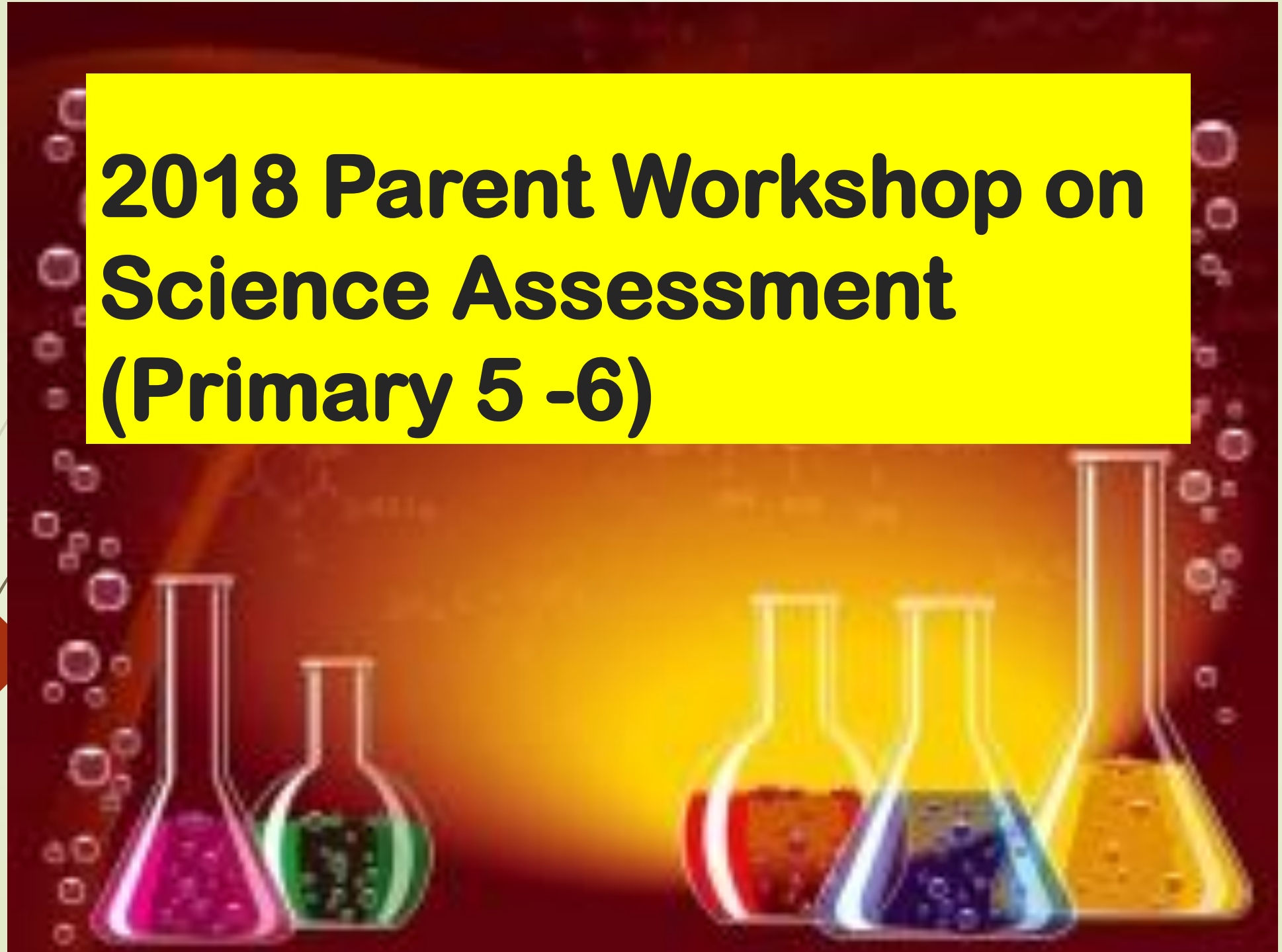
2018 Parent Workshop on Science Assessment (Primary 5 -6)



How does a Scientist work?

