

Edexcel International Primary Curriculum Science

Year 6 Achievement Test
Sample Assessment Material
and Sample Mark Scheme

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For Further information please contact:

Edexcel Service operations (entries and registrations) serviceoperations@edexcel.com

Tel: +44 (0)844 463 2535

Or Edexcel Customer Services: +44 (0)1204 770696

Contents

Paper PLSC01

Sample Assessment Material	1
Sample Mark Scheme	29

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Write your name here	
Surname	Other names
Edexcel International Primary Curriculum	Centre Number
	Candidate Number
Science	
Year 6 Achievement Test	
Sample Assessment Material Time: 1 hour 20 minutes	Paper Reference PLSC01/01
You do not need any other materials.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Sample Assessment Material

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1

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PEARSON




SECTION A

Answer ALL questions


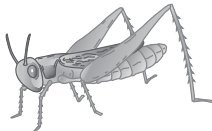

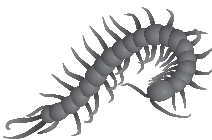
For questions 1 – 8 put a cross in one box ☐ to indicate your answer.

If you change your mind, put a line through the box ☒ and then put a cross in another box ☐.
Each question is worth one mark.

1 This is part of a food chain.

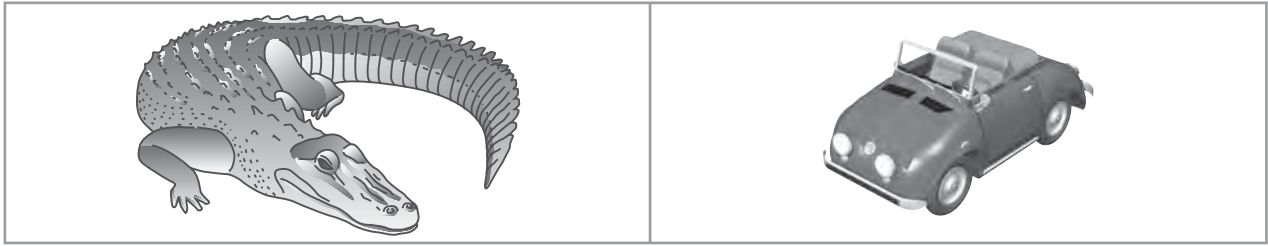
Stage 1		Stage 2		Stage 3		Stage 4
	→		→		→	
		snail		bird		fox

Which living thing is missing from the first stage of the food chain?

<input checked="" type="checkbox"/> A	 ant
<input checked="" type="checkbox"/> B	 grasshopper
<input checked="" type="checkbox"/> C	 grass
<input checked="" type="checkbox"/> D	 centipede

(Total for Question 1 = 1 mark)

2 The drawings show a crocodile and a remote controlled car.



What can both the crocodile and the remote controlled car do?

- ☐ A breathe
- ☐ B feed
- ☐ C grow
- ☐ D move

(Total for Question 2 = 1 mark)

3 The photograph shows an ivy plant growing up a pole.



Why does the ivy grow high up the pole?

- ☐ A to reach light
- ☐ B to reach minerals
- ☐ C to reach oxygen
- ☐ D to reach water

(Total for Question 3 = 1 mark)

4 This woodlouse lives under stones and leaves.



What is the name for this area?

- ☐ A forest
- ☐ B garden
- ☐ C habitat
- ☐ D home

(Total for Question 4 = 1 mark)

5 The drawing shows a flower.



What is the name of part X?

- ☐ A stigma
- ☐ B stamen
- ☐ C petal
- ☐ D ovule

(Total for Question 5 = 1 mark)

6 People visiting hospitals have to rub a disinfectant solution onto their hands.

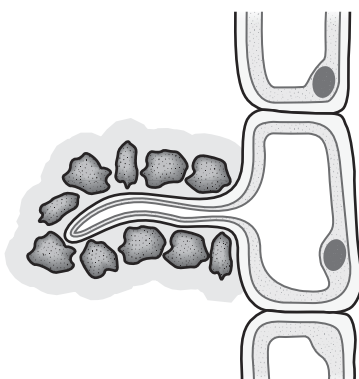


This disinfectant solution prevents disease by helping to stop:

- ☐ A dirt clinging on to the hands
- ☐ B the production of sweat
- ☐ C the skin flaking off
- ☐ D the spread of micro-organisms

(Total for Question 6 = 1 mark)

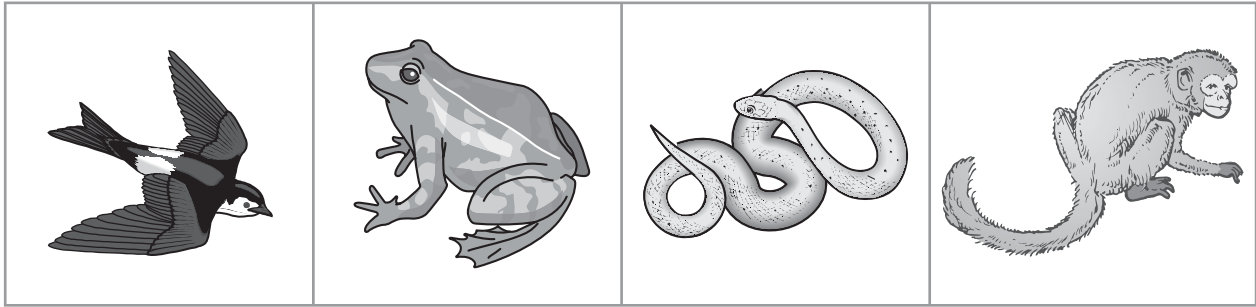
7 What is the function of this cell?



