
Booklet 1	L: 20	SC: 20	SO: 20	60
Booklet 2	M: 20	SC: 20	SO: 20	60
Booklet 3	SC: 20	SO: 20	M: 20	60
Booklet 4	SC: 20	SO: 20	L: 20	60
Booklet 5	SO: 20	M: 20	L: 20	60
Booklet 6	SO: 20	L: 20	M: 20	60
Booklet 7	L: 20	M: 20	SC: 20	60
Booklet 8	M: 20	L:20	SC: 20	60
L = Language, M = Mathematics, SC = Science, SO = Social Science				

Using an overhead factor of 2, this means that 120 items per subject need to be developed for piloting by teachers. Again, a uniform distribution is sought for the competencies.

8. Contextual Questionnaire Design and Development

PARAKH RSS 2024 incorporates contextual components by engaging students, teachers, and school representatives, to explore their educational backgrounds, experiences, and values. To achieve this, three questionnaires will be used: Pupil Questionnaire (PQ), Teacher Questionnaire (TQ), and School Questionnaire (SQ). These tools will gather critical information to inform national policy decisions. The questionnaire will be aligned with the goals and competencies listed in National Curriculum Framework (NCF) 2023.

The development of these questionnaires will build upon previous years' national achievement surveys, improving the quality and relevance of the data while optimizing the response burden on students, teachers, and school representatives. This iterative process includes adding new items, refining existing items, and removing outdated or irrelevant items.

8.1 Key Focus Areas

Within the PQ, TQ, and SQ, items will be designed to gather essential insights into the following key areas:

- Relevance to the Indian Educational Context: Adding relevant information that is critical to the Indian educational landscape.

- Civics and Citizenship Literacy: Evaluating students' knowledge and understanding of civics and citizenship concepts and principles.

- Information Communication Technology (ICT) Proficiency: Measuring students' proficiency and usage of information communication technologies.

- Stage-Appropriate Competencies: Addressing competencies outlined in the NCF 2023 that are not assessed through multiple-choice cognitive tests.

8.2 Contextual Significance

Contextual questionnaires are vital as they provide insights into variables that affect students' learning process. By establishing a standardized dataset of contextual information alongside student performance data, PARAKH RSS 2024 aims to drive effective educational policy development. The background questionnaires delve into the factors influencing learning outcomes, offering a nuanced understanding of the learning environment (Anderson & Morgan, 2008; Bertling & Alegre, 2019).

The insights gained from these questionnaires help educators and policymakers design targeted interventions that can improve educational outcomes by addressing specific contextual challenges.

7.2.1 Content of Contextual Questionnaires

1. Pupil Questionnaire (PQ):
   - Demographic Information: Collects data on gender, age, language used at home, and social groups.
   - Socio-economic Status: Gathers information on parental qualifications, alternative help in studies, and extracurricular activities.
   - Attitudes and Environment: Assesses students' attitudes towards learning, classroom and school environment, and pedagogical practices.

- Civics and Citizenship Literacy: Evaluates students' knowledge and understanding of civics concepts.

- Information and Communication Technology (ICT) Proficiency: Measures students' use and proficiency in information communication technologies.

- SEL/Mental health: Understands the social-emotional intelligence as well as mental wellbeing of students.

2. Teacher Questionnaire (TQ):

- Demographic Information: Includes items about gender, social group, and highest academic and professional qualifications.

- Professional Practices: Focuses on teaching and assessment practices, and opportunities for professional development.

- Classroom Environment: Looks at teachers' attitudes towards teaching, and their classroom and school environment.

- Information and Communication Technology (ICT) Proficiency: Assesses teachers' proficiency and use of information communication technologies.

- Mental health: Gathers insights into the mental wellbeing of teachers.

3. School Questionnaire (SQ):

- Infrastructure and Resources: Collects information about the school's infrastructure and resources.

- Administrative Practices: Examines school policies and administrative practices.

- Holistic Progress Card: Assesses awareness and usage related to holistic progress cards.

