

PISA

Programme for International Student Assessment

CAPACITY BUILDING WORKSHOP

What is PISA

- ❖ **OECD's (Organisation for Economic Co-operation and Development) Programme for International Student Assessment.**
- ❖ **Triennial assessment** --tests skills and knowledge of 15-year-old students from all over the world in Reading, Mathematics & Science.
- ❖ Tests --- designed to gauge how well the students master key subjects in order to be **prepared for real-life situations in the adult world**
- ❖ <http://www.oecd.org/pisa/>



India's Agreement with OECD

- ❖ Prime Minister's approval --- 28th Jan 2019 --for signing of Agreement between **Department of School Education & Literacy, MHRD & OECD** for India's participation in PISA 2021
- ❖ Ex Post Facto approval by Cabinet --19th Feb 2019
- ❖ Schools run by **Kendriya Vidyalaya Sangathan (KVS), Navodaya Vidyalaya Samiti (NVS)** and schools in the UT of Chandigarh to participate.

<http://www.pib.nic.in/PressReleseDetail.aspx?PRID=1561704>

Why PISA- how will it help India

PISA --- Competency Based Assessment

Measures the extent to which students have acquired key competencies --essential for full participation in modern societies.

Would lead to recognition and acceptability of Indian students and prepare them for the global economy in the 21st century

Why PISA- how will it help India

Learnings from participation in PISA will help to introduce competency based examination reforms in the school system

Enhance effectiveness of education systems

Help move away from rote learning.

The CBSE and NCERT will be part of the process and activities leading to the actual test

Why choose 15-year-olds?

In most countries, at the age of 15, students can decide whether or not they want to continue their education

So they need to be equipped for adult life

PISA publishes the results of the test a year after the students are tested to help governments shape their education policy.

Eligibility of Students

Children of age group **15 years 3 months – 16 years 2 months** attending any educational institution in the country (selected region), including public, private, aided, international schools.

Open Schools students --- not eligible.

Students born between Jan 2005 to Feb 2006 as test will be held
in April 2021

Field Trial (FT)

- To be conducted in April 2020.
- 25 schools and 36 students in each school i.e. 900 students to be assessed through 18 forms to be used for testing 50 students each.
- Exact dates to be chosen for field trial(Tentative – March-May 2020)