- Analyses the situation by asking questions
- Gathers information based on data
- Makes association based on previous scientific research
- Infer, predict, evaluate or conclude

How to do well for open-ended questions?

Think like a Scientist:

- ♣ make associations
- ♣ apply critical thinking skills
- ♣ apply Science concepts to new unfamiliar situations

Types of Questions

State / Name / Identify /Suggest	Only a direct answer is required
Describe / How	Give detailed and relevant details
Explain / Give a reason	Back up with Science concepts
Infer	Logical deduction based on Scientific concepts

Types of Questions

What can you conclude	Analyse data and give a relationship
What do you think will happen	Predict based on data and Scientific concepts
Similarity **Difference**	**Both / All** **Mention both sides using "while" or "but"**
Relationship	Identify the 2 variables and the cause and effect

Why RISSA?

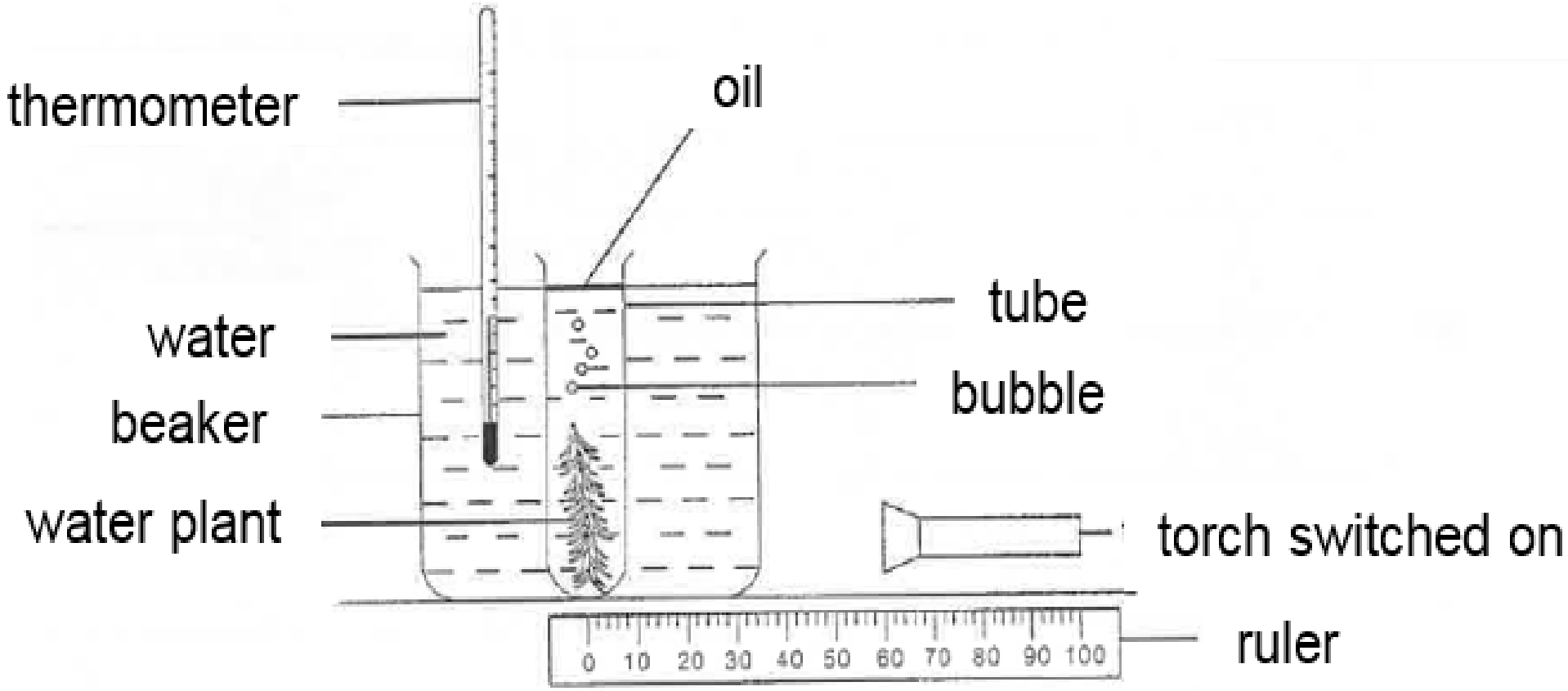
- A structure to help pupils frame their thinking
- Guided and more systematic approach to answering open-ended questions

