GEARING FOR THE PSLE SCIENCE (STANDARD) PAPER

Scope & Format

Strategies

Ms Moh Choy Ying
HOD Science
21 April 2018

Format of Paper

Booklet	Item Type	No. of Questions	Marks per question	Weighting
A	MCQ	28	2	56%
B	Open-ended	12 - 13	2 - 5	44%

Duration of Paper: 1 h 45 min

Theme	Life Science	Physical Science
Diversity	▪General characteristics & classification of living things	▪General characteristics & classification of non-living things ▪Materials
Cycles	▪Life Cycles ▪Reproduction	▪Matter ▪Water
Systems	▪Plant Systems ▪Human Systems (Digestive, Respiratory & Circulatory) ▪Cell System	▪Electrical Systems
Interactions	▪Interactions with Environment (food chain, web, interdependence, adaptation, man's impact)	▪Forces (magnets, friction, gravity, elastic spring)
Energy	▪Forms & Uses (Photosynthesis)	▪Forms & Uses (Light, Heat) ▪Energy Conversion

Distribution of Marks

According to Syllabus Content	
Life Science	45-55%
Physical Science	45-55%

According to Assessment Objectives	
Knowledge with Understanding	~40%
Application of Knowledge & Process Skills	~60%

Application of Knowledge & Process Skills (60%)

- **Application – applying concepts in new situations**
- **Process Skills**
  - Inferring
  - Predicting
  - Analysing
  - Evaluating
  - Generating Possibilities
  - Formulating Hypothesis
  - Communicating

Basic Process Skills

- Observation
- Classification
- Using Apparatus & Equipment

EXAMPLES OF QUESTIONS

Knowledge with Understanding

Example 1

Which of the following about **photosynthesis** is correct?

	gas taken in	**gas given out**	**light needed**
(1)	carbon dioxide	oxygen	no
(2)	carbon dioxide	oxygen	yes
(3)	oxygen	carbon dioxide	no
(4)	oxygen	carbon dioxide	yes

Applying Concepts & Scientific Reasoning

Example 2

Boiling point

Change of state: Liquid to gas

Substance T has a boiling point of 24^{o}C.

a) Give a reason why, in a room at 30^{o}C, T is stored in sealed container.

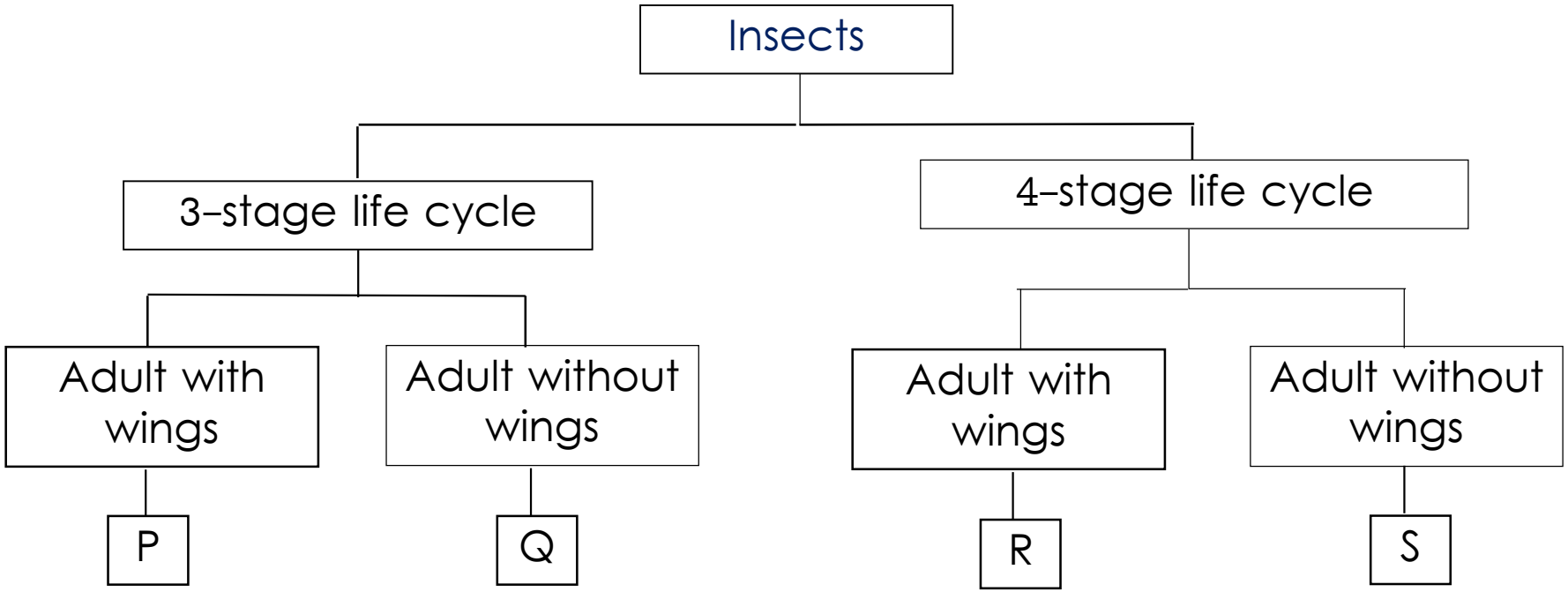
b) Based on the given information, would you be able to tell the state of T at 0^{o}C? Explain your answer.