PISA 2021

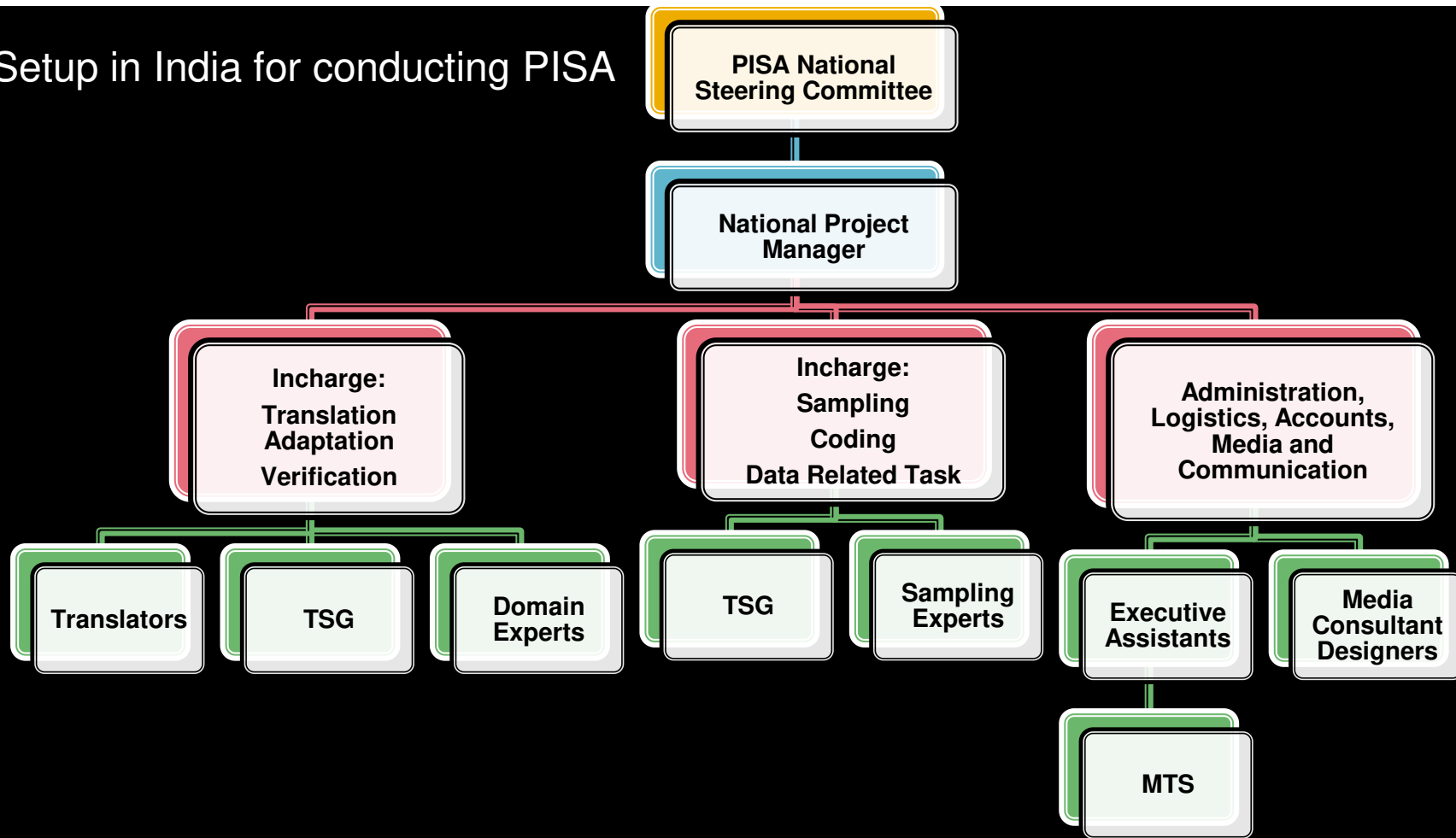
Officially called Main Survey

To be conducted in April 2021

5250 students (150 schools x 35 students) will be assessed on the following subjects:-

- ❖ Maths and Science (33% students)**
- ❖ Maths and Reading (33% students)**
- ❖ Reading and Science (33%students)**

Setup in India for conducting PISA



Additional Detail

India has opted for Paper Based Assessment

The instruments and questionnaires will be provided in Hindi as well as English and have opted for International verification of adapted and translated versions.

Chandigarh UT will be representing India for purpose of ranking.

KV and NV will be a national option and shall be treated as a single unit for reporting purpose.

PISA---Principles of Testing

- ❖ Covers three domains: **Reading** Literacy, **Mathematical** Literacy And **Scientific** Literacy.
- ❖ PISA aims to define each domain not merely in terms of mastery of the school curriculum, **but in terms of important knowledge and skills needed in adult life.**
- ❖ Emphasis is placed on the mastery of processes, understanding of concepts and the ability to function in various situations within each domain.

[https://www.acer.org/files/PISA Thematic Report - Maths - web.pdf](https://www.acer.org/files/PISA%20Thematic%20Report%20-%20Maths%20-%20web.pdf)

[https://www.acer.org/files/PISA Thematic Report - Science - web.pdf](https://www.acer.org/files/PISA%20Thematic%20Report%20-%20Science%20-%20web.pdf)

[https://www.acer.org/files/PISA Thematic Report - Reading - web.pdf](https://www.acer.org/files/PISA%20Thematic%20Report%20-%20Reading%20-%20web.pdf)

Definition of Scientific literacy

The ability to engage with science-related issues and also with the ideas of science, as a reflective citizen.

A scientifically literate person is willing to engage in reasoned discourse about science and technology, which requires the competencies to:

- Explain phenomena scientifically
- Evaluate and design scientific enquiry
- Interpret data and evidence