- ☐ A It absorbs carbon dioxide
- ☐ B It fertilises an ovule
- ☐ C It takes in water
- ☐ D It traps light

(Total for Question 7 = 1 mark)

8 What group do all these living things belong to?



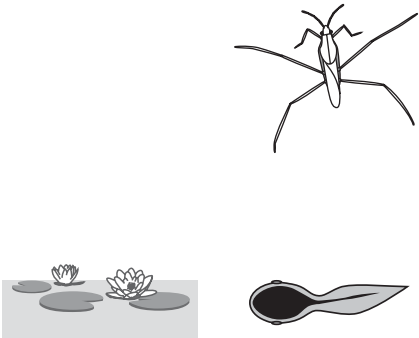

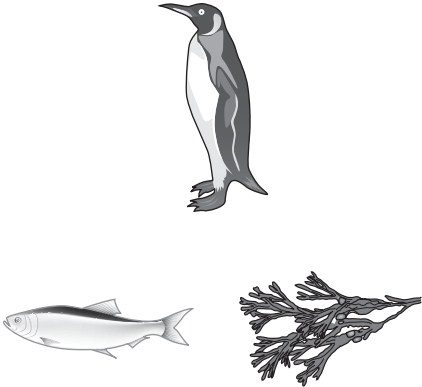
- ☐ **A** amphibians
- ☐ **B** mammals
- ☐ **C** reptiles
- ☐ **D** vertebrates

(Total for Question 8 = 1 mark)

9 (a) Look at the three sets of living things.

Write **sea** or **pond** or **garden** under each set of pictures to show where these plants and animals live.

(1)

Set 1	Set 2	Set 3
		
.....

(b) This bird is a curlew. It feeds on worms that burrow deep into sand on the sea shore.



How is the curlew able to feed on worms deep in the sand?

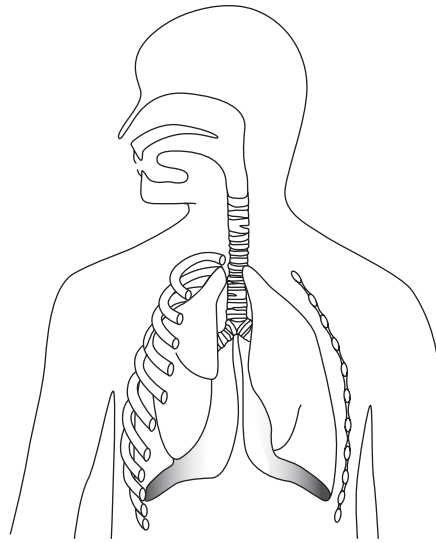
(1)

(Total for Question 9 = 2 marks)

10 (a) The diagram shows some of the organs in the chest.

Write the letter H to show where the heart should be.

(1)



(b) Len is running to keep fit.



Len's heart beats faster when he starts to run.

What is the function of the heart?

(1)

(c) Len also breathes more quickly as he starts to run.

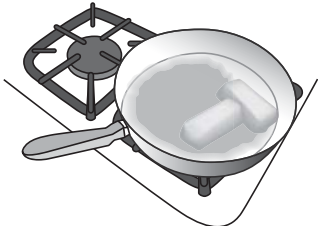


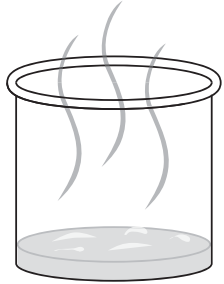
Why does he need to breathe more quickly?

(1)

(Total for Question 10 = 3 marks)

For questions 11 – 16 put a cross in one box ☐ to indicate your answer.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☐.
Each question is worth one mark.

11 Which change is called melting?

	
<input checked="" type="checkbox"/> A solid to liquid	<input checked="" type="checkbox"/> B gas to liquid
	
<input checked="" type="checkbox"/> C liquid to solid	<input checked="" type="checkbox"/> D liquid to gas

(Total for Question 11 = 1 mark)

12 Which of these **cannot** be changed back?

- ☐ A freezing orange juice
- ☐ B boiling water
- ☐ C frying an egg
- ☐ D dissolving salt in water

(Total for Question 12 = 1 mark)

