

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

## STATE REPORT CARD

## BIHAR

### PARTICIPATION

2838

Participating  
School

94298

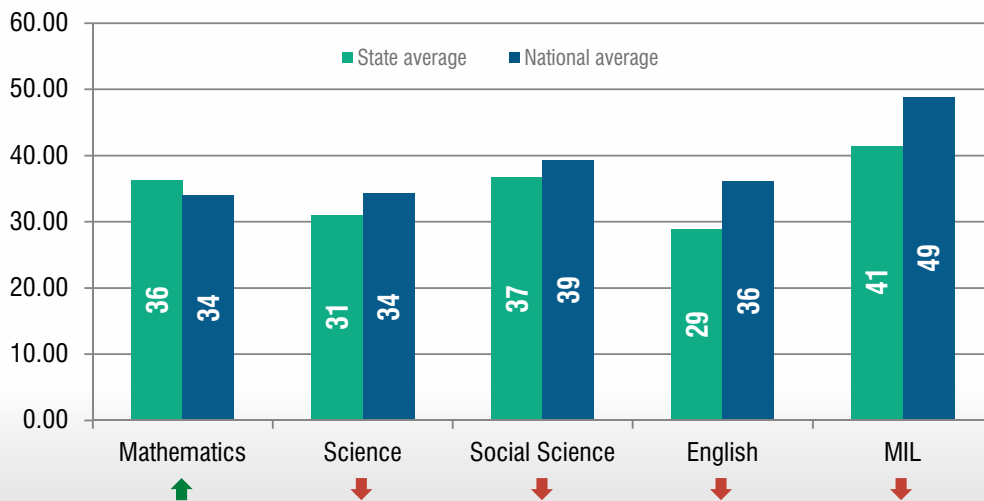
Participating  
Students

98%

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	60	21	15	4
	National	67	20	11	2
Science	State	72	19	8	1
	National	62	27	10	1
Social Science	State	54	29	16	1
	National	44	38	17	1
English	State	80	12	7	1
	National	61	21	15	3
Modern Indian Language (MIL)	State	46	23	26	5
	National	27	27	39	7

### Performance by: LOCATION

Subjects	Rural (% Correct)	Urban (% Correct)	Significant Difference
Mathematics	36	37	↔
Science	31	32	↔
Social Science	37	37	↔
English	29	30	↓
MIL	41	43	↓

### Performance by: GENDER

Subjects	Girls (% Correct)	Boys (% Correct)	Significant Difference
Mathematics	35	38	↓
Science	31	31	↔
Social Science	36	37	↔
English	29	29	↔
MIL	41	42	↓

### Performance by: SOCIAL GROUP

Subjects	SC (% Correct)	Others (% Correct)	Significant Difference	ST (% Correct)	Others (% Correct)	Significant Difference	OBC (% Correct)	Others (% Correct)	Significant Difference
Mathematics	34	38	↓	35	38	↓	37	38	↓
Science	29	32	↓	30	32	↓	31	32	↓
Social Science	35	38	↓	35	38	↓	37	38	↓
English	27	30	↓	28	30	↓	29	30	↓
MIL	39	44	↓	41	44	↓	41	44	↓