Nothing is mentioned on freezing point

Skill: Observation & Classification

Example 3

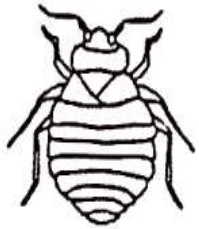
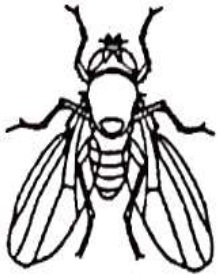
Study the classification chart below.



Skill: Observation & Classification

Example 3

The diagram below shows insects A and B.

Insect A		Insect B	
			
young	adult	young	adult

Young – 3 stages in the life cycle

Has wings

Which group, P, Q, R, S, do insects A and B belong to?

Skill: Analysing Patterns, Inferring

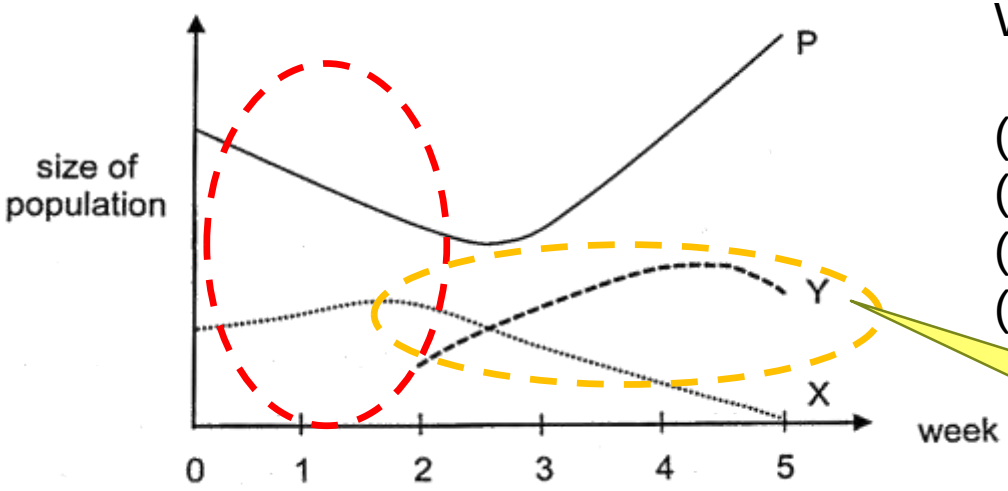
Example 4

John conducted an experiment to study the food relationship between animals X, Y and P.
Animal P feeds on leaves only. Animals X, Y and P had no disease.
At the start, John placed some animals P and X in a tank with some leaves. He counted the number of animals at the end of each week.
After two weeks, he added animal Y.
John's results are shown below.

Disclaimer

At first

Added later



Which of the following is correct?

(1) Animal Y fed on animal X.
(2) Animal Y fed on animal P.
(3) Animal X fed on animal Y.
(4) Animal X fed on animals Y and P.

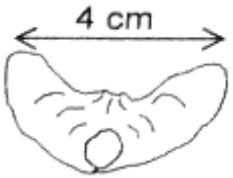
Food chain:
P → X → Y

Skill: Analysing an Experiment (Experiment Design)

Example 5

Aim

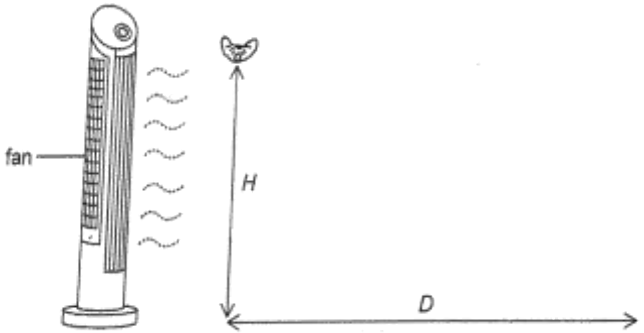
Meifen conducted an experiment to find out how the height at which seed T is dropped affects the distance it travels. Seed T has a 4cm wing as shown.