Read the question → Read the question and note the important points. What are the important points in the question? (ZOOM IN)	Identify important information → Zoom in on the important points and analyse them for meaningful information. What important scientific information can you draw from the important points?	Select relevant Science concepts → Analyse the information for Science concepts / relationships that you must apply for this question. What are the Science concepts / relationships that you must apply in answering this question?
Stem of question:		
Diagram :		
Tables or Graphs :		

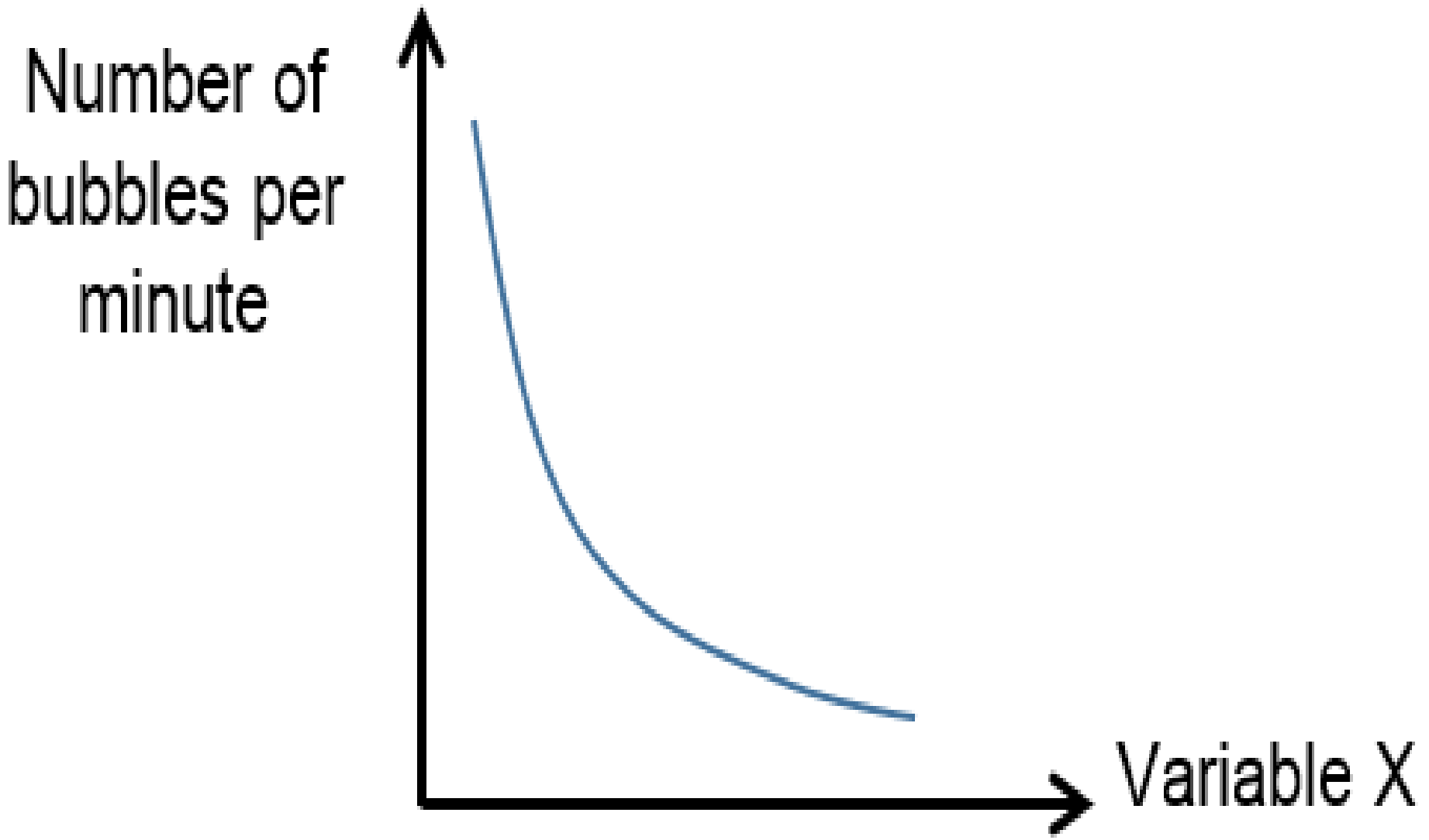
Science Answer → Provide a scientific answer to the questions. What is your scientific answer? What makes you say that your answer is scientific?	Explain type Evidence – Points given in the question Science Concepts and analysis – What you have learnt or what you have analysed Conclusion – What you claim when you answer the question