13 What are the best conditions for drying clothes?

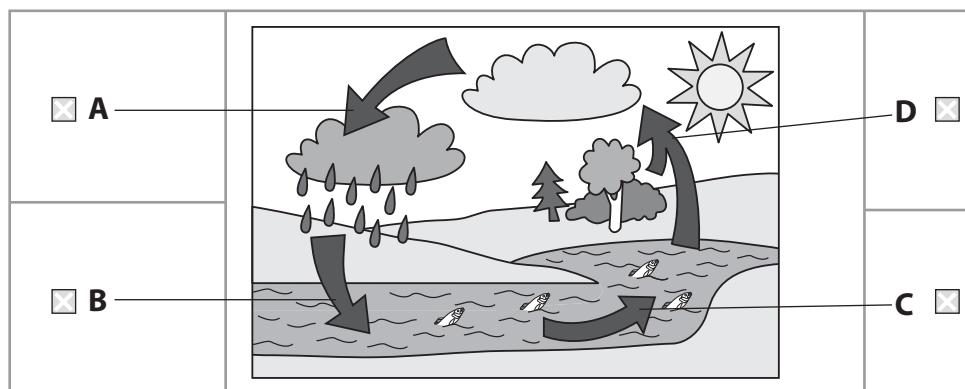


- ☐ A damp and cold
- ☐ B damp and warm
- ☐ C dry and cold
- ☐ D dry and warm

(Total for Question 13 = 1 mark)

14 The drawing shows the water cycle.

Which arrow shows water evaporating?



(Total for Question 14 = 1 mark)

15 The picture shows a rusty bolt. The surface of the bolt has been changed.



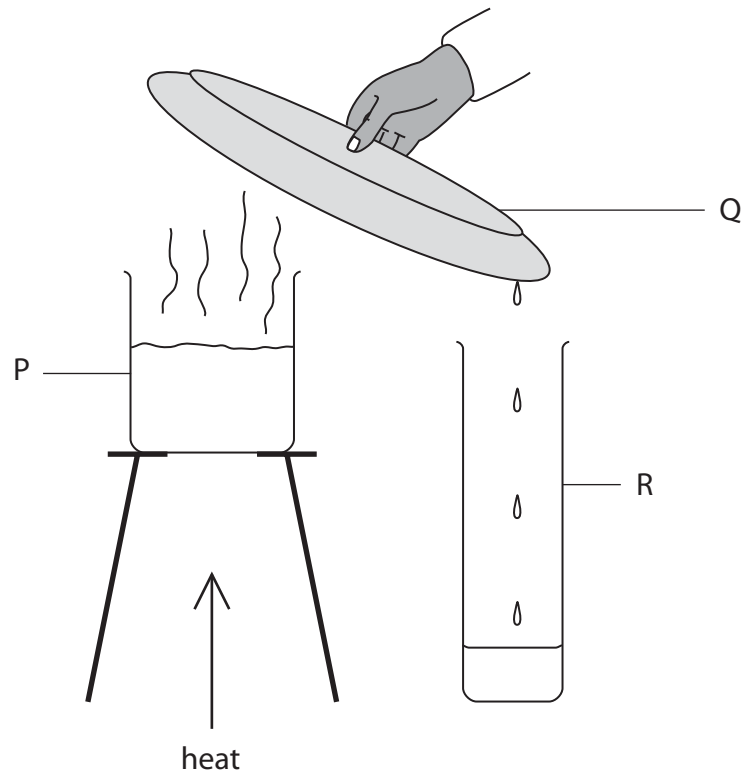
Why can it not be changed back?

- ☐ **A** Rust does not dissolve in water
- ☐ **B** Rust forms at any temperature
- ☐ **C** Rust happens quickly
- ☐ **D** Rust is a different substance

(Total for Question 15 = 1 mark)

16 A solution of sugar is heated in P. Water vapour is cooled in Q.

Drops of pure water are collected in R.

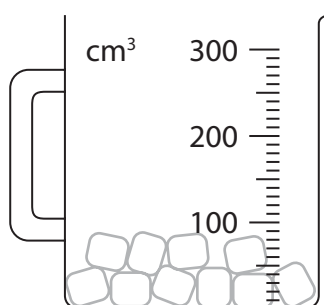


What is this process called?

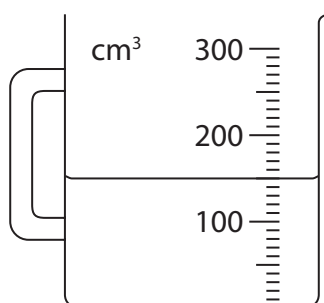
- ☒ **A** cooling
- ☒ **B** distillation
- ☒ **C** heating
- ☒ **D** separation

(Total for Question 16 = 1 mark)

17 (a) Kate put 10 ice cubes into a jug.



She left the jug in a warm place. It took four hours for the ice cubes to melt.

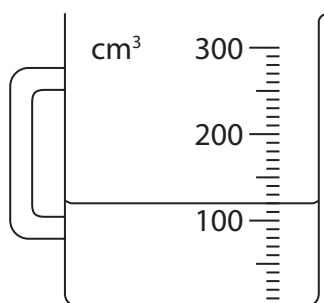


What change had taken place? Complete the sentence.

The ice had changed from a solid into a

(1)

(b) Kate left the jug in a warm place for 24 hours. She noticed that the volume of water in the jug had decreased.

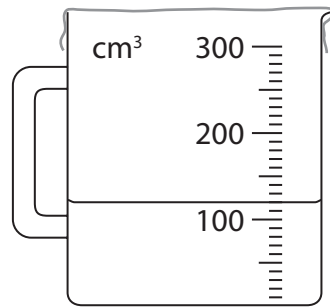


Why was there less water in the jug 24 hours later?

(1)

.....

- (c) Kate covered the jug with plastic film and left it in a warm place for another 24 hours.



24 hours later the volume had not changed. Give the reason for this.