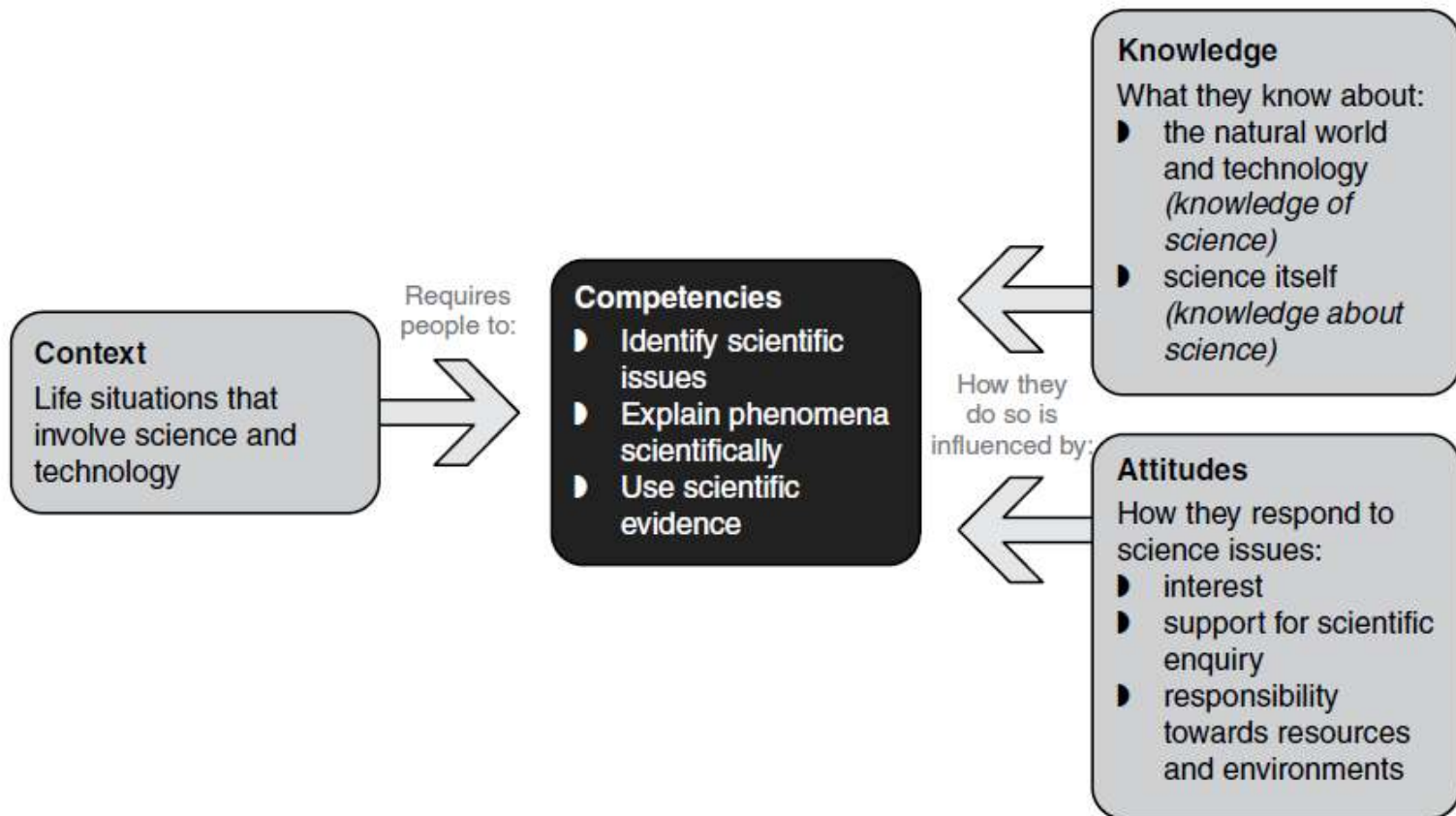


Figure 2.1 The components of the PISA scientific literacy framework¹

Definition of Reading literacy

An individual's capacity to

- ❖ **understand**
- ❖ **use**
- ❖ **reflect on and engage with written texts**

This will help the students

- ❖ **to achieve goals**
- ❖ **to develop knowledge and potential**
- ❖ **to participate in society**

Definition of Mathematical literacy



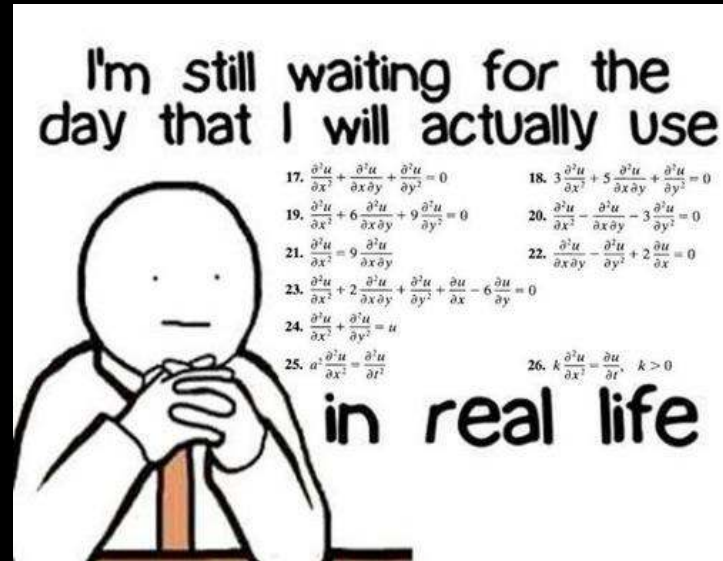
An individual's capacity to formulate, employ and interpret Mathematics in a variety of contexts.