- Mental Health: Gathers information about initiatives school undertakes for ensuring mental wellbeing of students and teachers.

7.3 Evolution and Development of Questionnaires

The background questionnaires for PARAKH RSS 2024 will evolve from previous years' National Achievement Surveys. This evolutionary process aims to improve the quality and relevance of the data while considering the response burden on students, teachers and school representatives. Key steps in this process include:

1. Reviewing and Refining Previous Year's NAS Questionnaires:

- Analyzing the effectiveness of previous questionnaires.

- Identifying valuable data points and ineffective items.

- Enhancing the clarity and precision of items to improve response accuracy.

- Simplifying complex items to reduce respondent burden.

- Streamlining the questionnaires to focus on the most pertinent information.

- Removing redundant or irrelevant items.

2. Adding New Topics:

- Introducing new topics based on emerging educational trends and policy needs.

- Ensuring new topics align with the objectives of the NCF 2023 and PARAKH RSS 2024.

7.4 Implementation Strategy

The implementation strategy for the PARAKH Rashtriya Sarvekshan 2024 contextual questionnaires involves several phases:

1. Development Phase:

- Formulate and questionnaire items based on NCF competencies and contextual variables.

- Conduct pilot testing to ensure the reliability and validity of the questionnaires.

2. Administration Phase:

- Distribute PQ, TQ, and SQ to selected schools.

- Provide training for those administering the questionnaires to maintain consistency and accuracy.

3. Analysis Phase:

- Collect and analyze data to identify key trends and insights.

- Compare contextual data with cognitive assessment results to identify factors influencing learning outcomes.

4. Reporting Phase:

- Prepare detailed reports highlighting key findings and policy recommendations.

- Share insights with educational policymakers, stakeholders, and the public to inform national education strategies.

PARAKH Rashtriya Sarvekshan 2024's contextual questionnaires (PQ, TQ, and SQ) aim to capture essential background information and assess competencies critical to understanding the learning

environment. By continually evolving and refining these questionnaires, educational policies can be better tailored to address the needs and challenges faced by students, teachers, and schools across the nation. This framework will help in enhancing the quality and effectiveness of education in India.

9. Reporting and Dissemination of the PARAKH Rashtriya Sarvekshan 2024:

The findings from PARAKH Rashtriya Sarvekshan 2024 are intended to serve a diverse range of stakeholders, necessitating customized reporting to meet the specific needs of each audience. Key stakeholders include policymakers, curriculum developers, education officials at state and district levels, principals and head teachers, teachers, parents, students, the general public, and mass media. Each group requires different levels of detail, and reporting will be tailored accordingly. Currently, it is planned to report PARAKH Rashtriya Sarvekshan 2024 outcomes at national, state, and district levels.

To analyze large-scale assessment data effectively, two primary approaches are utilized: Classical Test Theory (CTT) and Item Response Theory (IRT). These methodologies provide a comprehensive evaluation of student performance through key indicators such as the percentage of correct answers, average scale scores, and the distribution of students across proficiency levels—Below Basic, Basic, Proficient, and Advanced. Comparative analysis is conducted to assess performance differences across gender, social groups, location, and school management types, extending from the national to district levels. This approach helps identify disparities and areas for improvement across various administrative units.

Additionally, contextual variables, such as institutional and environmental factors, are examined to understand their influence on learning outcomes. Factor analysis methods are employed to uncover underlying relationships and patterns among these variables and performance indicators. This thorough analysis not only highlights trends and disparities in educational effectiveness but also elucidates how various factors interact to impact student achievement. The insights gained facilitate the development of targeted interventions and informed policy decisions aimed at enhancing educational quality and equity.

For dissemination, results will be communicated through various channels, including report cards (from national to district levels), mobile apps, dashboards, policy briefs, dissemination workshops, and other communication materials. This multi-channel approach ensures that the findings reach all relevant stakeholders effectively.