RISSA
Discussion Time

1. Andrew set up an experiment in a dark room as shown below.



Andrew changed variable X and counted the number of bubbles in the tube. He kept the other variables constant. His results are shown below.

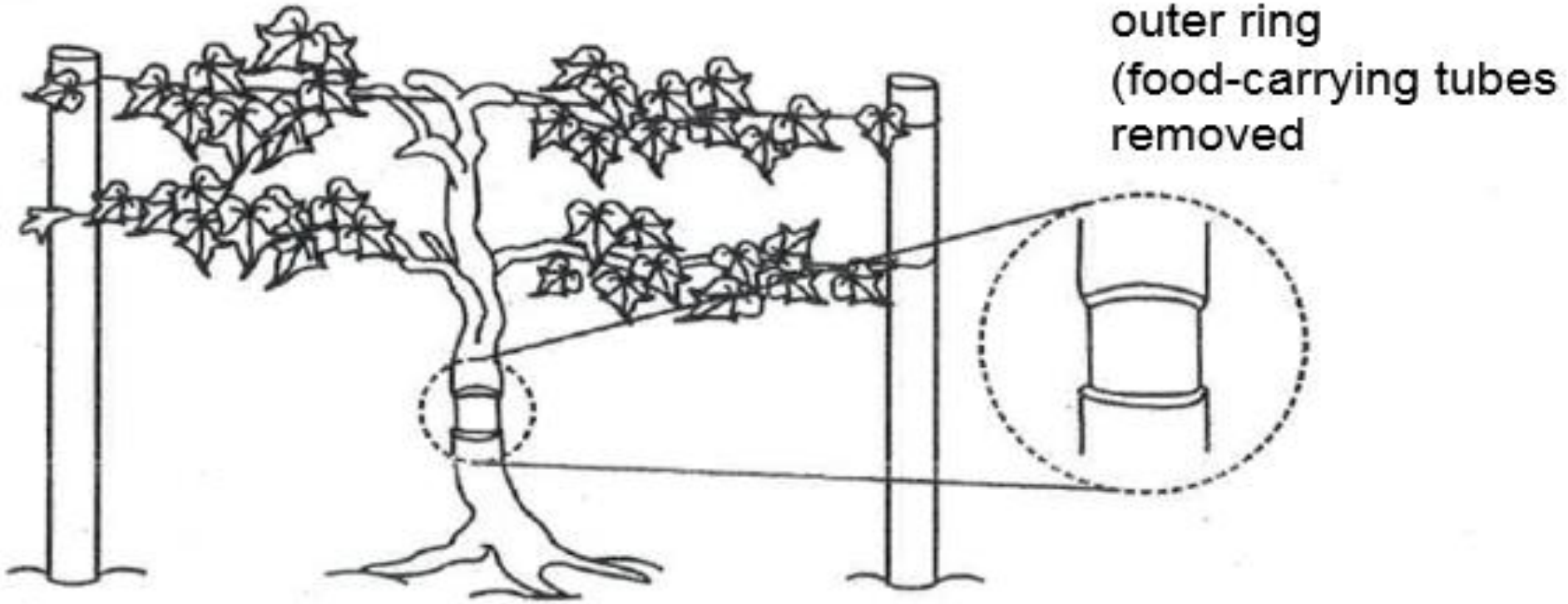

Number of bubbles per minute
Variable X

(a) What is variable X? [1]

(b) Andrew repeated the experiment with some worms and the same water plant in the tube. The number of bubbles formed per minute increased.
Give the main reason for this. [1]

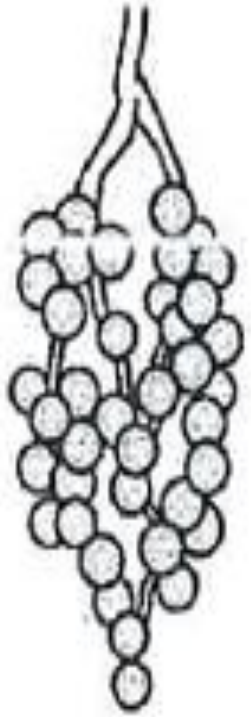
(c) Explain why switching off the torch would cause the worms to die faster than when the torch was switched on. [1]

2. Annabelle conducted an experiment using two similar plants. She removed an outer ring from the stem of one of the plants as shown below. The food-carrying tubes were removed while the water-carrying tubes remained in the stem.



After some time, the two plants produced fruits as shown below.

