



OUNDLE

School

Junior Entrance and Scholarship Examinations 2010

Science Theory Paper

One hour

NAME:

1. (a) A class carries out a survey to see how often children eat vegetables.

How often?	Number of children
more than once a day	↑↑↑
once a day	↑↑↑
once a week	↑↑↑ ↑↑↑
less than once a week	
never	

- (a) How many children eat vegetables more than once a day?

..... (1)

- (b) Eleven children gave the same answer as each other. What answer did these eleven children give?

..... (1)

- (c) In a balanced diet, each food group has a special function in the body. Each food below is a good source of something the body needs. Draw three lines to match each food to its special function.

carrots and oranges	new material for growth
chicken and eggs	fuel for activity
bread and cakes	vitamins for health

(3)

- (d) Elizabeth makes a poster to show how to stay healthy. Only some of the ideas on her poster are good. Tick two boxes to show the best ideas on the poster.

To stay healthy you should:	
(i) Eat lots of fried food	
(ii) Eat different kinds of food	
(iii) Drink as little water as possible	
(iv) Exercise every day	

(2)

2. Kim takes a glass out of the refrigerator. It has been there for some time. It contains cubes of ice floating in water.

(a) The ice cubes float in water. What does this tell you about ice?

.....
.....
(1)

(b) She measures the temperature of the ice and water.

(i) Write down the name of the piece of apparatus she uses.

.....
(1)

(ii) Why is it important to stir the water when measuring its temperature?

.....
.....
(2)

(iii) Draw a ring around the likely temperature of the water and ice.

-10°C 0°C 10°C 20°C
(1)

(c) She leaves the glass on a table until the ice has turned to water.

(i) Is ice turning to water a reversible or a non-reversible change? Explain your answer.

.....
.....
.....
(2)

(ii) What is the name given to the change from ice to water?

.....
(1)

(iii) The outside of the glass standing on the table goes misty. Explain why this is.

.....
.....
(2)

- (d) She takes another glass containing ice and water out of the refrigerator. She adds salt to the mixture.
What happens to the temperature?

.....
(1)

3. Granulated sugar, caster sugar and icing sugar are three types of sugar you might have in your kitchen. Granulated sugar has larger crystals than caster sugar. Icing sugar is a fine powder.

Tony adds one tablespoon of granulated sugar to 100 cm³ of water and stirs until he can no longer see the sugar. He repeats the experiment two times more.

He then carries out the whole experiment using caster sugar and icing sugar.

His results are shown in the table.

Type of sugar	Time for sugar to disappear in seconds		
	1 st experiment	2 nd experiment	3 rd experiment
granulated	45	50	52
icing	20	12	22
caster	32	34	35

- (a) What best describes what happens when sugar is added to water and can no longer be seen?
Put a ring around the best word.

dissolve evaporate melt crystallise

(1)

- (b) Why did Tony test each sugar three times?

.....
.....
(1)

- (c) Tony looks at his results and thinks that one result is wrong. Which result do you think is wrong?

.....
(1)

- (d) How does the size of the sugar grains affect the time taken for the sugar to dissolve?

.....
(1)

(e) Tony has used the same amount of water and the same amount of sugar each time. Why did he do this?

.....
.....
(1)

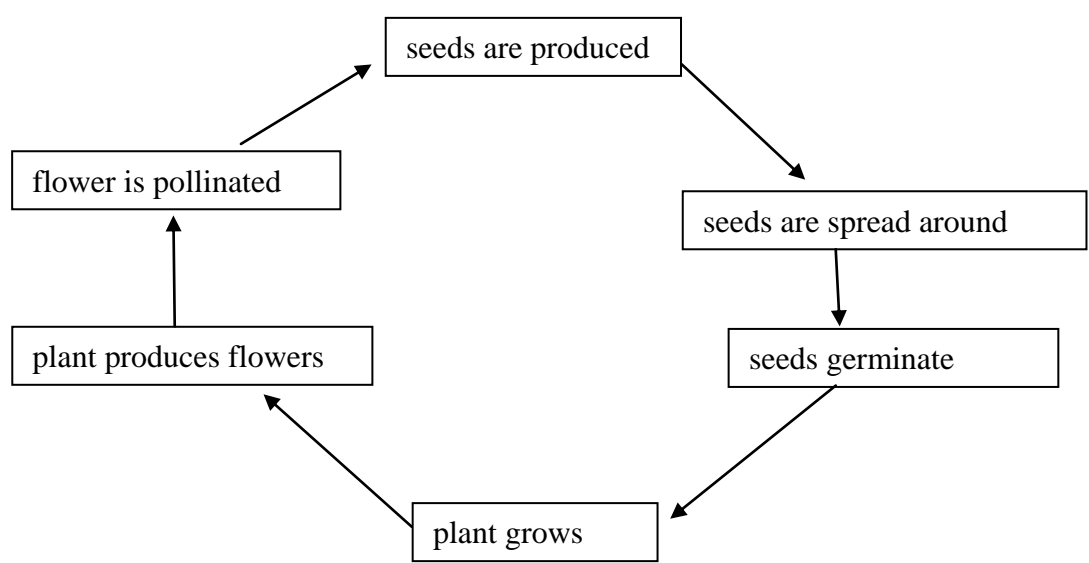
(f) Suggest one other thing that might affect his result.

.....
(1)

(g) Suggest one other thing Tony could do to make the granulated sugar dissolve faster.