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Appendix: Timelines of PARAKH Rashtriya Sarvekshan 2024

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
1.0	Designing and Planning																															
1.1	Constitution of National Steering Committee and Sub-committees- (Ministry of Education: Secretary (Chairperson) Additional Secretary (Co-Chairperson) Director, DoSE&L (Members), DDG-Statistics (Member), Director, NCERT (Member), Joint Director, NCERT (Member), Joint Director: NCERT-	Formulate a National Steering Committee and Sub-committees comprising policymakers, education experts, assessment experts and stakeholders to oversee the design and implementation of the survey.	█																													

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
	CIET (Member), Head PARAKH (Member-Secretary), Representative from NITI Aayog (Member), Representative from UNICEF (Member), Representative from UNESCO (Member), Representative from NIOS (Member), Representative from NCTE (Member), NIC (Member), 2 eminent personalities, working in educational assessment (Member),																															

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S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
	2 members from civil society)		███																													
1.2	Develop internal and external role and responsibility matrix	Define roles and responsibilities for internal and external stakeholders involved in the survey, ensuring clarity, accountability and effective coordination	███																													
1.3	Establish teams for designing and implementing the learning assessment	Form specialized teams responsible for designing assessment tools, managing logistics, conducting training, and overseeing field operations	███																													
1.4	Prepare Budget and identify resources	Develop a detailed budget plan, allocating resources for personnel, training, materials, technology, and other necessary expenses.	███																													

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
1.5	Formulate objectives and purpose and identify innovative activities	Clearly define the objectives and purpose of the PARAKH Rashtriya Sarvekshan 2024 aligned with SDG 4 and NEP 2020, emphasizing innovative activities to improve the quality and relevance of the assessment.	■																													
1.6	Develop technical standards	Establish technical standards to guide assessment activities, ensuring consistency and reliability in data collection and analysis.	■	■																												
1.7	Development of learning assessment portal	Design and develop a user-friendly online portal for efficient data management, communication, and collaboration throughout the survey process.	■	■																												

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
1.8	Risk management planning	Develop strategies to identify, assess, and mitigate potential risks and challenges throughout the survey process	▓	▓																												
2.0	**Designing Assessment Framework**																															
2.1	Review of NAS 2021 assessment framework and recommendations of NAS roundtable	Evaluate the previous NAS assessment framework and incorporate recommendations from stakeholders and roundtable discussions	▓																													
2.2	Develop draft assessment framework	Draft a comprehensive assessment framework outlining the objectives, domains, and competencies to be assessed.	▓																													

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
2.3	Stakeholder consultations	Engage with stakeholders to review the draft framework, gather feedback, and make necessary revisions for alignment with educational priorities and standards.		▓																												
2.4	Finalized assessment framework	Finalize the assessment framework based on stakeholder input, ensuring clarity, validity, and relevance to the educational context.			▓																											
2.5	Development of Item Blueprints	Develop detailed item blueprints to guide item development, ensuring alignment with assessment objectives and standards	▓																													
3.0	**Sampling process**																															
3.1	Develop sampling framework	Design a robust sampling framework considering factors to make it representativeness and valid						▓																								

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
3.2	Review and finalize sampling framework	Review the sampling framework with experts and stakeholders to ensure representativeness and validity, making necessary adjustments as needed.							██																							
3.3	Prepare sampling frame	Compile a comprehensive sampling frame containing a list of schools and students eligible for inclusion in the survey								██																						
3.4	Draw sample	Randomly select samples from the sampling frame based on agreed sampling framework										██																				
3.5	Share sample list with state/UTs	Distribute the sample list to relevant authorities in each state/UT to facilitate coordination and preparation for field activities.												██																		

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
4.0	Development of assessment tools																															
4.1	Competency-based item development workshops	Organized workshops to develop competency-based test items in English and Hindi, involving subject matter experts and educators.	███																													
4.2	Review of test items	Evaluate test items developed during workshops for clarity, validity, and alignment with assessment objectives and standards.	███																													
4.3	Assembly of test booklets for piloting	Pilot test booklets in selected schools to assess item performance, gather feedback, and identify areas for improvement.	███																													

