Science Sharing

Upper Primary

ST JOSEPH'S INSTITUTION JUNIOR

A Lasallian School of the De La Salle Brothers

Spotlight

- Syllabus Updates and Examination Format
- Transition from Lower Block to Upper Block
- Parental Guidance (PG) Alert!
  - ✓ Scientific Skills and Processes
  - ✓ CER Strategy

Syllabus Updates

Implementation of 2023 Primary Science Syllabus

Content Update

Levels	P3	P4	P5	P6
Themes	Diversity . Cycles . Systems . Interactions . Energy			
Topics	• Diversity of living and non-living things (General characteristics and classification) • Diversity of materials • Cycles in plants and animals (Life cycles) • Interaction of forces (Magnets)	• Plant system (Plant parts and functions) • Human system (Digestive system) • Cycles in matter and water (Matter) • Energy forms and uses (Light) • Energy forms and uses (Heat)	• Cycles in plants and animals (Reproduction) • Cycles in matter and water (Water) • Plant system (Respiratory and circulatory systems) • Human system (Respiratory and circulatory systems) • Electrical system	• Energy forms and uses (Photosynthesis) • Energy conversion • Interaction of forces (Frictional force, gravitational force, elastic spring force) • Interactions within the environment

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(-) Remove cell system as a topic

(+) Introduce concept of cell as basic unit of life under Cycles in plants and animals (Reproduction)

(+) Include property of 'Light travels in straight lines' in a LO under Energy forms and uses (Light)

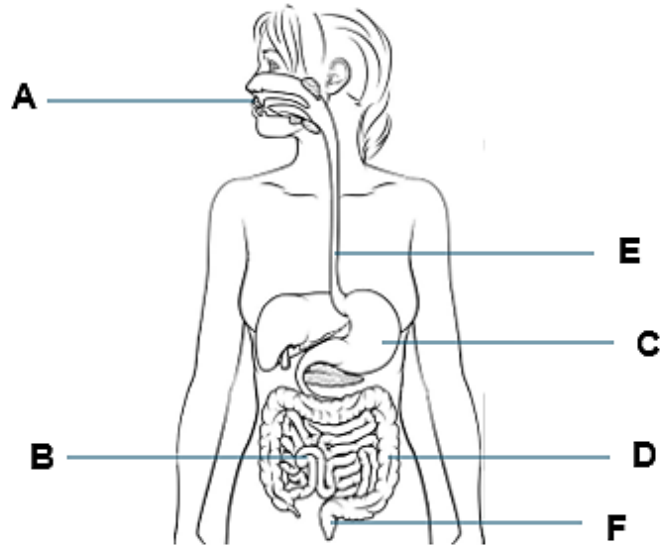
(+) Include concept of 'Heat is a form of energy' in a LO under Energy forms and uses (Heat)

(+) Include concept of respiration, focusing on the release of energy from food, in a LO under Energy forms and uses (Photosynthesis)

Examination Format

Booklet	Item Type	Number of questions	Number of marks per question	Marks
A	Multiple-choice	30	2	60
B	Structured	10 - 11	2 - 5	40

Transition from Lower Block to Upper Block

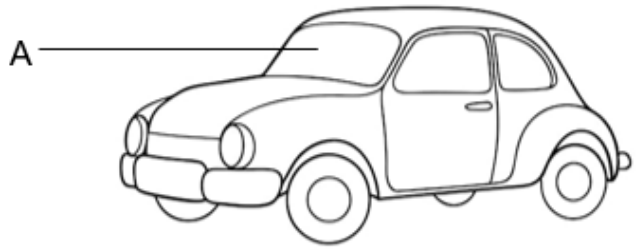


Based on the diagram above, name all the parts (A, B, C, D, E, F), that are able to digest food. [1]

Based on the diagram above, which part, A, B, C, D, E or F, has a function that is similar to the roots of a plant? Explain your answer. [1]

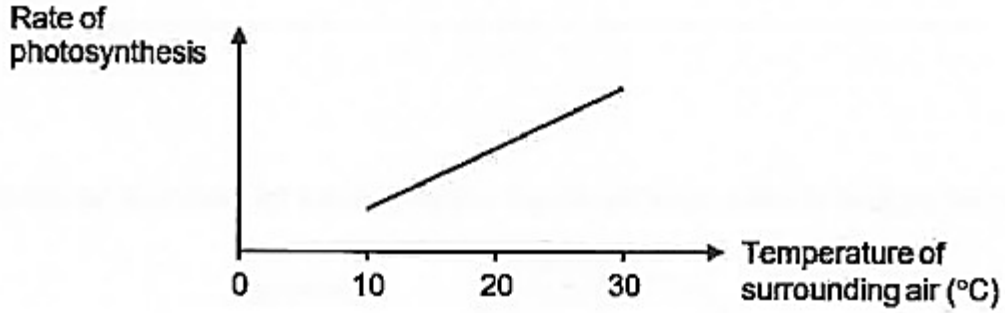
His results are as shown.