(1)

- (d) Kate put 10 ice cubes in a jug in the fridge. It took 16 hours for the ice cubes to melt.

Why did it take longer for the ice cubes to melt in the fridge than in the warm room?

(1)

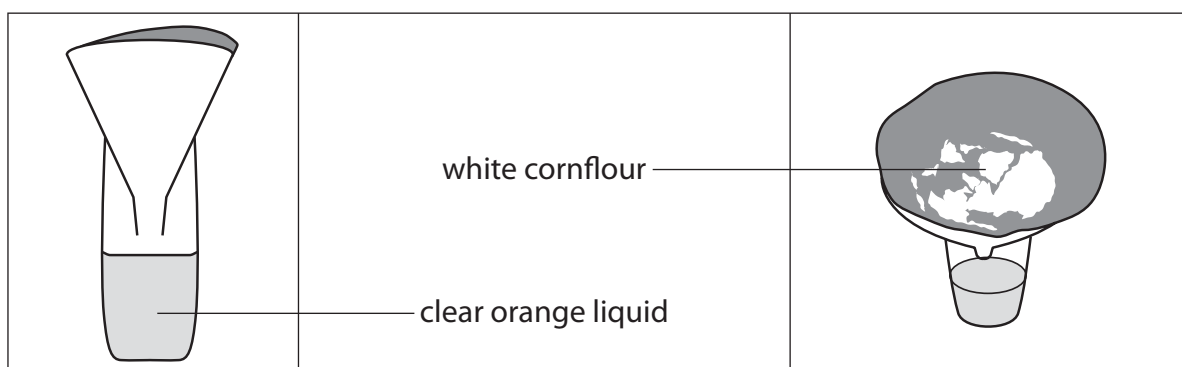
(Total for Question 17 = 4 marks)

18 This is a label from a packet of instant pudding mix.

INGREDIENTS
white cornflour
orange colouring
sugar

Lisa wanted to separate the white cornflour from the other ingredients.

She mixed some of the instant pudding mix with cold water and poured it through paper in a funnel.



The clear orange liquid passed through the paper but the white cornflour stayed in the paper.

(a) Give the name of this method of separation.

(1)

(b) Write YES or NO in the correct column for each ingredient.

(1)

Ingredient	Did it dissolve in the water? YES or NO
orange colouring	
white cornflour	

(c) (i) Would you expect the sugar to stay in the paper with the cornflour or pass through it with the colouring and water?

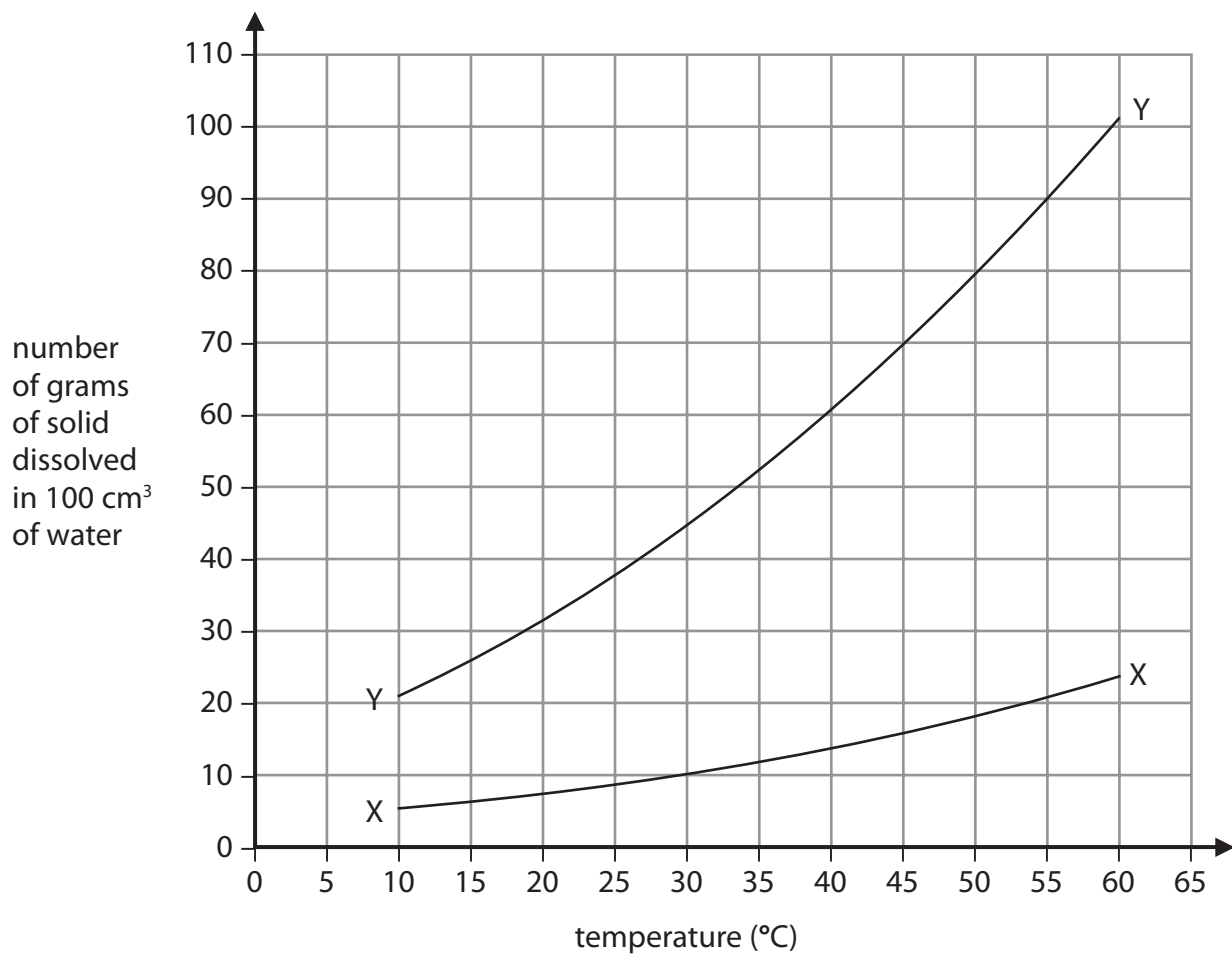
(1)

