

NATIONAL ACHIEVEMENT SURVEY – CLASS X CYCLE 2 (2017-18)

STATE REPORT CARD

MAHARASHTRA

PARTICIPATION

2870

Participating
School

110430

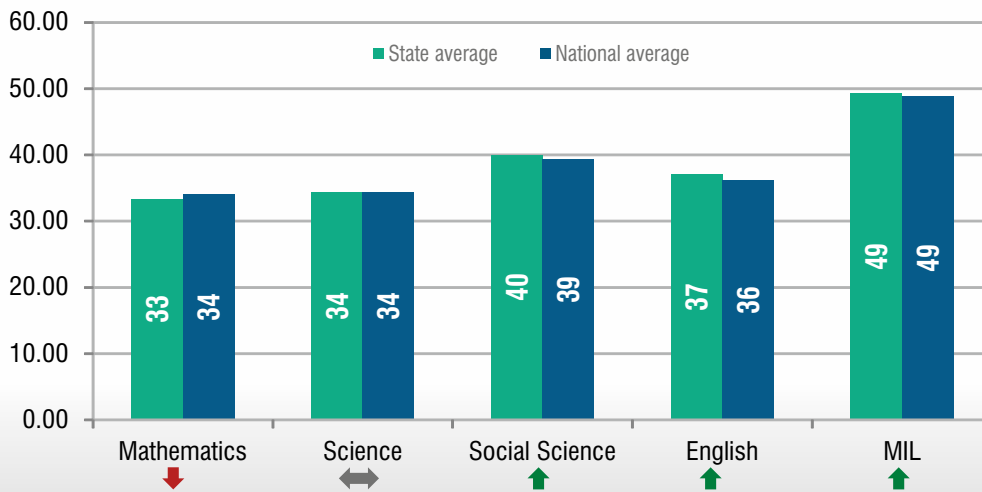
Participating
Students

100%

School
Response Rate

This State Report Card (SRC) of National Achievement Survey (NAS) Class X (Cycle 2) provides an overview of students' academic performance in the state. The NAS surveyed a representative sample of all school types in each state and measured students' performance in five subjects – Mathematics, Science, Social Science, English and Modern Indian Languages (MIL) — Reading Comprehension.

Performance of students in your state: Average Percent Correct



KEY

- State average score is significantly ABOVE National average score
- No significant difference between State and National average scores
- State average score is significantly BELOW National average score

Distribution of students by range (percent correct)

SUBJECTS		0 – 35 (%)	36 – 50 (%)	51 – 75 (%)	76 – 100 (%)
Mathematics	State	67	23	9	1
	National	67	20	11	2
Science	State	60	30	9	1
	National	62	27	10	1
Social Science	State	39	42	18	1
	National	44	38	17	1
English	State	57	25	15	3
	National	61	21	15	3
Modern Indian Language (MIL)	State	22	32	41	5
	National	27	27	39	7

Performance by: LOCATION

Subjects	Rural (% Correct)	Urban (% Correct)	Significant Difference
Mathematics	33	34	↓
Science	34	36	↓
Social Science	40	41	↓
English	35	40	↓
MIL	49	50	↓

Performance by: GENDER

Subjects	Girls (% Correct)	Boys (% Correct)	Significant Difference
Mathematics	33	33	↔
Science	35	34	↑
Social Science	40	40	↔
English	38	36	↑
MIL	51	48	↑

Performance by: SOCIAL GROUP

Subjects	SC (% Correct)	Others (% Correct)	Significant Difference	ST (% Correct)	Others (% Correct)	Significant Difference	OBC (% Correct)	Others (% Correct)	Significant Difference
Mathematics	31	35	↓	30	35	↓	34	35	↓
Science	33	36	↓	31	36	↓	34	36	↓
Social Science	39	41	↓	36	41	↓	40	41	↓
English	34	40	↓	33	40	↓	37	40	↓
MIL	48	51	↓	44	51	↓	50	51	↓