Material	Transparency
X	Allows most light to pass through
Y	Allows some light to pass through
Z	Does not allow any light to pass through



Which material, X, Y or Z, is most suitable to make part A of the car? Explain your answer. [2]

Transition from Lower Block to Upper Block



Many tiny openings are found on the underside of leaves of plant P. George measured the size of openings at different temperatures.

Temperature (°C)	Average size of openings (units)
10	1
20	2
30	5

(a) Using the results shown in the graph above, explain how the change in size of openings at higher temperatures help the plant. [2]

(b) State two factors in the surroundings that George should keep constant for his investigation. [2]

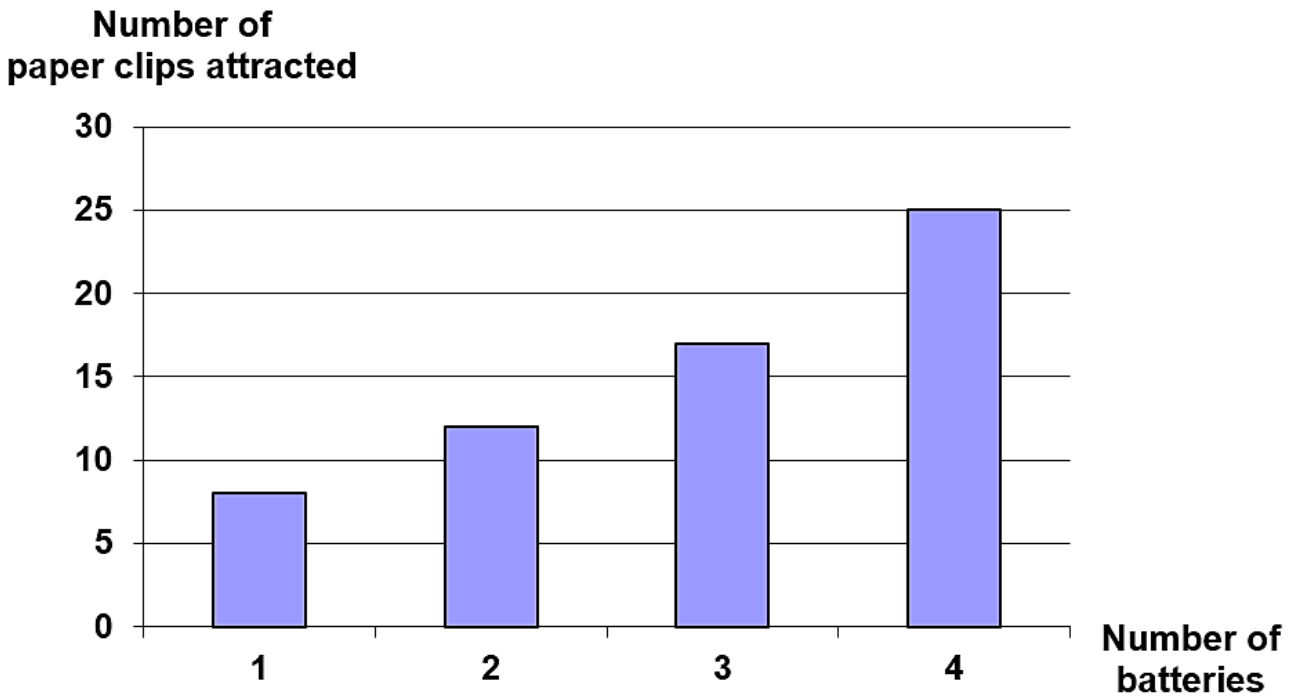
The table shows the amount of blood transported per minute to some parts of the body when a person is resting and jogging.