It includes reasoning mathematically and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena.

Definition of Mathematical Literacy

It assists individuals to recognise the role that Mathematics plays in the world.

To make the well-founded judgments and decisions needed by constructive, engaged and reflective citizens



Challenges, Problems and Issues

- ❖ Why might **learners** find PISA difficult?
- ❖ What skills did **you** need to answer the questions?

Challenges, Problems and Issues

- ❖ Too much text/reading
- ❖ Too much information
- ❖ Learners don't know how to answer
- ❖ The questions are long and presented in unfamiliar layouts
- ❖ Learners don't understand the questions
- ❖ They give up too easily
- ❖ They are afraid to be wrong/Fear of failure

Anatomy of a PISA style Question

Science

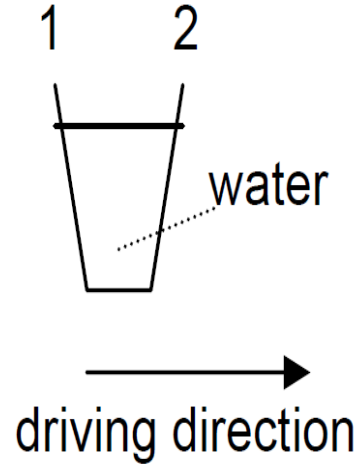
https://www.acer.org/files/PISA_Thematic_Report_-_Science_-_web.pdf

Question 1: BUSES S127Q01

A bus is driving along a straight stretch of road. The bus driver, named Ray, has a cup of water resting on the dashboard: Suddenly Ray has to slam on the brakes.

What is most likely to happen to the water in the cup?

- A :The water will stay horizontal.
- B :The water will spill over side 1.
- C :The water will spill over side 2.
- D :The water will spill but you cannot tell if it will spill at side 1 or side 2.



BUSES SCORING 1

**QUESTION INTENT:
and understanding**

Process:

Demonstrating knowledge

Theme:

Forces and movement

Area:

Science in Technology

Full credit

Code 1: C. The water will spill over side 2.

No credit

Code 0: Other responses.

Code 9: Missing.

Question 4: BUSES S127Q04- 0 1 8 9

Ray's bus is, like most buses, powered by a petrol engine. These buses contribute to environmental pollution.

Some cities have trolley buses: they are powered by an electric engine.

The voltage needed for such an electric engine is provided by overhead lines (like electric trains).

The electricity is supplied by a power station using fossil fuels.

Supporters for the use of trolley buses in a city say that these buses don't contribute to environmental pollution.

Are these supporters right? Explain your answer.

.....

Mathematics

https://www.acer.org/files/PISA_Thematic_Report_-_Maths_-_web.pdf

Mathematics Question- Making a booklet

Question 1: MAKING A BOOKLET

Question intent: Space and shape

M598Q01 - 019

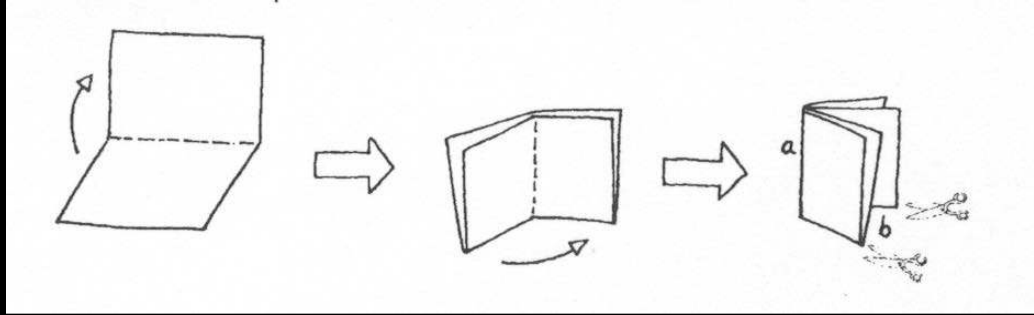


Figure 1 shows how to make a small booklet.