She dropped seed T from a height (H) in front of a fan as shown. She measured the distance (D) travelled by seed T.

H (cm)	120	100	80	60
D (cm)	50	44	31	15

Make sense of this table



Skill: Analysing an Experiment (Experiment Design)

Example 5 (cont'd)

a) Meifen used the same seed throughout the experiment. Give two reasons how using the same seed helps to make the experiment a fair test.

Fair test

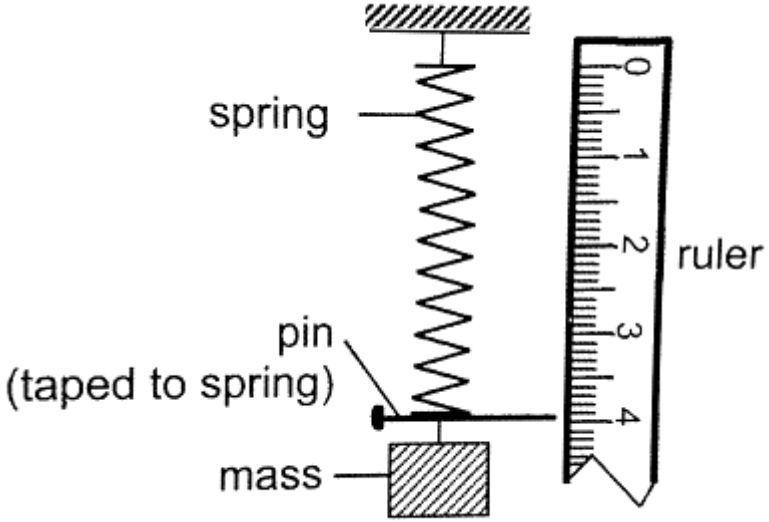
b) Meifen also wanted to find out if the size of the wing on seed T affects the distance it travels. Suggest two variables that she has to keep constant when conducting this experiment.

Aim has changed

Skill: Using Apparatus & Equipment

Example 6

Explain the purpose of the pin in the set-up.



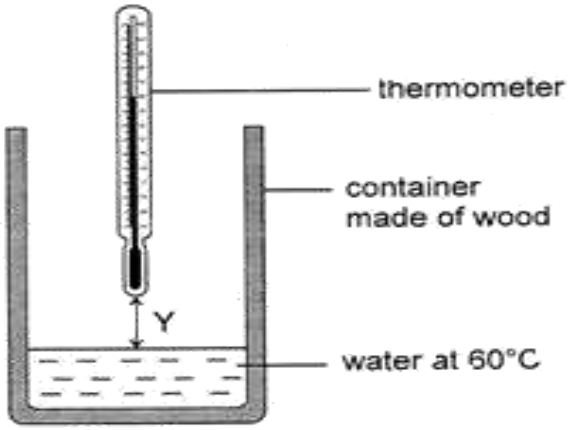
Skill: Analysing, Inferring

Example 7

Martin filled a container made of wood with water at 60°C.

The temperature of water remained at 60°C throughout the experiment.

He measured the temperature of the air at various distance, Y, from the water surface.



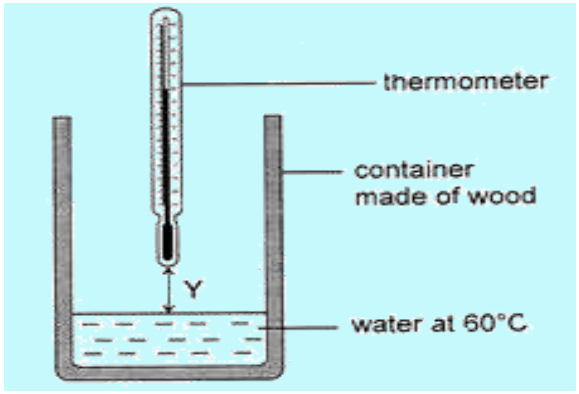
Distance Y (cm)	2	4	6	8	10	12
Temperature of air (°C)	42	36	32	29	27	27

a) Based on the above results, what is the relationship between the temperature of the air and distance Y?

Relationship

Skill: Analysing, Inferring

Example 7 (cont'd)



b) Animal H live in the desert.