Part of body	Amount of blood transported per minute (units)	
	Resting	Jogging
Leg muscles	900	4700
Digestive system	1200	720

(a) Explain why there is an increase in the amount of blood transported to the leg muscles when jogging. [2]

(b) Using the information given, explain how the absorption of digested food is affected during jogging. [2]

Transition from Lower Block to Upper Block

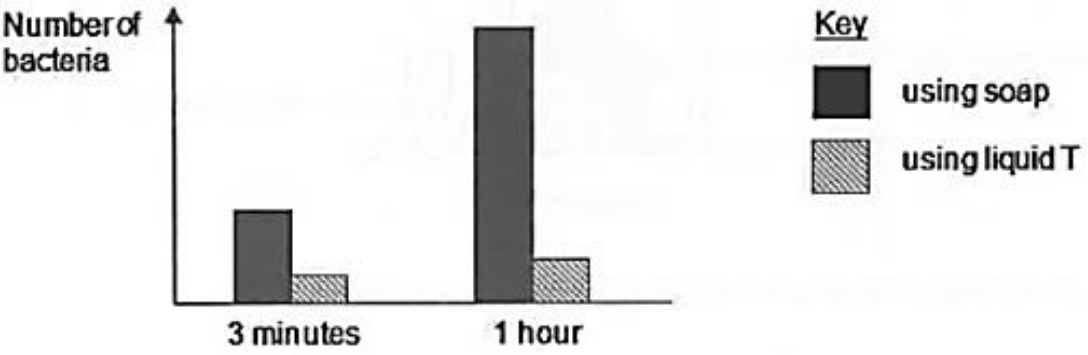


From the results, what is the relationship between the number of batteries and the number of paper clips attracted? [1]

In the list of variables below, put a tick (✓) in the correct boxes to ensure a fair test. [2]

	Variable to be changed	Variable to be measured	Variable that does not change
Temperature of the water at the start			
Temperature of the hot plate			
Time taken for the water to boil			
Size of the beakers			

Transition from Lower Block to Upper Block



a) (i) State what Nicole can conclude about the effectiveness of liquid T. [1]

(ii) Explain your answer in (a)(i). [2]

b) State how using the same thumb instead of other fingers helped to make the study a fair test. [1]

Town	Percentage of pollutant S in the air (%)	Average size of tiny openings (units)
J	5	3
K	3	5
L	1	6

State the effect of pollutant S on the size of tiny openings. [1]

To ensure a fair investigation, the size of the tiny openings on leaves in all three towns was measured at the same time. Explain why. [1]

Scientific Skills and Processes

PG

Record and compare observations/data.

Analyse data in tables, graphs, bar charts and diagrams to infer patterns and relationships.

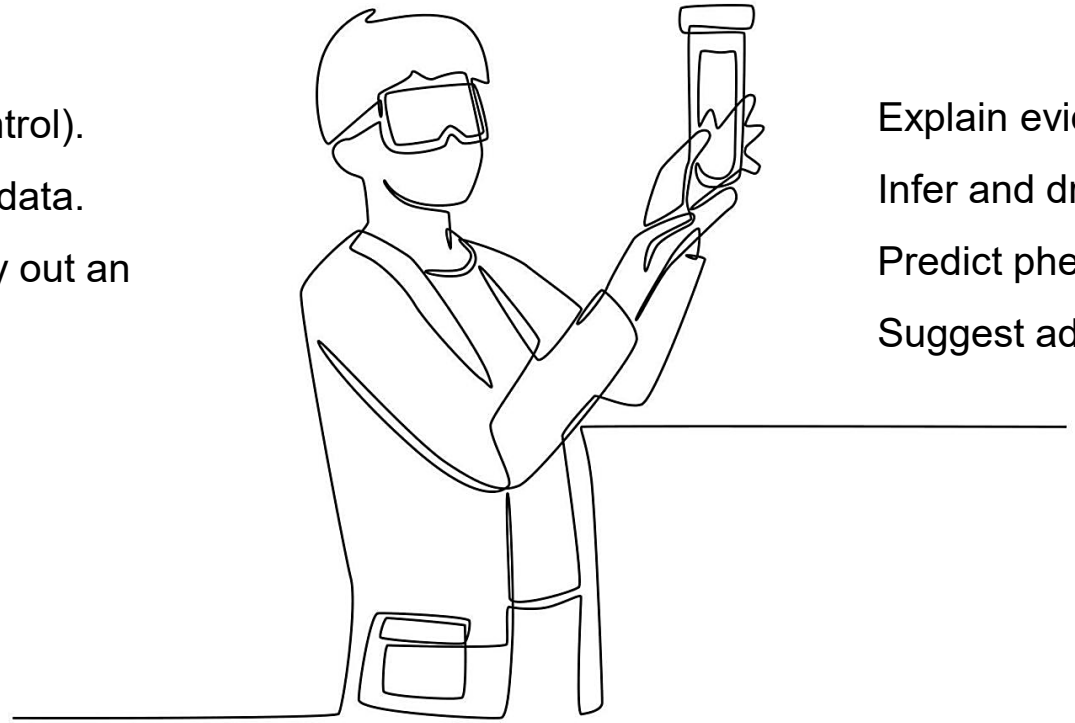
Discern reliability and accuracy of data gathered.