fruits of plant with outer ring of stem removed



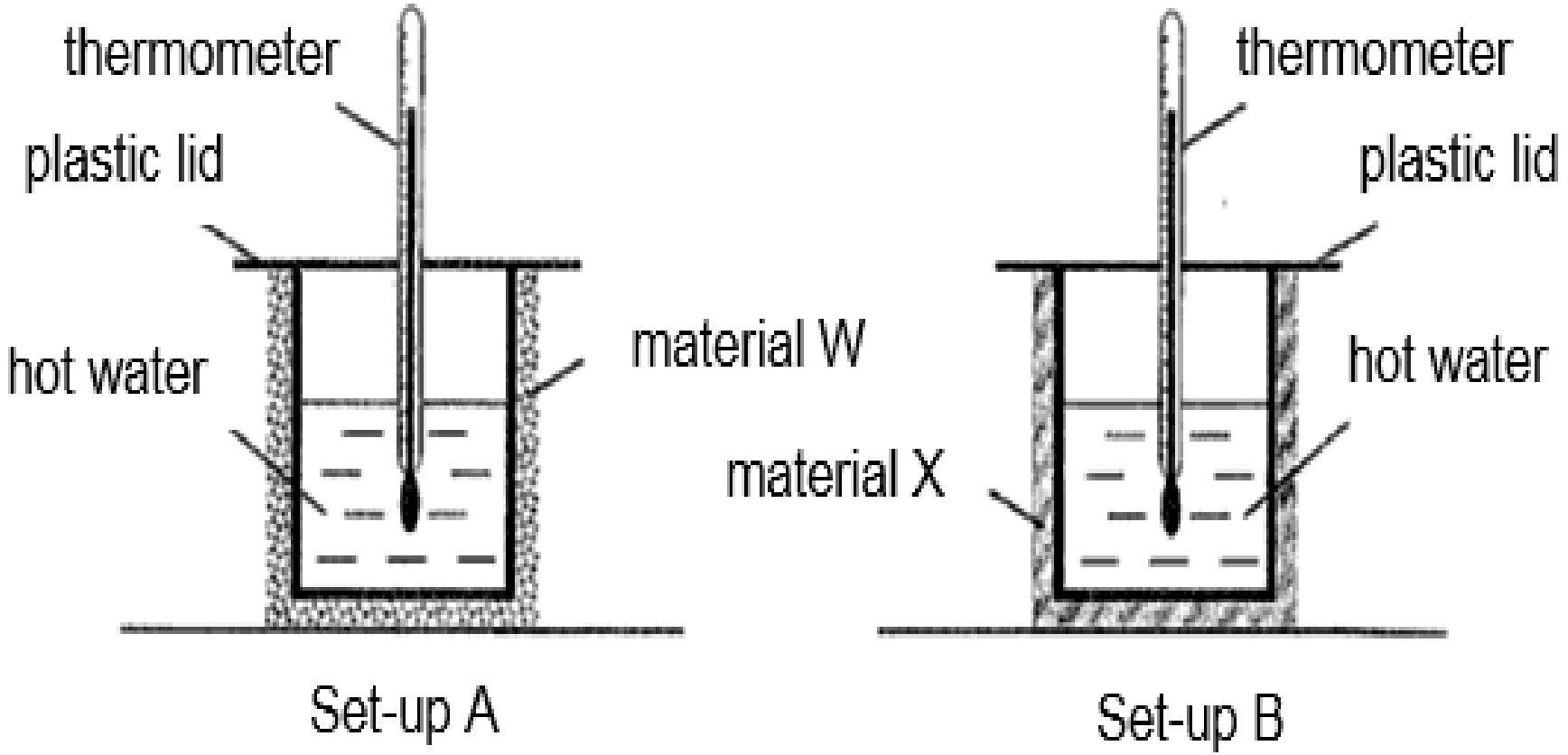
fruits of plant with uncut stem

(a) Annabelle observed that the plant with the outer ring of stem removed produced bigger fruits compared to the other plant. Explain why bigger fruits were produced. [2]

