

2017 ACS Primary 6 Prelim Science tested on 25 Aug 2017

Improved Answer Key edited by Mr. Howard Yu < former MOE PSLE Science Marker >
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Booklet B

- Q29 (a) Object X is a magnet.
- (b) When the switch was closed, electricity flowed through the circuit causing the iron rod to be magnetised. The poles of the electromagnet and Object X facing each other were the same, and therefore Object X was repelled.
- (c) Add more batteries or add more coils.

- Q30 (a) Similarity: Both life cycles have an egg stage.
- Difference: Organism P has a 4-stage life cycle while Q has a 3-stage life cycle.
- (b) Pour away stagnant water in vases / flower pots so that P have no suitable place to lay their eggs.

- Q31 (a) Glass X:
The outer surface of the glass.
- Glass Y:
Inner surface of the metal lid.



- (b) The water vapour in the air in glass Y gained heat from the milk and came into contact with the cooler glass and cover where it lost heat and condensed into water droplets.
- (c) Plastic is a poorer conductor of heat than metal. So less water vapour will condense into tiny water drops.
- Q32 (a) The camouflage against the brown twigs. So removing the shell will decrease the chances of predators spotting the chicks and eating them.
- (b) So that it can find food.

Comment:

Q29(b): This is a HOT question, which pupils with lower English ability may not express ideas well. Best to give answer in short sentences or point form. **Must indicate that the Like Poles of the magnets are facing each other. Hence the repulsion.**

29 (c) Add more batteries in series.

Comment:

Q31(a):

Glass X: The outer surface of the glass **below the water level.**

Glass Y: On the inner surface of the metal lid and **the inner surface of the glass above the water level.**

(c) Plastic is So **less water vapour would lose heat** and condense into lesser amount of tiny water droplets.

32 (a) The inner side of the eggshell is white, **will reflect light from the sunlight well, hence will catch the attention of predators. By removing the eggshells will reduce the chance of being spotted by the predators attacking or eating the chicks.**

(b) More food can be found in warmer areas than in cold areas.

- Q33 (a) When the trees are cut down, there will be less roots to hold the topsoil in place. When it rains heavily, the soil will be washed into the rivers and block out most of the light for fully submerged plants to photosynthesise and make food. Without food these plants will die.
- (b) There will be fewer trees to take in carbon dioxide during photosynthesis, so there will be more carbon dioxide in the atmosphere to trap more heat.
- Q34 (a) Gravitational force, frictional force.
- (b) Add a lubricant on the board. This reduces friction between the surface of the board & the surface of the striker, allowing it to move further.

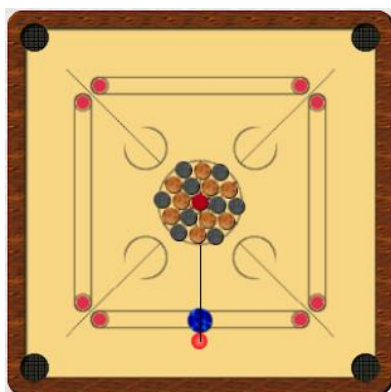
Comment:

Q33(a):

Pupils need to know the consequences of soil erosion.

(b) This is a tricky question, which pupils may not answer well. Hence, they must understand **the property of carbon dioxide which traps heat.**

34(a): Ok.



Scan here to see how to play a carrom game.
Enable internet connection.



Many pupils are not familiar with carrom and most have not enjoyed this game. It was so refreshing that I show them a carrom game on YouTube and promised them a game during the holidays.

I also told them, usually players add body powder on the surface. However, **cannot add liquid lubricant like water or oil, as will spoil the wooden carrom board.**

34(b) If pupils are required to 'explain'....

When frictional force is being mentioned, must indicate (what is the lubricant), which reduces the friction between (what surface) and (what surface). Resulting in (what consequences).