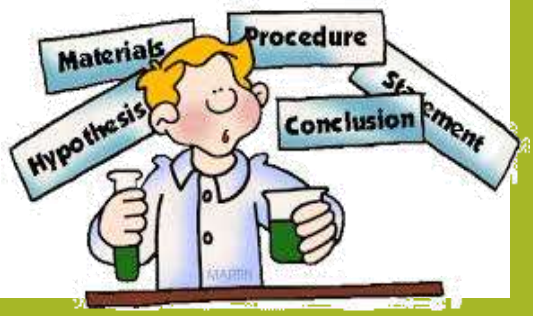
Related to part (a)

It stands on the hot sand with its four long legs.

(i) Based on Martin's findings, explain why having long legs is an advantage for animal H.

What is Important

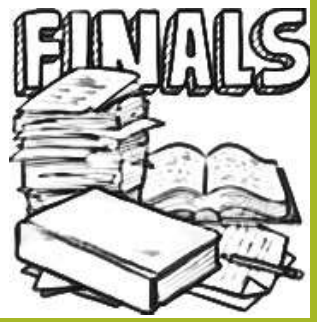
- **Accurate Understanding** of Concepts/"Big Ideas"
  - MAKE CONNECTIONS between concepts learnt
  - APPLY concept in new situations
  - EXPLAIN
- **Strong Foundation** of basic concepts learnt from **P3 to P5**
- **Process Skills**
  - Analyzing information and forming conclusions
  - Interpretation of graphs, grouping, etc.
- **Science Skills**
  - Expt Design – Fair test; Accurate/Reliable results



Gearing towards the PSLE

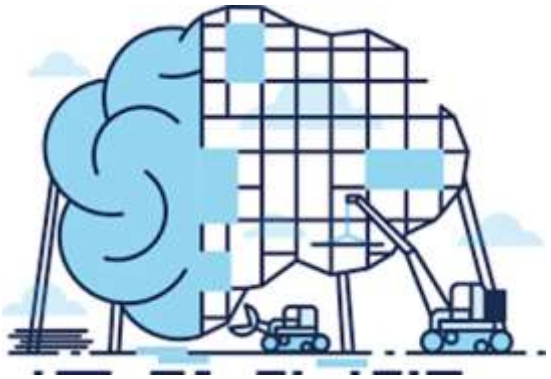
- Understanding vs Memorizing
- Revise P3,4,5 work which forms bulk of PSLE Qns (concepts in the textbook, notes)
- Review questions in revision papers and worksheets (Quantity *AND* Quality)
- Link ideas and concepts e.g. relate digestion and respiration to source of energy in living things

Have an inquiring attitude –
ASK questions & SEEK answers



Some Exam Strategies:

- Use **science concepts**
- Identify …
  - **task** words in question stem e.g. list, explain, suggest, conclude
  - **objective** of question – asking about aim / procedure / pattern / conclusion?
  - **specific concepts** (Topic➔Concept)
- Use **"clues"** & **scaffold**
  - Diagrams., graphs, tables
  - Earlier parts of question
  - Marks given



"model" answers

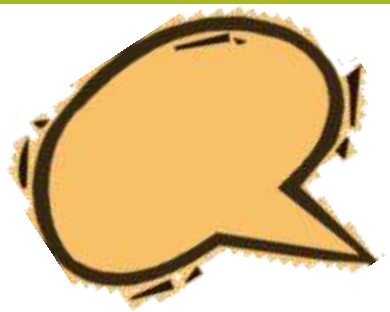
ANSWER *TO* THE QUESTION

Tackling MCQ

- Don't rush through (56 marks= pass!)
- Go through **ALL** options – even if you have an answer in mind
- Use elimination to narrow down to possible answers
- Do "working" in science too!

Tackling Open-Ended Questions

- Use scientific terms
  - e.g. "attracted" vs "stick" or "attach" magnetic objects to magnets
- Answer in context to question
- Clarity in Language - Be clear and specific
  "… the *water* must be the same …"
- Use simple sentences
  - mindful of phrasing that may be interpreted as scientifically incorrect
    "…the water boiled and *it* lost heat and condensed …"



Some Final Points to Note

- Science has EQUAL weighting as other subjects in determining aggregate score
- Science is NOT a difficult subject, as long as concept is thoroughly understood
- Learning Science is about Understanding more than memorizing
- Basic Science skills is important in Secondary education

…and …

Enjoy
Learning Science

Thank you

Ms Moh Choy Ying (HOD Science)
moh_choy_ying@moe.edu.sg

Mrs Sia Song Ling (LT Science)
yong_song_ling@moe.edu.sg