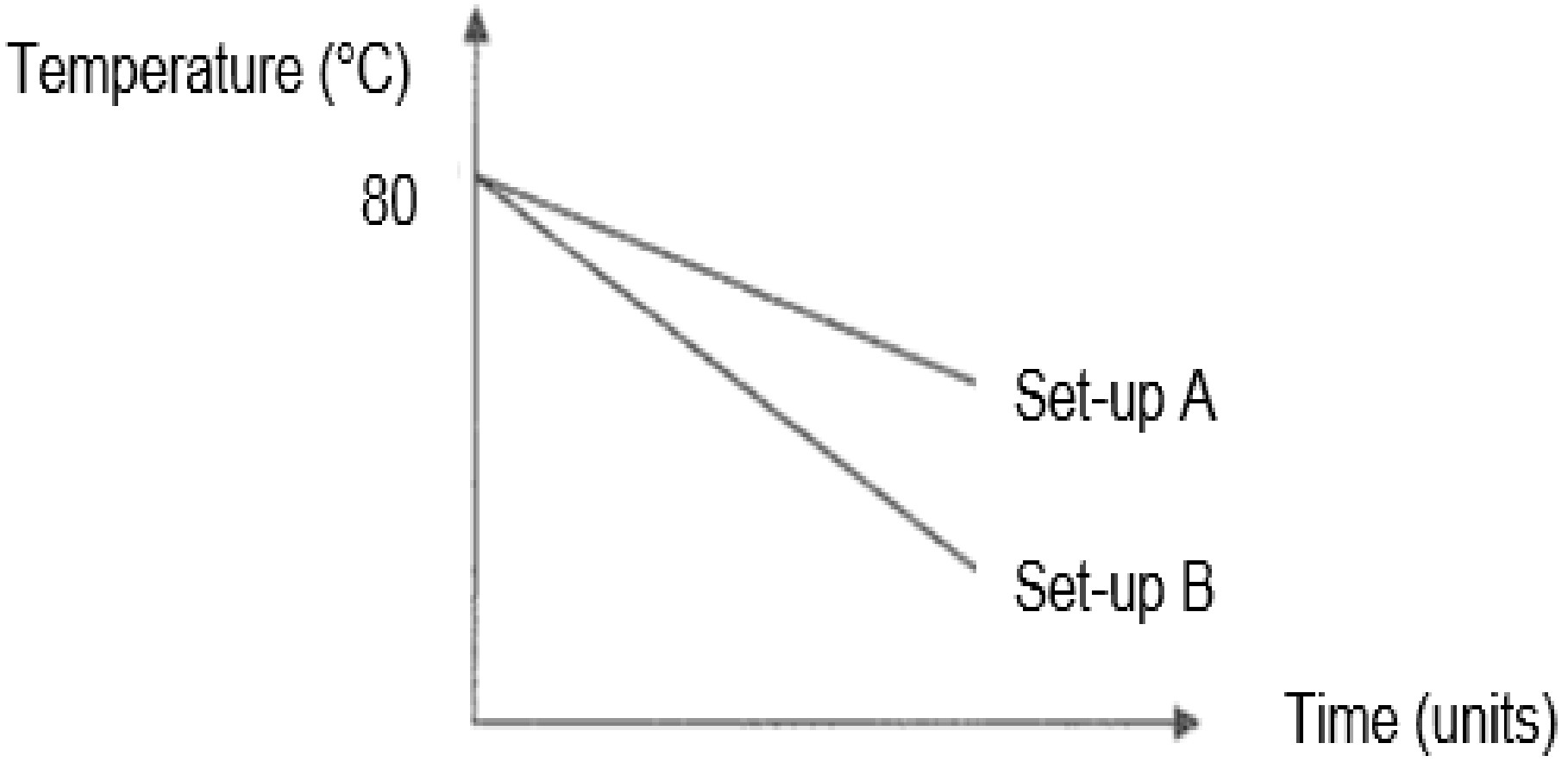
(b) After some time, the plant with the cut stem died. Give a reason why removing the outer ring of the stem caused the plant to die. [1]

RISSA Hands-on

3. Boon Hong conducted an experiment using set-ups A and B shown below. He wrapped a glass beaker with material W and another identical glass beaker with material X. He filled both beakers with the same volume of hot water at 80°C.



Boon Hong measured the temperatures of the water at different times and plotted his results in the graph shown.



(a) Based on his graph, what is the relationship between temperature of the water and time? [1]

_____

(b) What can Boon Hong conclude about how the temperature of the water changes with time in set-up A compared to that in set-up B? [1]

_____

_____

(c) Material W in set-up A was used to make a jacket. This material had small air spaces inside it.

Explain why the air spaces in material W would help keep a person wearing the jacket warm in cold weather. [1]

_____

_____

Can You Spot The Error?

Statement	Correct Statement
Water gained heat and evaporated and condensed on the cooler surface of the lid.	**Water gained heat and evaporated into water vapour which then condensed on the cooler surface to form tiny droplets of water.**

Statement	Correct Statement
At the small intestine, undigested food is absorbed into the blood stream.	**At the small intestine, digested food is absorbed into the bloodstream.**

Statement	Correct Statement
A metal bar attracts a piece of iron when they are brought near each other.	**Only a magnet can attract a piece of iron when they are brought near each other.**

Statement	Correct Statement
Misting fans cool the surrounding air more effectively as the mist loses heat quickly.	Misting fans increases the rate of evaporation of mist produced and more heat is removed from the surrounding, cooling the place more effectively.

Statement	Correct Statement
As a ball is being thrown upwards, the gravitational force acting on it increases.	As a ball is being thrown upwards, the gravitational force acting on it remains the same.


THANK YOU