.....
(1)

4. The diagram shows the life cycle of a flowering plant.



(a) Write down two ways in which seeds can be spread around.

.....
(2)

(b) What happens when seeds germinate?

.....
(1)

(c) Write down two conditions that are needed for germination.

.....
(2)

(d) Which stage of the life cycle is often carried out by insects?

.....
(1)

5. Jemima has crushed some rock salt.

(a) She adds some of the rock salt to water and stirs the mixture. Why does this separate the salt from other impurities?

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.....
.....
(2)

(b) (i) Draw a diagram showing how she might separate the mixture. Label your diagram.

(3)

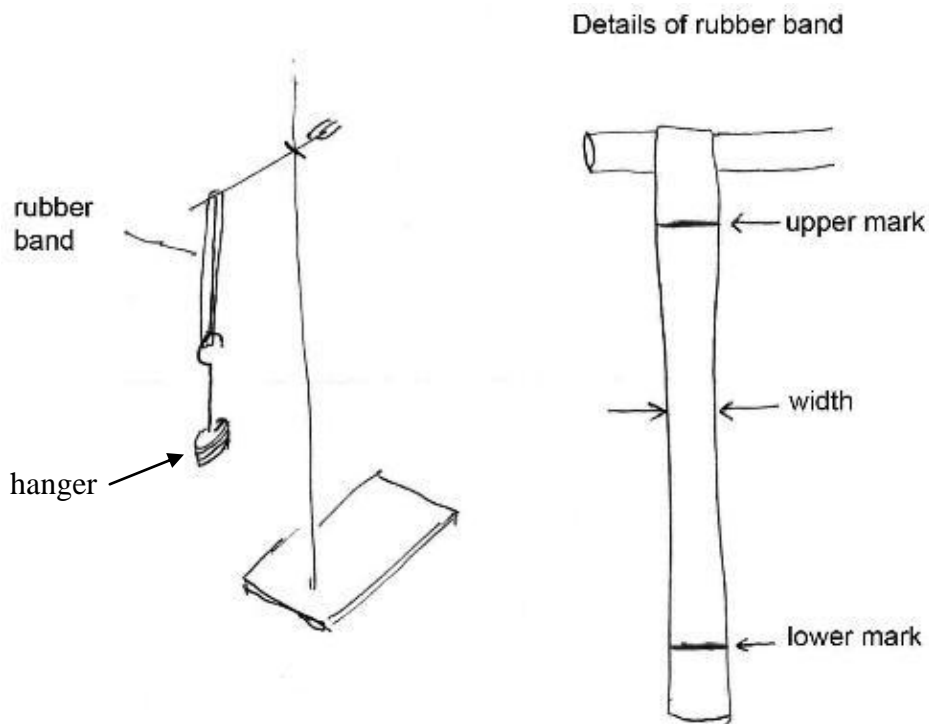
(ii) What is the name of this process?

.....
(1)

(c) Jemima wants to recover the pure salt. Put a ring around the best word to describe the method she uses.

burning condensing evaporating melting
(1)

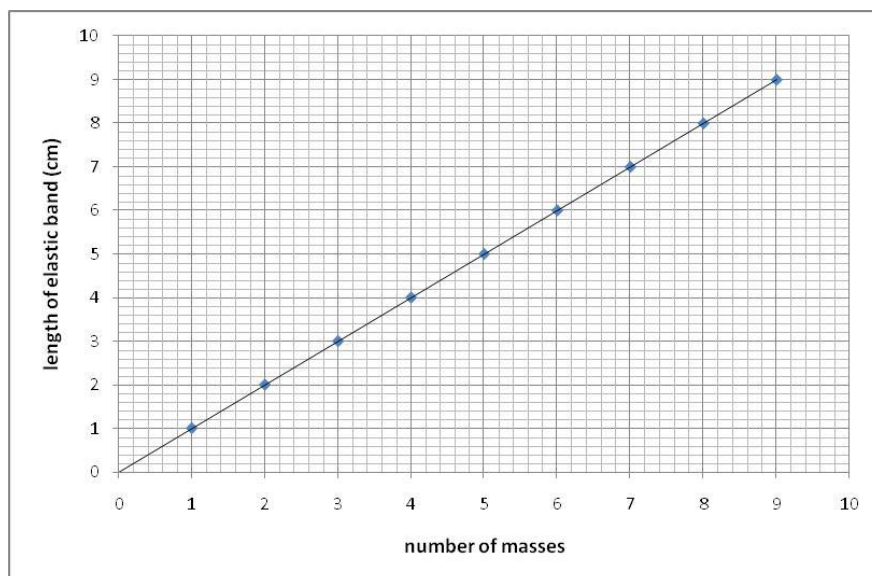
6. Anne is experimenting with elastic bands and masses. She puts a mass onto the hanger and records the length of the elastic band between the upper and lower mark. Anne adds more masses.



(a) What could happen to make this experiment unsafe?

.....
(1)

Anne drew a line graph of her results.



(b) What is the length of the elastic band when four masses are added?

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(1)

(c) Predict the length of the elastic band when ten masses are added.

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(1)

(d) Describe what Anne's graph tells her about the number of masses and the length of the elastic band.

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.....
(2)

(e) What do you think happens to the width of the elastic band when the number of masses is increased?

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(1)

(f) Anne now repeats the experiment using another elastic band that is not as wide as the first one but the same in all other ways. On the graph draw a line showing what results you think that she will get.

(1)