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S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
4.4	Develop background questionaries	Design background questionnaires to collect additional data on student demographics, school characteristics, teacher profile, teaching learning process and other relevant variables.	██																													
4.5	External Review of Items	Solicit feedback from external reviewers and expert committees to ensure the quality and fairness of test items.	██																													
4.6	Piloting of test booklets Round 1 Piloting- Chandigarh, Himachal Pradesh, Haryana, Mizoram, and Nagaland Round 2 Piloting- Kerala, Dadra & Nagar Haveli	Pilot test booklets in selected schools to assess item performance, gather feedback, and identify areas for improvement.		R1				R2		R3																						

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
	and Daman & Diu, Rajasthan, Madhya Pradesh, Maharashtra Round 3 Piloting- Tamil Nadu, Puducherry and Bihar			█				█		█																						
4.7	Analysis of data including differential item functioning (DIF) after piloting	Conduct a comprehensive analysis of piloting data, including examination for differential item functioning (DIF) to identify potential biases in item performance across demographic groups.				█					█																					
4.8	Item content and psychometric reviews and item finalization	Conduct thorough reviews of test items by subject matter experts and psychometricians to evaluate content validity, clarity, and alignment with curriculum standards.					█				█																					

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
4.9	Revised test booklets based on piloting finalization of test booklets	Finalize test items based on the results of content and psychometric reviews, ensuring that they meet established criteria for validity, reliability, and fairness.						■				■																				
4.10	Revised test booklets based on piloting	Develop revised test booklets incorporating approved changes based on the analysis of piloting data and item reviews.							■			■																				
4.11	Assembly of Final booklets	Compile the finalized test booklets								■		■																				
4.12	Translation, forward translation and verification of test booklets	Translate test booklets into regional languages, verify translations for accuracy, and ensure linguistic equivalence.										■	■																			

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
4.13	Printing of test materials	Print test booklets, background questionnaires, and other materials required for data collection, adhering to quality standards and timelines												█																		
5.0	Preparation for Test Administration																															
5.1	Communication with States/UTs	Issue official communications to states/union territories outlining survey objectives, timelines, and responsibilities.		█						█		█																				
5.2	Field Investigator requirements	Determine the number of field investigators required based on sample size and geographical coverage, ensuring adequate staffing for data collection											█																			

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S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
5.3	Material Planning and Distribution	Plan and distribute test booklets, OMR sheets, manuals, and other materials needed for test administration to ensure smooth conduct of the survey													▓	▓																
5.4	Constitution of state and district level teams	Establish state and district-level teams responsible for coordinating field activities, training, and supervision of field investigators										▓																				
5.5	Selection of FIs/observer	Select and train field investigators and observers based on their qualifications, experience, and familiarity with survey procedures.											▓																			
5.6	Material deployment	Distribute test materials to designated schools and ensure proper storage and handling to maintain integrity and security.															▓	▓														

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
5.7	Quality assurance procedures	Implement quality assurance measures to monitor test administration processes and ensure adherence to protocols and standards															▓	▓														
6.0	**Capacity building of Field Investigators**																															
6.1	Development of capacity building plan	Develop a comprehensive plan for training field investigators, incorporating best practices in assessment administration, data collection techniques, and ethical considerations.											▓	▓																		
6.2	Development of training materials (Digital)	Create digital training materials, including presentations, manuals, and interactive modules, to facilitate effective training delivery.										▓	▓																			

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
6.3	Development of field manual for FIs and develop protocols for test administration	Develop a detailed field manual outlining procedures, protocols, and guidelines for field investigators to ensure consistency and accuracy in data collection. Develop protocols for test administration to maintain the integrity and reliability of the data.									▇	▇																				
6.4	Training of Key Resource Person at national level	Conduct training sessions for key resource persons at the national level to cascade training to state and district-level trainers.										▇	▇																			
6.5	Training of Master Trainers at state level	Train master trainers at the state level to oversee training activities and provide ongoing support to field investigators.												▇	▇																	