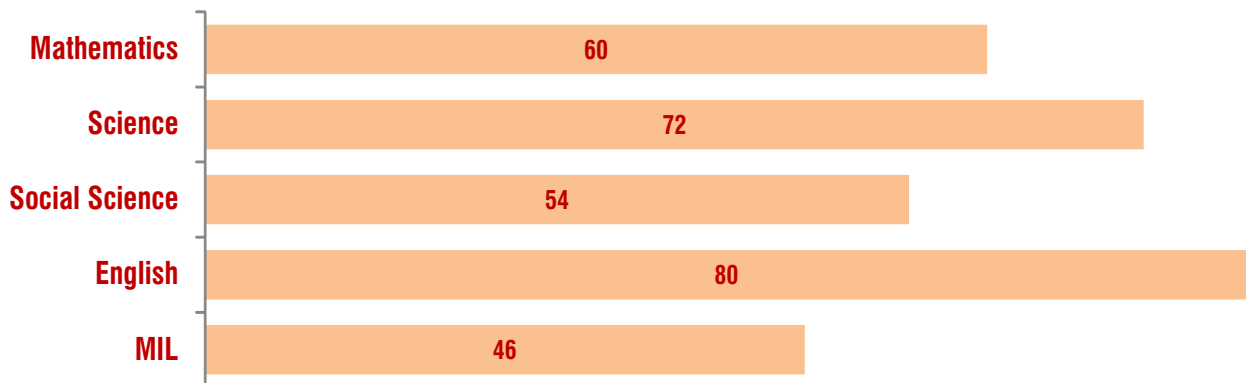
Student participation: **PERCENT**

State sample		
Group	Number of students	%
Girls	50533	54
Boys	43765	46

State sample		
Group	Number of students	%
Rural	85414	91
Urban	8884	9

Group	Number of students	%
SC	14963	16
ST	2488	3
OBC	58735	62
Others	18112	19

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



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

Subjects	Skill 1 (% correct)	Skill 2 (% correct)	Skill 3 (% correct)
Mathematics	40	36	32
Science	35	29	31
Social Science	38	38	35
English	35	28	28
MIL	42	49	42

<b>Skill 1</b>	<b>Remembering:</b> Recognizing or recalling knowledge from memory.
<b>Skill 2</b>	<b>Understanding:</b> Constructing meaning from different types of functions be they written or graphic messages.
<b>Skill 3</b>	<b>Applying:</b> 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
<b>MATHEMATICS</b>	<b>Mathematics (overall)</b>	<b>36</b>	<b>34</b>	<b>↑</b>
	Algebra	37	35	↑
	Geometry	33	35	↓
	Mensuration	40	34	↑
	Trigonometry	44	37	↑
	Coordinate geometry	34	29	↑
	Number system	37	30	↑
	Statistics	35	33	↑
	Probability	33	35	↓
<b>SCIENCE</b>	<b>Science (overall)</b>	<b>31</b>	<b>34</b>	<b>↓</b>
	Food	31	35	↓
	Materials	30	33	↓
	The living world	34	38	↓
	Moving things, people and ideas	31	35	↓
	How things work	20	22	↓
	Natural phenomena	27	27	↔
	Natural resources	35	40	↓
<b>SOCIAL SCIENCE</b>	<b>Social science (overall)</b>	<b>37</b>	<b>39</b>	<b>↓</b>
	History	36	38	↓
	Geography	37	39	↓
	Economics	36	40	↓
	Political science	38	41	↓
<b>ENGLISH</b>	<b>English (overall)</b>	<b>29</b>	<b>36</b>	<b>↓</b>
	Reading comprehension	30	37	↓
	Language element	28	35	↓
<b>MODERN INDIAN LANGUAGE (MIL)</b>	<b>Modern Indian Language (overall)</b>	<b>41</b>	<b>49</b>	<b>↓</b>
	Reading comprehension	43	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  $ax^2+bx+c=0$  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%**

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

**32%**

of students answered this item correctly

AOB is a sector of a circle of radius 4 cm subtending an angle of  $45^\circ$  at the centre 'O' of the circle. Area of the sector, in  $\text{cm}^2$ , is

1.  $\pi$
2.  $2\pi$
3.  $3\pi$
4.  $4\pi$

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.

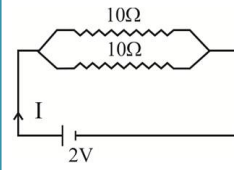
It provides a snapshot of what students know and can do in Mathematics.

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

1. 0.1A
2. 0.2A
3. 0.3A
4. 0.4A

- % Answers:
1. 20.2%
  2. 38.0%
  3. 17.9%
  4. **18.2%**

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

1. erect and real
2. inverted and real
3. erect and virtual
4. 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

1. Rusting
2. Rancidity
3. Reduction
4. 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

1. joule
2. newton
3. newton / meter
4. 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

1. gastric juice
2. hormones
3. saliva
4. 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**

**KEY** **NAS item**

This ladder shows the percentage of students answering selected NAS items correctly. It provides a snapshot of what students know and can do in Science.

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

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 Social Science.