The instructions are given below:

Take a piece of paper and fold it twice.

Staple edge a .

Cut open two edges at b .

The result is a small booklet with eight pages.

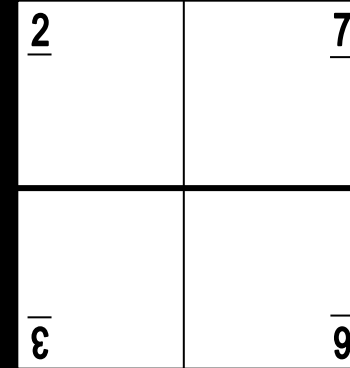
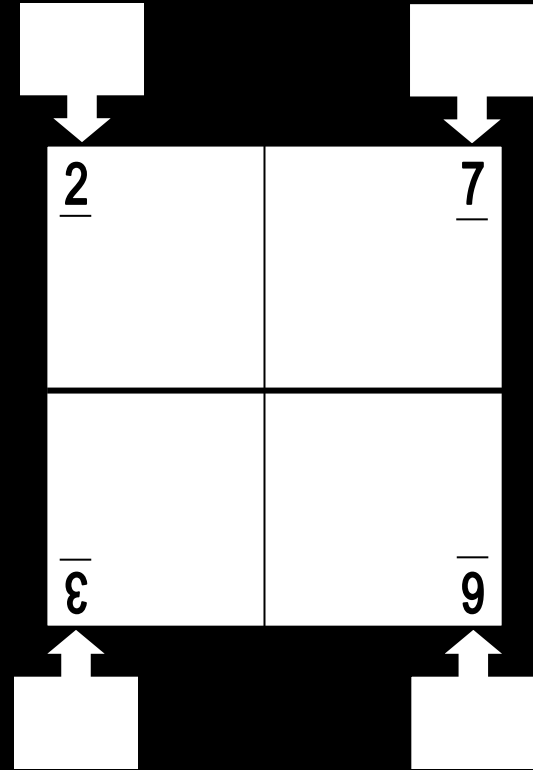


Figure 2 shows one side of a piece of paper that is used to make such a booklet.

The page numbers have been put on the paper in advance.

The thick line indicates where the paper will be cut after folding.

Write the numbers 1, 4, 5 and 8 in the correct boxes in the following diagram to show which page number is directly behind each of the page numbers 2, 3, 6 and 7.

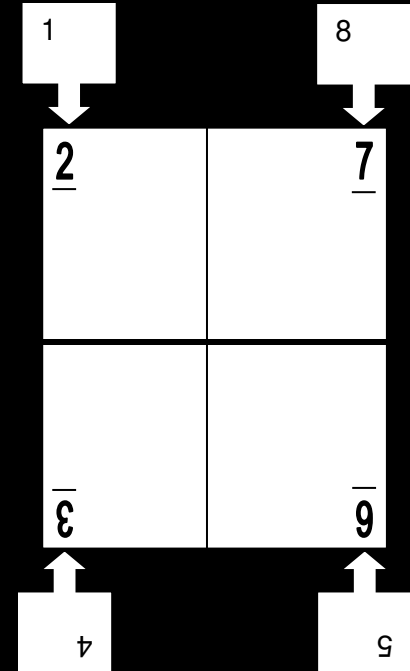


Mathematics Scoring

Correct

Page numbers placed correctly in the following positions

(ignore the orientation of the numbers)



Reading

[https://www.acer.org/files/PISA Thematic Report - Reading - web.pdf](https://www.acer.org/files/PISA%20Thematic%20Report%20-%20Reading%20-%20web.pdf)