(ii) Explain your answer.

(1)

(Total for Question 18 = 4 marks)

- 19** Jane plotted a graph to show two solids, X and Y, dissolved in 100 cm^3 of water at different temperatures.



- (a) At what temperature does 10 g of solid X dissolve in 100 cm^3 of water?

(1)

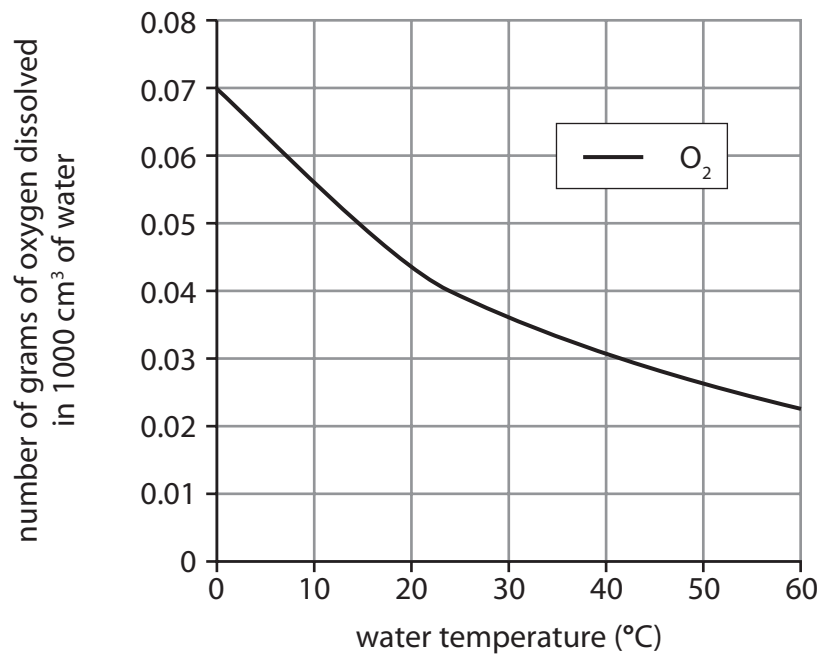
.....

- (b) How can you tell that increasing the temperature affects solid Y more than solid X?

(1)

.....

- (c) Mike plotted another graph to show how many grams of oxygen dissolved in 1000 cm^3 of water at different temperatures.



How is the shape of Jane's graph different from Mike's graph?

(1)

(Total for Question 19 = 3 marks)

**For questions 20 – 21 put a cross in one box ☐ to indicate your answer.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☐.**
Each question is worth one mark.

20 Give one property of the metal copper which makes it a good material for use in electrical wires.

conductor ☐

insulator ☐

shiny ☐

solid ☐

(Total for Question 20 = 1 mark)

21 Sophie enjoys surfing in the sea. What is the name of the force that keeps the surfboard up floating on the surface of the water?



a pull ☐

a push ☐

friction ☐

upthrust ☐

(Total for Question 21 = 1 mark)

22



- (a) Friction is a force that can slow a surf board down. Describe how this force can be reduced.

(1)

- (b) While Sophie is surfing, she notices that a ship going out to sea goes out of sight. Why does the ship go out of sight?

(1)

- (c) Describe how the Earth moves to cause day and night?

(1)

- (d) Sophie said that she would like to return to the beach next year. Why does a year have 365 days?



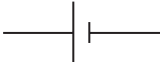

(1)

(Total for Question 22 = 4 marks)

23 Harvey needs to build an electric circuit with a bulb that can be switched on and off.

(a) Match the components with the correct symbols.

(3)

Component	Symbol
Bulb	
Wire	
Cell	
Switch	

(b) Draw a circuit diagram to show the electric circuit that Harvey could build.

(2)

(c) How could Harvey make the bulb light up brighter?

(1)

(Total for Question 23 = 6 marks)

24 Brian plays a guitar by plucking the strings to make a sound.



- (a) Describe what happens to the strings of the guitar when they are plucked so that they make a sound?

(1)

- (b) Brian plucks the strings harder, what will happen to the sound?

(1)

- (c) Brian is in his room. The doors and windows are closed. But he can still hear the music from a party in the room next door.

Brian would like to increase the pitch of the sound. Describe how the guitar strings can produce a sound of a higher pitch?