Ask a question and develop aim.

Design a fair test (i.e. variables and control).

Select appropriate apparatus to gather data.

Describe the steps of a protocol to carry out an experiment.



Explain evidence with clear scientific reasoning.

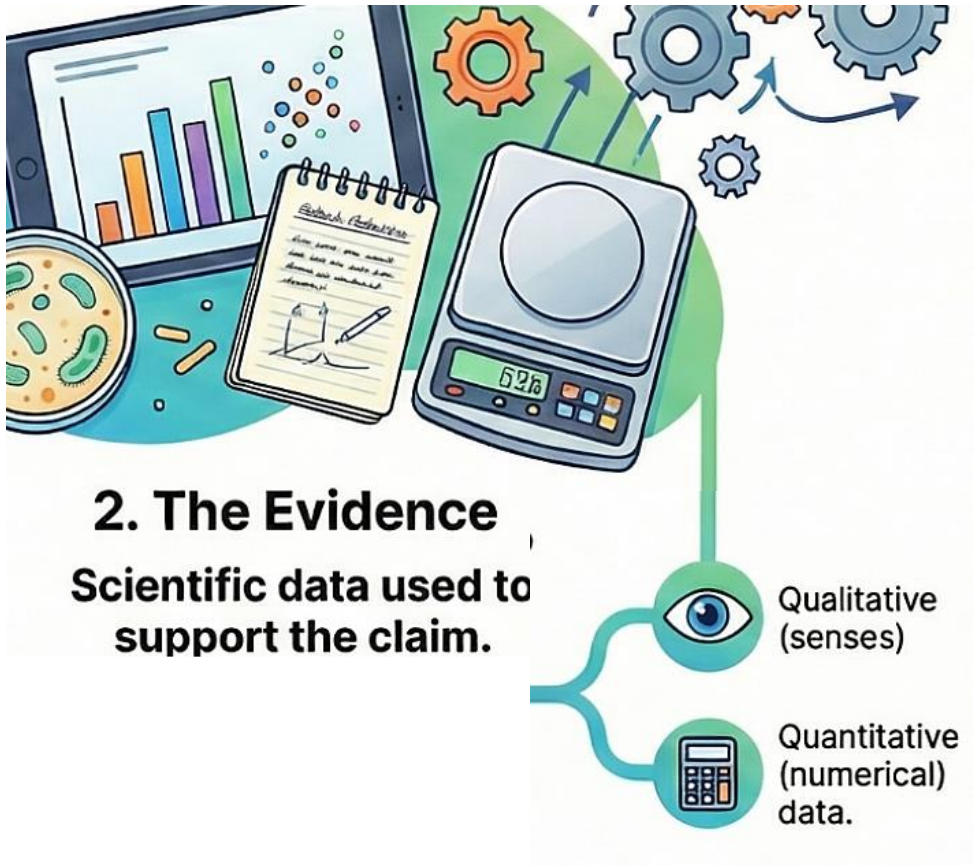
Infer and draw conclusions.

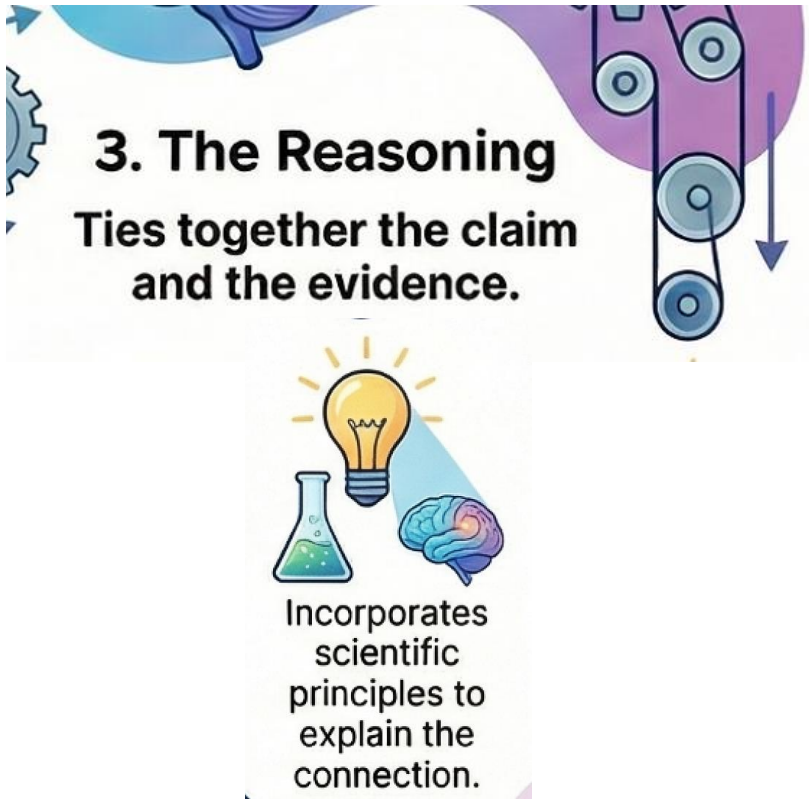
Predict phenomena.