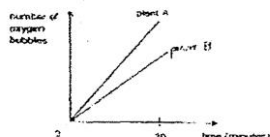
A good primary Science Education must be forward-looking and innovative. It must prepare our present cohort of primary pupils to meet the challenges of the global's Innovative Economy in the next 10 years. – Howard Yu (Founder, 1 Academy)

Q35 (a) The metal cup. Metal is a better conductor of heat and it loses heat to the surroundings faster than styrofoam.

(b) Ice-cube A. There is more water in the cup as the metal cup gained heat faster from the surroundings to the ice cube which caused the ice cube to melt faster.

Q36 (a) To find out if the type / cleanliness of water affects the rate of photosynthesis in a water plant.

(b)



(c) The water plants will not be able to receive sufficient sunlight for photosynthesis and will not produce enough oxygen for the fishes to breathe.

Q35 (b): From the question, having two identical ice-cubes seems very unlikely. A better way to say it should be: two ice-cubes having identical volume.

Q36 (a): Ok.

(b): Ok. Take note, the end of graph B must end at 20 min.

(c): change the word 'breathe' to 'respire'. **There is a major technical difference between breathing and respiring. Respiration happens within the cells, while breathing is the inhale and exhales of gases in our respiratory system.**

Hence, from a PSLE conceptual requirement benchmark, if the key concept 'respire or respiration' is missing, full marks cannot be awarded.

Q37 (a) The average size of stomata is never at 0 units. / The smallest average size of stomata is 1 unit.

(b) There is no light / less light / least light for photosynthesis.

(c) It will allow more / too much water vapour to escape. The plant will lose more / too much water.

Comment:

Q35(a): A comparison of better conductor of heat is needed.

The answer provided here needs closer examination.

Assuming that the 60-min time is sufficient to allow both cups to reach the same room temperature. Then a better explanation should be the following:

The metal cup. Since metal is a better conductor of heat than styrofoam, the body heat from Sarah's hand is able to be conducted more quickly by the metal than by the styrofoam. The greater heat lost to the metal caused Sarah's hand to feel colder.

Comment:

Q37(a): This question is testing the process skills called 'communication'.

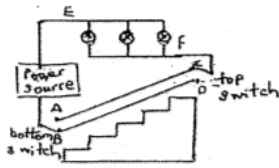
(b): Light intensity is the lowest from 6pm to 9pm, therefore gaseous exchange for photosynthesis is lowest.

Referring to the question, perhaps is better to say, "Suggest a reason why the size of the stomata is smallest from 6pm to 9pm. As water lost through the stomata could be another reason.

Q38 (a) David can connect the bottom switch to point A.

(b) David could connect the top switch to point D.

(c)



(d) If one bulb fuses, the others will still light up.

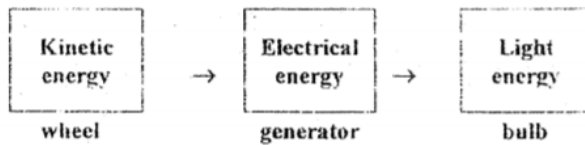
Q39 (a) The level of liquids in P and Q will decrease but the level of liquid in P will be lower than Q.

(b) When ice is added, liquid P will lose heat faster than liquid Q and contracts more than liquid Q.

(c) Air is a poor conductor of heat and will reduce the amount of heat lost from the room to the colder environment / air outside.

Q40 (a) It is transparent and allows light to pass through.

(b)



Comment:

Q38(a): Ok.

(b): Ok.

(c): The circuit diagram seems easy. However, if done wrongly can result in a short-circuit.

(d): Ok.

Q39 (a) to (c): All ok.

This is a 5-mark heat concept application question. Heat is a very important concept tested very often in PSLE.

Q40 (a) to (b): All ok.



MOE PSLE Science Process Skills: The top two definitions:

1. Describe	Pupils are required to give relevant details about an object or event. You are not required to explain your answer.
2. Explain (most pupils lose marks here due to incomplete reasons given) Give reason(s) for your answer.	Pupils are required to give reasons or make something clear and simple to understand. It is not enough to give only the key words as an answer.

PUT
YOUR HOPE
IN GOD