Library Map

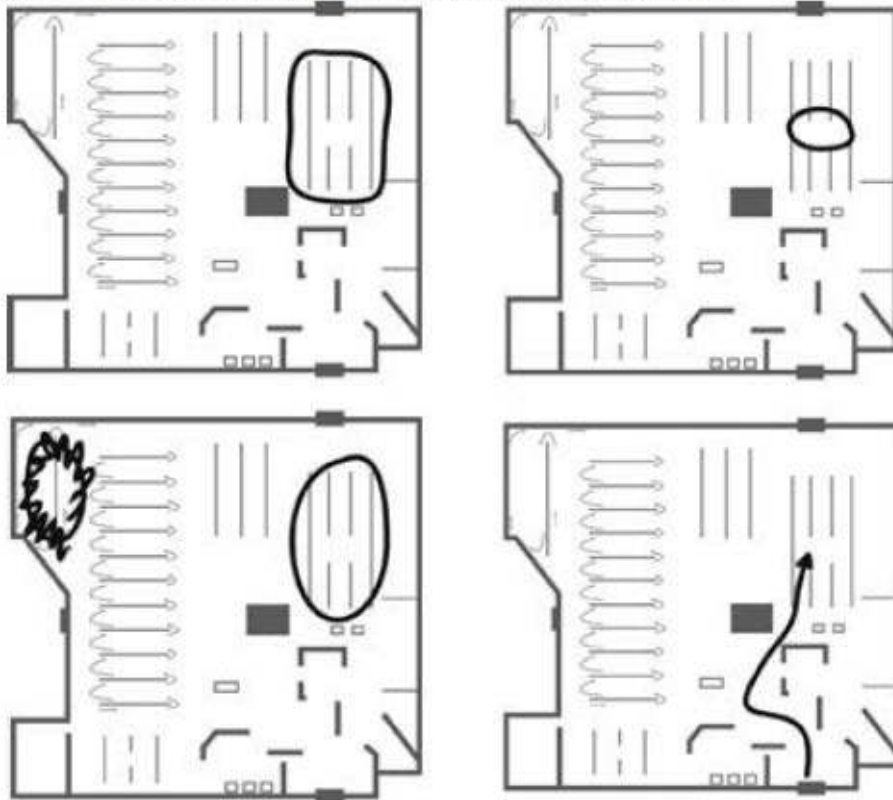


On the map draw a circle around the section where you would be most likely to find a suitable book to borrow.

CODING GUIDE

Full credit

Code 1: Circles the words "other languages" or the lines (shelves) near the words.



[Ignore crossed-out answer.]

***Coding Guide (means the marking scheme) :
Library***

***Full credit for any of the
answers***

Question 7A: Library

Where are *New books* located?

- A. In the fiction section.**
- B. In the non-fiction section.**
- C. Near the entrance.**
- D. Near the information desk.**

Library scoring 7a

Note: The correct answer is C: “Near the entrance”. This question is for information only and will not independently contribute to the student’s score.

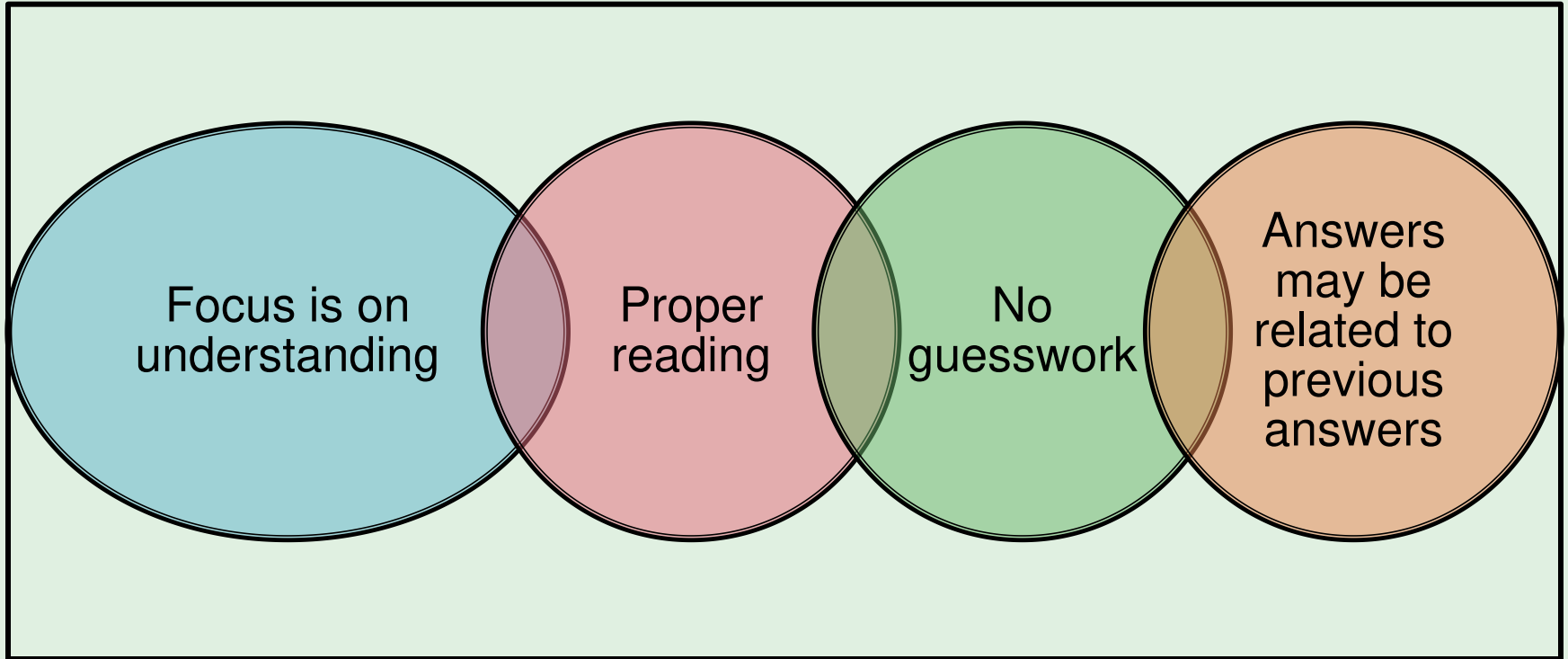
The answer is taken into account in assessing the response to Question 7B.