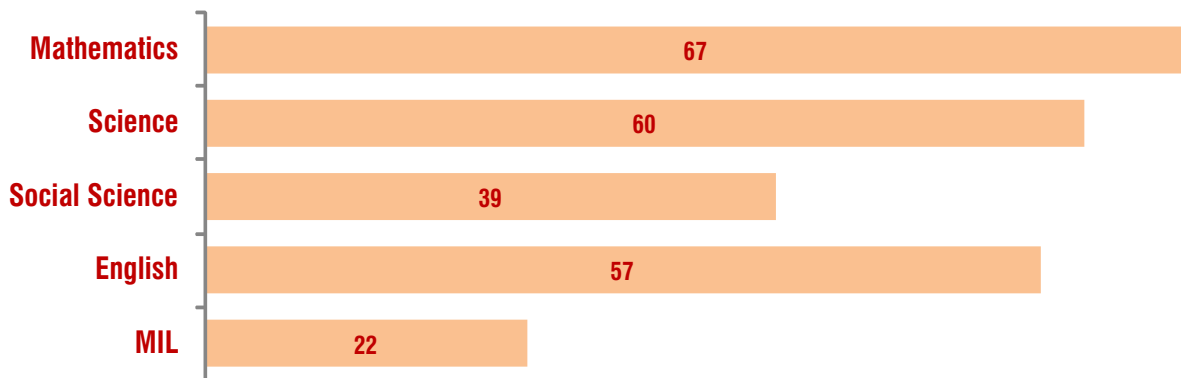
Student participation: **PERCENT**

State sample		
Group	Number of students	%
Girls	53007	48
Boys	57423	52

State sample		
Group	Number of students	%
Rural	67877	61
Urban	42553	39

Group	Number of students	%
SC	15764	14
ST	11263	10
OBC	42629	39
Others	40774	37

MAXIMUM INTERVENTION REQUIRED (% of Students score below 35%)



Skill-wise performance: **(ITEM % CORRECT)**

Subjects	Skill 1 (% correct)	Skill 2 (% correct)	Skill 3 (% correct)
Mathematics	35	33	31
Science	37	33	34
Social Science	42	40	39
English	46	36	36
MIL	56	62	60

Skill 1	Remembering: Recognizing or recalling knowledge from memory.
Skill 2	Understanding: Constructing meaning from different types of functions be they written or graphic messages.
Skill 3	Applying: Carrying out or using a procedure through executing, or implementing.

Performance of Students: CONTENT WISE

Subjects	Content domain	State average (percent correct)	National average (percent correct)	Significant difference
MATHEMATICS	Mathematics (overall)	33	34	↓
	Algebra	33	35	↓
	Geometry	37	35	↑
	Mensuration	31	34	↓
	Trigonometry	32	37	↓
	Coordinate geometry	27	29	↓
	Number system	28	30	↓
	Statistics	31	33	↓
	Probability	36	35	↑
SCIENCE	Science (overall)	34	34	↔
	Food	35	35	↔
	Materials	33	33	↔
	The living world	38	38	↓
	Moving things, people and ideas	35	35	↑
	How things work	21	22	↔
	Natural phenomena	27	27	↔
	Natural resources	39	40	↓
SOCIAL SCIENCE	Social science (overall)	40	39	↑
	History	38	38	↔
	Geography	39	39	↑
	Economics	41	40	↑
	Political science	41	41	↑
ENGLISH	English (overall)	37	36	↔
	Reading comprehension	39	37	↑
	Language element	35	35	↔
MODERN INDIAN LANGUAGE (MIL)	Modern Indian Language (overall)	49	49	↑
	Reading comprehension	57	52	↑

What students know and can do: **MATHEMATICS** (Performance of the students at the **National level**)

More difficult

20%

of students answered this item correctly

If the n^{th} term of an A.P. is $(3n + 1)$, then its 30^{th} term is

1. 31
2. 91
3. 90
4. 94

Skill: Skill 2 item
Content Domain: Algebra

% Answers:
1. 25.8%
2. **32.0%**
3. 27.8%
4. 8.9%

If $ax^2+bx+c=0$ has equal roots, then c is equal to

1. $-\frac{b}{2a}$
2. $\frac{b}{2a}$
3. $-\frac{b^2}{4a}$
4. $\frac{b^2}{4a}$

Skill: Skill 3 item
Content Domain: Algebra

% Answers:
1. 30.0%
2. 25.1%
3. 19.5%
4. **19.8%**

32%

of students answered this item correctly

AOB is a sector of a circle of radius 4 cm subtending an angle of 45° at the centre 'O' of the circle. Area of the sector, in cm^2 , is

1. π
2. 2π
3. 3π
4. 4π

Skill: Skill 1 item
Content Domain: Mensuration

% Answers:
1. 17.4%
2. **49.6%**
3. 11.2%
4. 17.5%

50%

of students answered this item correctly

If $\Delta ABC \cong \Delta PQR$, then which of the following is true?