(1)

(Total for Question 24 = 3 marks)

TOTAL FOR SECTION A = 45 MARKS

SECTION B

Answer ALL questions.

25 Louise bakes a cake.



Cake before baking



Cake after baking

(a) Tick one box after each sentence to show if it is true or false.

(2)

As the cake bakes, it...

	True	False
gets bigger		
gets heavier		
changes shape		
changes colour		

(b) Louise would like to measure the mass of a cake. What should she use to do this?
Louise should use a: (tick one box)

(1)

measuring cylinder ☐

thermometer ☐

spring balance ☐

stop watch ☐

(c) Name one thing Louise should do to stay safe when baking a cake.

(1)

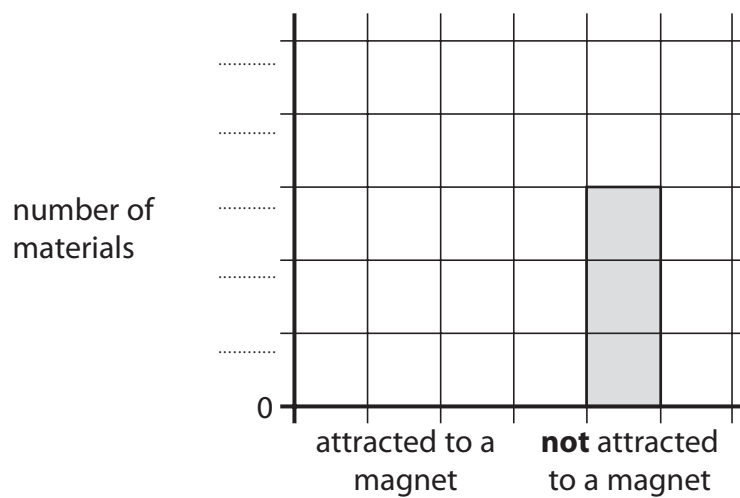
(Total for Question 25 = 4 marks)

- 26 (a) Pupils tested some objects to see if they were attracted to a magnet. They made some notes of their results.

Objects attracted to a magnet	Objects not attracted to a magnet
iron nail	brass key
steel can	wooden peg
	plastic toy

- (i) Fill in the missing spaces on the y-axis to complete the scale.
The first number has been done for you.

(1)



- (ii) Draw a bar on the chart to show the number of objects attracted to the magnet.

(1)

- (b) Jack wrote 'this test worked' as his conclusion for his test.
Why is this not a useful scientific conclusion?

(1)

.....

.....

(c) Tom and David describe their ideas about metals.

All metals are magnetic

Tom

Only some metals are magnetic

David

They recorded some observations from their test in a table.

Does each observation support their ideas?

Tick one box on each row of the table.

(2)

Observation	Supports Tom's idea	Supports David's idea	Does not support either idea
The iron nail is attracted to the magnet			
The steel can is attracted to the magnet			
The brass key is not attracted to the magnet.			
The plastic toy is not attracted to the magnet			
The wooden peg is not attracted to the magnet			

- (d) Tom said 'To improve our test we should have measured how far each material moved when it was attracted to the magnet.'

David said 'This would not improve our test'

Why was David right to think this would not improve their test?

(1)

(Total for Question 26 = 6 marks)

27 Kim has three different types of onion seed.

She wants to find out which onion seed germinates most quickly.



Kim: 'to make my investigation fair, I will use the same type of soil, and watering cans of the same colour.'

- (a) Why does using the same type of soil for each onion seed help to make Kim's test fair? Give a reason for your answer.

(1)

- (b) Using watering cans of the same colour for each bean seed does not help to make Kim's test fair. Give a reason for your answer.

(1)

(c) The table shows some of the factors in Kim's investigation.

Complete the table to show how Kim should carry out her investigation. Tick one box in each row.

(2)

Factor	What is to be changed	What is to be kept the same	Factors to be measured
The type of onion seed			
The time taken for the onion seed to germinate			
The place where the onion seeds are left			
The type of pot the onion seed is grown in			

(d) Jane thought it would be better if Kim used more than one of each type of onion seed.

How could using more than one of each type of onion seed improve Kim's investigation?

(1)

.....

.....

(Total for Question 27 = 5 marks)

TOTAL FOR SECTION B = 15 MARKS
TOTAL FOR PAPER = 60 MARKS

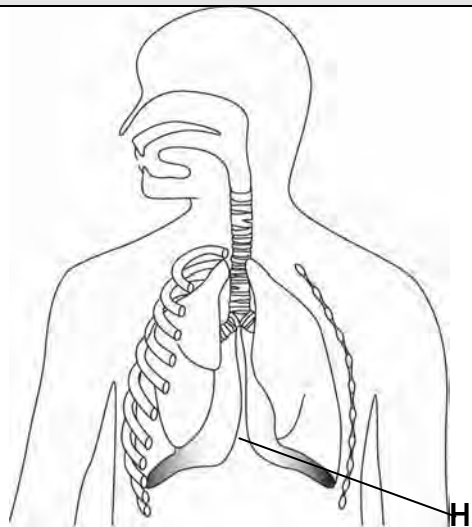
Mark Scheme for paper PLSC01

Section A

Question Number	Answer	Mark
1	Key C	1
2	Key D	1
3	Key A	1
4	Key C	1
5	Key B	1
6	Key D	1
7	Key C	1
8	Key D	1