question 7B: Library

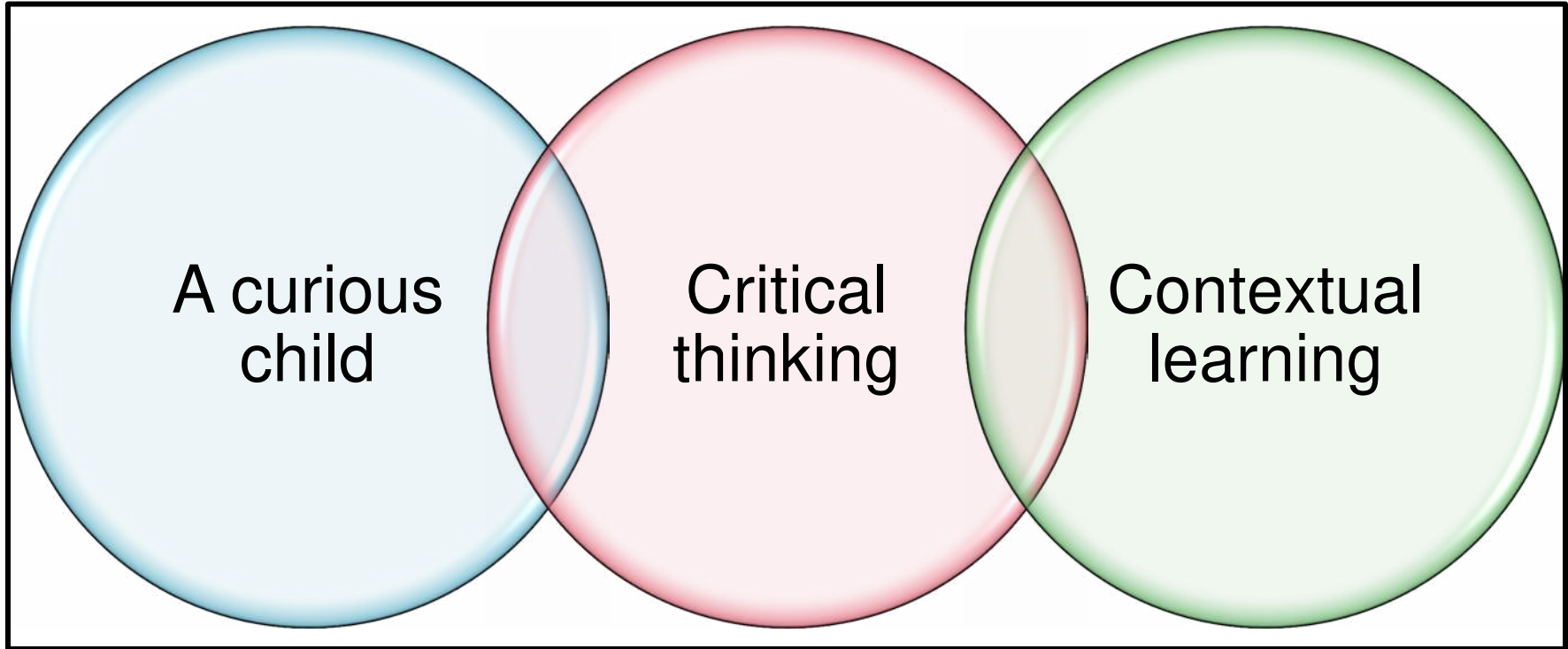
Explain why this location might have been chosen for *New books*.