Suggest adaptive or alternative solutions.

CER Strategy

PG





CER Strategy

PG

To be uploaded together with slides on school website

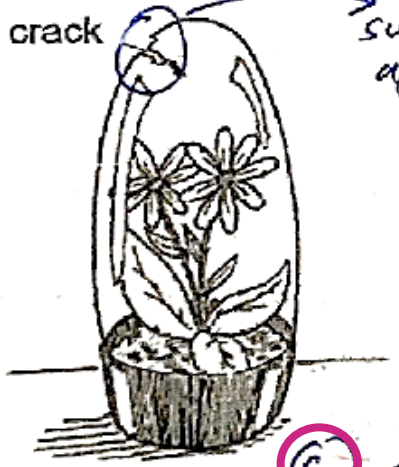
How to write CER (Parent-friendly steps)

A guide to help your child master the Claim-Evidence-Reasoning framework for science assessments

CER Strategy

PG

(b) Min Ho accidentally knocked the terrariun and a crack was observed on the terrarium as shown below.



change. → surface affected. → no cont. supply of water → process in water cycle ↓s.

which process?

(C) no water.

(compare)
△ in structure
↓
△ in function/ process
↓
△ in effect/ results

Explain why the plant in the terrarium withered within two weeks without being watered. [2]

(E) Water vapour escaped from terrarium through crack. 1m

(R) There is lesser condensation in terrarium ½m and lesser water droplets falling back to soil for plant to absorb. ½m

In A Nutshell

Knowledge with Understanding

Science Factual Fluency

Concepts/definitions/characteristics/ properties/factors/processes/functions

Key scientific terms/phrases

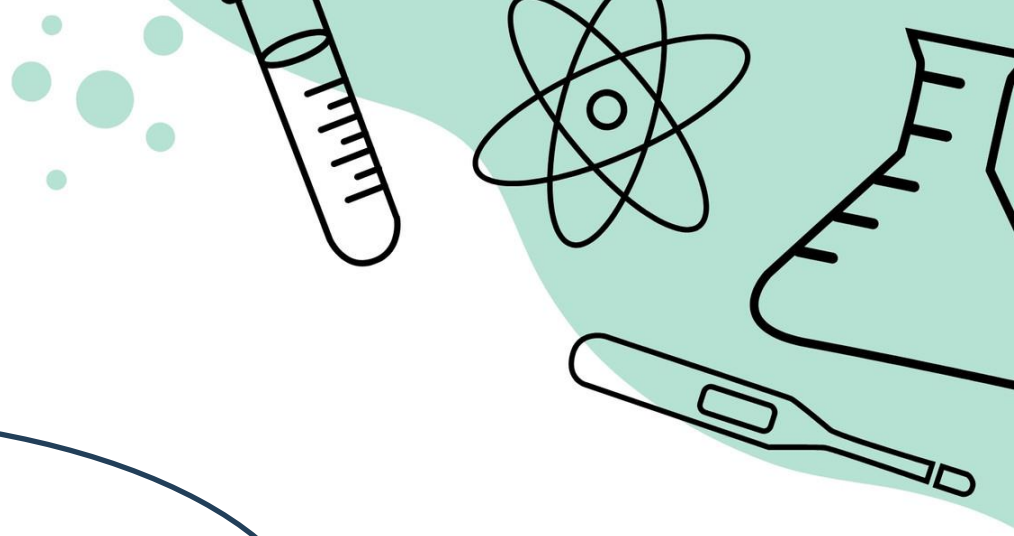
Application of Knowledge and Scientific Inquiry

Real-world context

- Scientific explanation (CER)

Investigative in nature

- Skills and processes



Thank You

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