Question Number	Answer	Mark
9 (a)	Set 1 - pond Set 2 - garden Set 3 - sea	1

Question Number	Answer	Mark
9 (b)	It has a long pointed beak OR It can reach them with its beak. OR It is adapted for feeding. <i>Allow sensible descriptions</i>	1

Question Number	Answer	Accept	Mark
10 (a)			1

Question Number	Answer	Accept	Mark
10 (b)	Pumps blood/Maintains the circulation	Accept Transports oxygen/ca rbon dioxide/fo od/waste etc	1

Question Number	Answer	Accept	Mark
10 (c)	To take in more air/oxygen OR To take in air/oxygen faster OR For increased respiration		1

Question Number	Answer	Mark
11	Key A	1
12	Key C	1
13	Key D	1
14	Key D	1
15	Key D	1
16	Key B	1

Question Number	Answer	Reject	Mark
17(a)	Liquid		1

Question Number	Answer	Reject	Mark
17 (b)	Water had evaporated/gone into the air/changed into a vapour or gas		1

Question Number	Answer	Reject	Mark
17 (c)	The plastic film prevented water evaporating/vapour could not pass through the plastic film/water could not evaporate through the plastic fil	it was covered with plastic film/it had a lid	1

Question Number	Answer	Accept	Mark
17(d)	Ice gained heat more slowly/ice needs heat to melt	the fridge was colder than the room /the fridge was too cold	1

Question Number	Answer	Reject	Mark
18 (a)	Filtration		1

Question Number	Answer	Reject	Mark
18 (b)	Orange colouring - YES white cornflour - NO (both required for the mark)		1

Question Number	Answer	Reject	Mark
18 (c)(i)	Pass through with the colouring and water		1

Question Number	Answer	Reject	Mark
18 (c)(ii)	Because sugar dissolves in water/sugar is soluble in water/sugar solution can pass through the paper or filter paper		1

Question Number	Answer	Mark
19(a)	30°	1

Question Number	Answer	Mark
19(b)	The line or it goes up the most or more than the others/the curve for X is steeper than the others	1

Question Number	Answer	Mark
19(c)	In Mike' graph, the line goes down as the temperature goes up. In Jane's graph, the line goes up as the temperature goes down <i>Looking for a comparison</i>	1

Question Number	Answer	Mark
20	Key A	1
21	Key D	1

Question Number	Answer	Accept	Mark
22(a)	Streamlining Making the board smooth	Rounder edges on the board Get rid of any roughness on the board Wax the surfboard	1

Question Number	Answer	Mark
22 (b)	The Earth is a sphere (Light travels in straight lines)	1

Question Number	Answer	Mark
22(c)	The Earth rotates or spins on its axis	1

Question Number	Answer	Accept	Mark
22(d)	The time taken for the Earth to orbit the Sun once	365 days [this is length]	1

Question Number	Correct Answer	Mark
23 (a)	All four components correctly labelled 3 (for all four components correctly labelled) 2 (for 2 or 3 correct) 1 (for one correct)	3

Question Number	Correct Answer	Mark
23 (b)	Correctly drawn circuit diagram 2 (circuit with all three components correctly drawn) 1 (circuit with one or two components correctly drawn)	2

Question Number	Correct Answer	Accept	Mark
23 (c)	Add more cells	Add more batteries Add more a powerful battery/ batteries	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
24 (a)	They vibrate Vibrations	It moves up and down quickly	They move up and down They wobble/shake	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
24 (b)	It will produce a louder sound/It will go on for longer	The volume is higher It made a loud/long sound	The pitchers is higher It vibrates more	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
24 (c)	Vibrate more quickly Vibrate faster	Vibrate more frequently		1

Section B:

Question Number	Answer	Mark
25 (a)	Gets Bigger - True Gets Heavier - False Changes Shape - True Changes Colour - True 2 (marks for all four statements answered correctly) 1 (mark for any two or three statements correctly answered)	2

Question Number	Answer	Mark
25 (b)	C Louise could use a Spring Balance	1

Question Number	Answer	Mark
25 (c)	Any one from; Wear Oven Gloves to protect hands Keep water away from electricity Keep knives and sharp utensils in a safe place Wash hands to avoid food poisoning <i>Allow for sensible relevant answer</i>	1

Question Number	Answer	Mark
26 (a i)	1 to 5 marked on vertical axis	1

Question Number	Answer	Mark
26 (a ii)	<i>Ft on 26 (ai)</i> Bar drawn to '2' on the chart above 'attracted to a magnet' Allow for a bar drawn to '2' on an incorrect scale (or two boxes highlighted)	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
26 (b)	<p>Response must recognise that results are not referred to or interpreted</p> <p>He has not talked about what he has found out/what happened/his results</p> <p>It does not give reasons/an explanation</p>	<p>It does not tell you anything</p> <p>It needs to say more about the results</p> <p>It doesn't have enough detail</p> <p>We need more information</p> <p>It does not tell us why it was 'good'</p> <p>He needs to explain 'good'.</p>	Reject a response which refers to a prediction or method, or which presents a conclusion	1