1. $B \leftrightarrow R$
2. $C \leftrightarrow Q$
3. $A \leftrightarrow R$
4. $A \leftrightarrow P$

Skill: Skill 1 item
Content Domain: Geometry

% Answers:
1. 11.1%
2. 13.2%
3. 15.8%
4. **56.5%**

57%

of students answered this item correctly

If $\tan \theta = \frac{3}{4}$, then $\cot \theta$ is equal to

1. $\frac{4}{3}$
2. $\frac{3}{7}$
3. $\frac{4}{7}$
4. $\frac{7}{4}$

Skill: Skill 1 item
Content Domain: Trigonometry

% Answers:
1. **71.1%**
2. 11.4%
3. 9.2%
4. 5.5%

71%

of students answered this item correctly

Less difficult

KEY

NAS items

This ladder shows the percentage of students answering selected NAS items correctly.

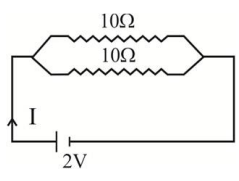
It provides a snapshot of what students know and can do in Mathematics.

What students know and can do: **SCIENCE** (Performance of the students at the **National level**)

More difficult

18%
of students answered
this item correctly

The current I in the circuit shown in the figure is



Skill: Skill 3 item
Content Domain: Physics

% Answers:

1.	0.1A	20.2%
2.	0.2A	38.0%
3.	0.3A	17.9%
4.	0.4A	18.2%

The image of an object formed by your eye lens on the retina is

- erect and real
- inverted and real
- erect and virtual
- inverted and virtual.

Skill: Skill 2 item
Content Domain: Physics

% Answers:

1.	33.1%
2.	31.7%
3.	21.7%
4.	10.9%

32%
of students answered
this item correctly

Packets of potato chips are filled with nitrogen gas in order to avoid

- Rusting
- Rancidity
- Reduction
- Decomposition

Skill: Skill 2 item
Content Domain: Chemistry

% Answers:

1.	11.3%
2.	53.4%
3.	19.0%
4.	14.1%

53%
of students answered
this item correctly

The unit of work is

- joule
- newton
- newton / meter
- watt

Skill: Skill 1 item
Content Domain: Physics

% Answers:

1.	61.5%
2.	12.0%
3.	11.5%
4.	12.4%

62%
of students answered
this item correctly

The fluid secreted in our mouth that mixes with food making it slippery and easy to swallow is

- gastric juice
- hormones
- saliva
- bile

Skill: Skill 1 item
Content Domain: Biology

% Answers:

1.	11.1%
2.	10.0%
3.	71.0%
4.	5.6%

71%
of students answered
this item correctly

Less difficult

What students know and can do: SOCIAL SCIENCE (Performance of the students at the National level)

More difficult

20%
of students answered
this item correctly

The legislative powers for the Union List in India does not include

1. Foreign affairs
2. Banking
3. Defence
4. Police

Skill: Skill 1 item
Content Domain: Political Science

- % Answers:
1. 43.6%
 2. 19.5%
 3. 14.6%
 4. **19.9%**

Observe the table regarding hypothetical data of educational achievement of rural population of a state is given below. Choose one option and fill in the blanks.

Educational Achievement of Rural Population of a State		
Category	Male (%)	Female (%)
Literacy rate for rural population	54	21
Literacy rate for children in age group 10-14 years	69	41
Percentage of rural children aged 10-14 attending school	64	34

Skill: Skill 2 item
Content Domain: Economics

- % Answers:
1. **30.1%**
 2. 15.4%
 3. 14.6%
 4. 35.5%

- _____ of rural girls are not attending school
1. 66%
 2. 64%
 3. 54%
 4. 34%

30%
of students answered
this item correctly

Which of the following is NOT money?