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
6.6	Training of Key FIs at district level	Conduct training sessions for field investigators at the district level, focusing on practical skills and fieldwork protocols. Integrity in data collection would be emphasized													■	■																
7.0	Conducting Test Administration																															
7.1	Third party monitoring	Engage third-party monitors to monitor test administration procedures, ensuring adherence to protocols and quality standards.															■	■														
7.2	Verification of sampled schools	Verify sampled schools to ensure readiness and compliance with survey requirements, addressing any logistical or administrative issues as needed.															■	■														

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
7.3	Team deployment	Deploy trained field teams to sampled schools, ensuring proper coordination and supervision to facilitate smooth conduct of the survey.															■	■														
7.4	Planning for field monitoring	Plan and conduct field monitoring visits to selected schools to assess data collection processes, address challenges, and provide support to field teams.															■	■														
7.5	Test administration	Administer tests according to prescribed protocols, ensuring standardized procedures and conditions across all sampled schools. Implement strict protocols for test administration to maintain the integrity and reliability of the data.																■ (4/12)														

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S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
7.6	Reporting of test administration	Compile reports on test administration activities, including attendance, logistics, and any incidents or issues encountered during the process.																X														
8.0	**Data preparation and management**																															
8.1	Development of portal for database management	Develop an online portal for database management, data transformation, data storage, incorporating security measures to protect sensitive information											X	X	X	X	X	X														
8.2	Scanning of OMR sheets	Scan OMR sheets using high-quality scanning equipment and software to digitize response data efficiently and accurately.																X	X													

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct, 2024	16-31 Oct, 2024	1-15 Nov, 2024	16-30 Nov, 2024	1-15 Dec, 2024	16-31 Dec, 2024	1-15 Jan, 2025	16-31 Jan, 2025	1-15 Feb, 2025	16-29 Feb, 2025	1-15 Mar, 2025	16-31 Mar, 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
8.3	Data verification	Develop a plan for data verification and consistency checks to identify and rectify errors or inconsistencies in the dataset																	▓	▓	▓											
8.4	Data Cleaning and Merging	Clean and merge data files from different sources, ensuring consistency and integrity for subsequent analysis																	▓	▓	▓											
8.5	Codebook Development	Create codebooks to document variable definitions, coding schemes, and data transformation procedures to facilitate data analysis.																	▓	▓	▓											
9.0	Data analysis																															

PARAKH Rashtriya Sarvekshan 2024 Assessment Framework

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
9.1	Data analysis plan	Develop a detailed plan for data analysis including tabulation plan, outlining statistical techniques, software tools, and procedures for generating key indicators and insights.																		▓	▓											
9.2	Sampling weight calculation	Calculate sampling weights to account for sampling design and non-response, ensuring representative estimates of population parameters.																		▓	▓											
9.3	Data Forensics	Apply data forensics techniques to detect and address anomalies, errors, or inconsistencies in the dataset before analysis.																		▓	▓											

PARAKH Rashtriya Sarvekshan 2024 Assessment Framework

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
9.4	Descriptive statistics	Calculate descriptive statistics such as frequencies, percentage correct answer, and standard deviations to summarize and describe the dataset.																			█	█	█	█	█	█	█					
9.5	Test of significance and variance	Conduct variance analysis to assess differences in performance across groups and identify factors influencing student outcomes																						█	█	█	█					
9.6	Scale score and proficiency levels (IRT analysis)	Use Item Response Theory (IRT) analysis to calculate scale scores to provide a standardized measure of student achievement.																						█	█	█	█					

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9.7	Setting performance standards	Standard setting aims to determine specific scores that separate four levels of achievement, helping in planning interventions. Each level is designed to provide clear understandings of what students know and can do																		███	███	███	███	███	███	███	███					
9.8	Item statistics	Analyze item-level statistics such as difficulty, discrimination, and reliability to evaluate the quality and performance of test items																		███	███	███	███	███	███	███	███					
9.9	Contextual /Casual analysis	Explore relationships between student performance and contextual variables such as socio-economic status, school resources, teaching learning process and instructional practices by using advanced																		███	███	███	███	███	███	███	███					