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



**65%** of schools have a science laboratory.



**15%** of schools have a mathematics laboratory.



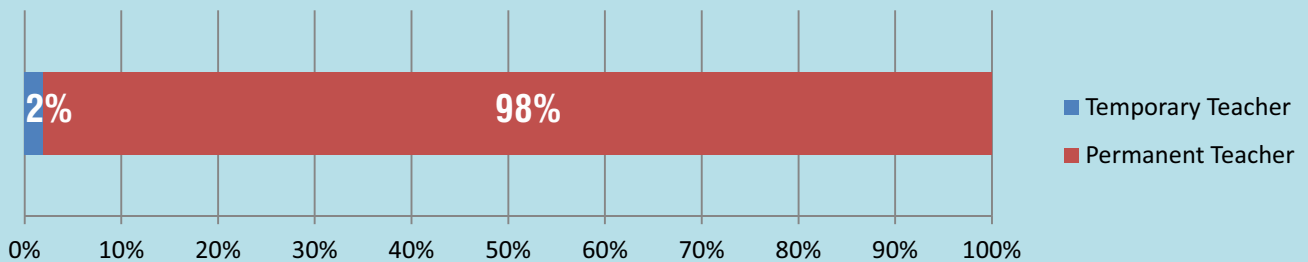
**73%** of schools have a library.

## SELECTED TEACHER CHARACTERISTICS

**25%** of teachers sometimes make use of projects for assessing Class X students.

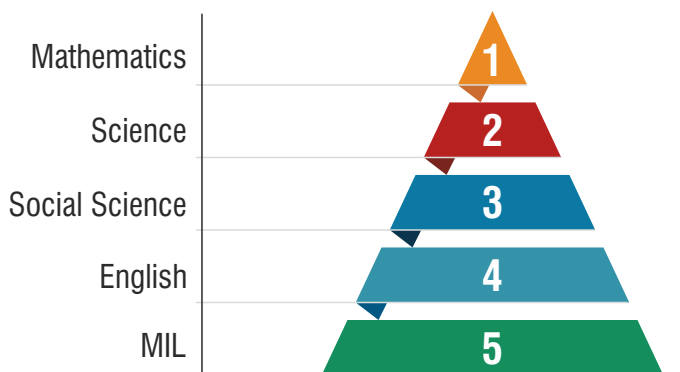
**48%** of teachers always make use of written tests or examinations.

### Employment Status



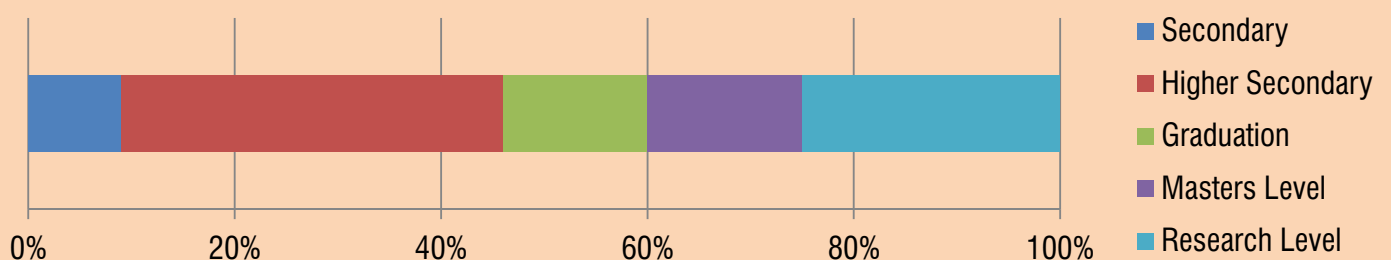
## SELECTED STUDENT CHARACTERISTICS IN YOUR STATE

### Student preference for subjects:



**22%** of students travel more than 5km to school.

### How far students wish to study



# CORE TEAM

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## 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

**For Any Clarification Please Contact:**

**Prof. Indrani Bhaduri**

Head, Educational Survey Division

NCERT, New Delhi

Mobile No.: +91 9718106995

Email Id: [indranibhaduri@gmail.com](mailto:indranibhaduri@gmail.com)

**NAS for Transforming School Education**