Question Number	Answer	Mark
26 (c)	<p>The iron nail is attracted to the magnet - Supports Tom's and David's ideas</p> <p>The steel clip is attracted to the magnet - Supports Toms and David's ideas</p> <p>The metal key is not attracted to the magnet - Supports only David's ideas</p> <p>The plastic toy is not attracted to the magnet - Does not support either idea</p> <p>The wooden peg is not attracted to the magnet - Does not support either idea</p> <p>2 (marks for all five statements answered correctly)</p> <p>1 (mark for any three or four statements correctly answered)</p>	2

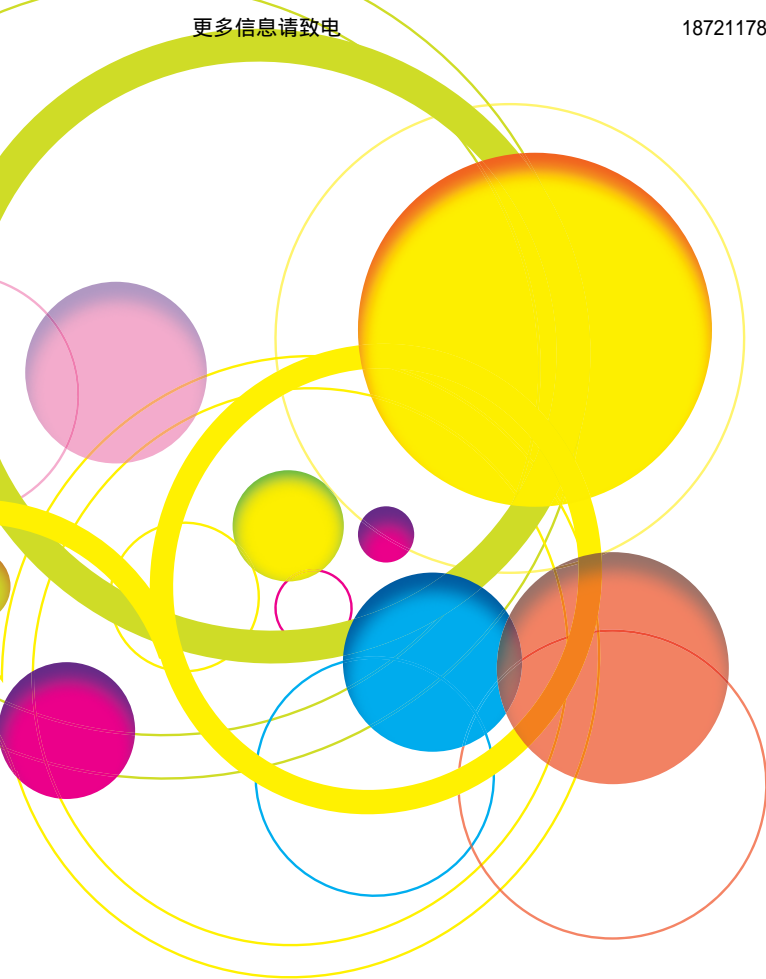
Question Number	Correct Answer	Acceptable Answers	Reject	Mark
26 (d)	<p>Response should give an indication that the suggested change would give a different investigation</p> <p>They only wanted to know if the material is attracted or not</p> <p>They were not testing the strength of the magnets</p> <p>It was not what they were testing</p>	<p>How far it moves does not matter</p> <p>It would not make any difference</p> <p>It has nothing to do with the test</p> <p>Only steel/iron will attract the magnet</p> <p>Not all materials are magnetic</p>	Reject a response that included incorrect science which is not supported by the results of the investigation	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
27 (a)	An indication that the soil would have an effect on the investigation or that only one variable is changed in a fair test	<p>Chalk may be dry, clay may be wet</p> <p>One soil may have more nutrients or moisture than others</p> <p>One soil might be better than another</p> <p>One soil might be richer/finer/rougher</p>	<p>Do not give credit for an insufficient response e.g. Keep everything the same</p> <p>If you have different soils it may be unfair</p> <p>It may be a different type of soil</p>	1

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
27 (b)	An indication that the results will not be affected if the colour of the can is changed or that there are other control variables which have a greater effect.	<p>The colour makes no difference</p> <p>It has no effect</p> <p>The amount of / type of water is the same</p> <p>The colour will not change the test</p> <p>The water makes a difference</p>	<p>The size/shape of the watering can affect the plants</p> <p>It would not be fair if she uses the same coloured watering can [restates information given]</p>	1

Question Number	Answer	Mark
27(c)	<p>The type of onion seed - Factor to be changed</p> <p>The time taken for the seed to germinate - Factor to be measured</p> <p>The place where the seeds are left - Factor to be kept the same</p> <p>The type of pot the seed is grown in - Factor to be kept the same</p> <p>2 marks for all four factors correctly classified</p> <p>1 mark for any three factors correctly classified</p>	2

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
27 (d)	A response indicating that reliability is increased	<p>To make the results more reliable</p> <p>To get an average</p> <p>To see if the same type of seed always germinates more quickly</p> <p>To see if they germinate at the same rate</p> <p>She can compare her results.</p>	<p>To get the correct results</p> <p>So she can see which is best</p> <p>To see which type of seed germinates quickest</p> <p>So that the test is fair</p>	1



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Year 6 Achievement Test
Sample Assessment Material and Sample Mark Scheme

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