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
		statistical methods																		■	■	■	■	■	■	■	■					
9.10	Report on SDG 4.1.1 at the global level	Organize workshops to prepare report for SDG 4.1.1 a,b,c indicators based on methodology and guideline suggested by UIS,UNESCO																									■					
9.11	Review and validation	Review analysis results for accuracy, validity, and interpretation, seeking input from experts and stakeholders to ensure robustness and relevance.																									■					
9.12	Data tables preparation	Prepare data tables and graphical representations to present analysis findings in a clear, concise, and accessible format for reporting and dissemination.																						■	■	■	■					
10.0	Reporting and																															

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
	dissemination																															
10.1	Report card format development	Develop standardized formats for district, state, and national report cards, outlining key findings, trends, and recommendations for action																			▓	▓										
10.2	Reporting portal development	Develop an online portal for reporting purposes, allowing stakeholders to access and download reports, datasets, and other relevant materials																▓	▓	▓	▓	▓	▓	▓	▓	▓	▓					
10.3	Report generation	Generate report cards and other communication materials from the reporting portal																									▓					

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
10.4	Develop communication material	Develop communication materials such as brochures, press releases, and videos to raise awareness and disseminate survey findings to diverse audiences.																								██	██					
10.5	Organize workshops	Organize national and state-level workshops to release PARAKH Rashtriya Sarvekshan 2024 reports, facilitate discussions, and engage stakeholders in interpreting and utilizing survey result																										██				
10.6	Implication analysis	Prepare a comprehensive report on the implications of PARAKH Rashtriya Sarvekshan 2024 results, highlighting key findings, challenges, and opportunities for policy and practice.																										██				

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept., 2024	16-30 Sept., 2024	1-15 Oct., 2024	16-31 Oct., 2024	1-15 Nov., 2024	16-30 Nov., 2024	1-15 Dec., 2024	16-31 Dec., 2024	1-15 Jan., 2025	16-31 Jan., 2025	1-15 Feb., 2025	16-29 Feb., 2025	1-15 Mar., 2025	16-31 Mar., 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
10.7	Organize dissemination workshops	Conduct dissemination workshops for state and district-level education functionaries and stakeholders to share survey findings, promote dialogue, and facilitate action planning																											■			
10.8	Develop knowledge products	Develop multimedia resources, including videos, infographics, and case studies, to enhance understanding and utilization of PARAKH Rashtriya Sarvekshan 2024 findings																											■			
10.9	Documentation of PARAKH Rashtriya Sarvekshan 2024	Document all PARAKH Rashtriya Sarvekshan 2024 activities, processes, and outcomes comprehensively to facilitate knowledge sharing, evaluation, and future planning																											■	■		

S. No.	Major Activity/Sub Activity	Details	1-30 April, 2024	1-15 May, 2024	16-31 May, 2024	1-15 June, 2024	16-30 June, 2024	1-15 July, 2024	16-31 July, 2024	1-15 Aug, 2024	16-31 Aug, 2024	1-15 Sept, 2024	16-30 Sept, 2024	1-15 Oct, 2024	16-31 Oct, 2024	1-15 Nov, 2024	16-30 Nov, 2024	1-15 Dec, 2024	16-31 Dec, 2024	1-15 Jan, 2025	16-31 Jan, 2025	1-15 Feb, 2025	16-29 Feb, 2025	1-15 Mar, 2025	16-31 Mar, 2025	1-15 April, 2025	16-30 April, 2025	1-15 May, 2025	16-31 May, 2025	1-15 June, 2025	16-30 June, 2025	Remarks
10.10	Technical report of PARAKH Rashtriya Sarvekshan 2024	Prepare a technical report summarizing PARAKH Rashtriya Sarvekshan 2024 methodology, data collection procedures, analysis techniques, and findings for reference and validation purposes																										███	███	███	███	
10.11	Review and learning	Conduct a comprehensive review of PARAKH Rashtriya Sarvekshan 2024 process and outcomes to identify strengths, weaknesses, and lessons learned for continuous improvement and future iterations of the survey.																													███	