.....

Thus PISA Test is Different



What will it Achieve?



Induce Critical Thinking

Be happy- when children start asking questions like

- Ice floats on water despite being a solid !!!
- So how does it affect nature?
- Marine life



History – Thinking Differently

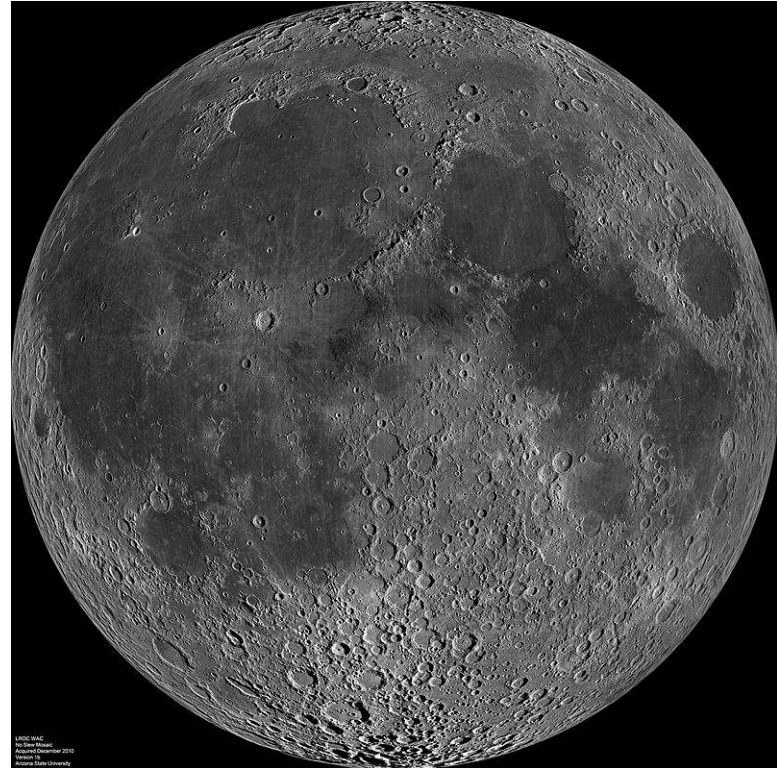


**Dandi March by
Gandhiji**

**World's Smartest
Marketing Campaign !!**

Daily Phenomenon

- Both Earth and Moon are revolving and rotating
- So why do we always see the same side of MOON



What can PISA Achieve?

- ❖ Children look forward to school
- ❖ They ask questions for which the text book does not have answers
- ❖ Then they learn to explore and collaborate

It is expected that PISA like tests will help in this area of child growth.

It will also make TEACHING very exciting !!!

Future of Students

Competencies

- ❖ Critical thinking/Problem Solving
- ❖ Communication
- ❖ Collaboration

Modern examinations like CAT, SAT, GRE, CSAT (UPSC), CLAT etc. are all adapting to this goal.



Resources

<https://learning.gov.wales/resources/learningpacks/pisa/module-8/?lang=en#/resources/learningpacks/pisa/module-8/training-pack/?lang=en>
<https://learning.gov.wales/docs/learningwales/publications/120629pisabookleten.pdf>
<https://learning.gov.wales/docs/learningwales/publications/130429how-to-develop-thinking-en.pdf>
<https://learning.gov.wales/resources/learningpacks/pisa/Deconstructing-pisa-style-and-sample-questions/?lang=en#/resources/learningpacks/pisa/Deconstructing-pisa-style-and-sample-questions/training-pack/?lang=en>
<http://www.bcsea.bt/index.php/pisa-released-items/>
<http://www.oecd.org/pisa/test/>
<http://www.oecd.org/pisa/>
<http://www.oecd.org/publications/ten-questions-for-mathematics-teachers-and-how-pisa-can-help-answer-them-9789264265387-en.htm>
https://www.acer.org/files/PISA_Thematic_Report_-_Maths_-_web.pdf
https://www.acer.org/files/PISA_Thematic_Report_-_Science_-_web.pdf
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