1. Currency Notes
2. Deposits
3. Coins
4. Credit Card

Skill: Skill 2 item
Content Domain: Economics

- % Answers:
1. 11.2%
 2. 29.9%
 3. 8.8%
 4. **47.4%**

47%
of students answered
this item correctly

Which of the following statement is incorrect?

1. People make deposits in banks
2. People take loans from banks
3. People receive interest from banks
4. People repay loans without interest

Skill: Skill 1 item
Content Domain: Economics

- % Answers:
1. 10.7%
 2. 9.1%
 3. 17.2%
 4. **60.5%**

61%
of students answered
this item correctly

India is an example of which of the following system?

1. Monarchy
2. Autocracy
3. Democracy
4. Anarchy

Skill: Skill 1 item
Content Domain: Political Science

- % Answers:
1. 8.4%
 2. 5.8%
 3. **79.6%**
 4. 4.3%

80%
of students answered
this item correctly

Less difficult

What students know and can do: **ENGLISH** (Performance of the students at the **National level**)

Read the chart given below and answer the following questions.

A school decided to celebrate Book Week. The chart below shows the schedule of activities planned. Study the chart carefully and answer the questions that follow.

DAY	CLASS / ACTIVITY IN SCHOOL	VENUE	CLASS / OUTDOOR ACTIVITIES
MONDAY	Class 1 - 2 : Designing bookmarks	Classrooms	Class 8 Visit to National Library
	Class 3 - 4 : Role play	Hall -1	
	Class 5 - 6 : My favourite book--talk	Library	
TUESDAY	Class 3 - 4 : Chain story telling	Auditorium	Class 5 – 6 Film : The Jungle Book
	Class 7 - 8 : Theatre workshop by Barry John	Hall -1	
WEDNESDAY	Class 1 - 2 : Meet the fairy tale characters	Auditorium	
	Class 3 - 4 : Show and tell	Hall -1	
	Class 5 - 6 : Poetry recitation	Hall -2	
	Class 7 - 8 : Designing a bookcover— by Santosh Rai	Art room	
THURSDAY	Class 7 - 8 : Quiz: conducted by Mandeep Kaur	Hall -2	Class 3 - 4 Visit to National Book Trust
	Class 9 -10 : Meet the author-- Ruskin Bond	Library	
FRIDAY	Class 5 - 6 : Book reading by students	Classrooms	

More difficult

30%
of students answered
this item correctly

The school has invited _____ experts for different events.

1. Two
2. Six
3. Four
4. Five

Skill: Skill 2 item
Content Domain:
Reading Comprehension

% Answers:
1. 19.9%
2. 24.5%
3. 29.7%
4. 21.5%

Which classes will go to see 'The Jungle Book' and when?

1. Class 7 and 8, Tuesday
2. Class 3 and 4, Wednesday
3. Class 9 and 10, Thursday
4. Class 5 and 6, Tuesday

Skill: Skill 1 item
Content Domain:
Reading Comprehension

% Answers:
1. 12.4%
2. 16.9%
3. 16.6%
4. 51.0%

51%
of students answered
this item correctly

On which day can the children meet Ruskin Bond?

1. Monday
2. Wednesday
3. Thursday
4. Friday

Skill: Skill 1 item
Content Domain:
Reading Comprehension

% Answers:
1. 13.3%
2. 10.8%
3. 62.4%
4. 10.9%

62%
of students answered
this item correctly

Less difficult

SELECTED SCHOOL CHARACTERISTICS



97% of schools have a science laboratory.



37% of schools have a mathematics laboratory.



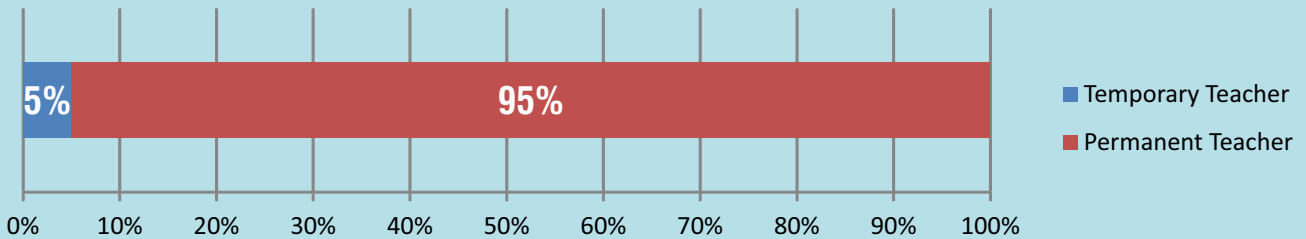
95% of schools have a library.

SELECTED TEACHER CHARACTERISTICS

29% of teachers sometimes make use of projects for assessing Class X students.

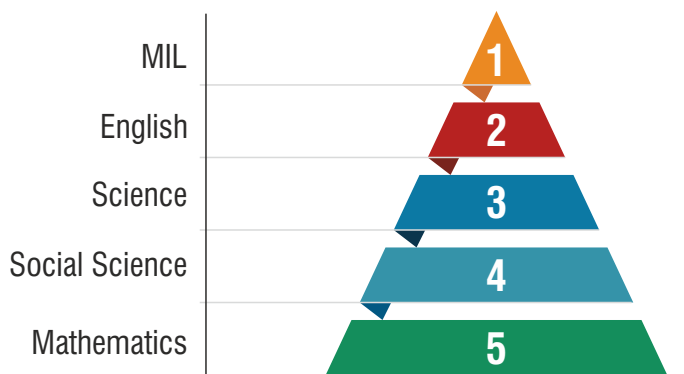
72% of teachers always make use of written tests or examinations.

Employment Status



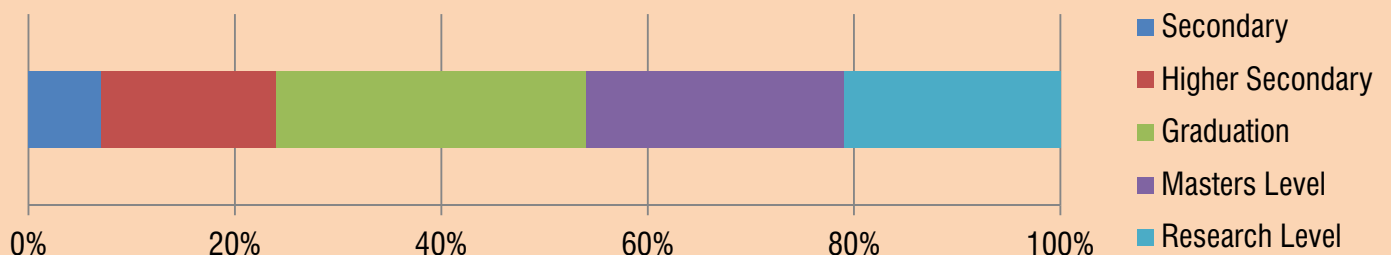
SELECTED STUDENT CHARACTERISTICS IN YOUR STATE

Student preference for subjects:



20% of students travel more than 5km to school.

How far students wish to study



CORE TEAM

MHRD

- Ms. Rina Ray, IAS, Secretary School, Education and Literacy (SE&L)
- Shri. Maneesh Garg, Joint Secretary, School Education and Literacy (SE&L)
- Ms. Nigar Fatima Husain, Director (RMSA-I)
- Ms. Nazli Jafari Shayin, Director (RMSA-II)
- Dr. Letha Ram Mohan, Chief Consultant, Quality and Innovation, (TSG)
- Mr. Muktar Alam, Sr. Consultant, Quality and Innovation, (TSG)

NCERT

- Prof. Hrushikesh Senapaty, *Director*, NCERT
- Dr. Indrani Bhaduri, *Professor & Head*
- Dr. Sridhar Srivastava, *Professor*
- Dr. Veer Pal Singh, *Professor*
- Dr. A.D. Tewari, *Professor*
- Dr. Pratima Kumari, *Associate Professor*
- Dr. Sukhvinder, *Assistant Professor*
- Dr. Vishal D. Pajankar, *Assistant Professor*
- Dr. Satya Bhushan, *Assistant Professor*
- Dr. Gulfam, *Assistant Professor*
- Shri N. L. Srinivas, *Sr. System Analyst*
- Shri Md. Arif Sadiq, *Programmer*
- Shri Vishwa Bandhu, *Programmer*

EXTERNAL

- World Bank, India

STATE FUNCTIONARIES

- School Boards, CBSE, ICSE, State Directorate of Education, SCERTs, SIEs, Schools

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

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NAS for Transforming School Education