

NAME:



Oundle School

Junior Entrance and Scholarship Examination 2008

SCIENCE

Time allowed: **1 hour**

- Please write your name in the box on the top of this page
- Write all your answers in the spaces provided on this question paper
- Answer as many questions as you can

1. Some children were investigating the conditions in which seeds sprouted. They put three pots of seeds in the same dark cupboard. They used the same sort of soil and the same number of seeds in each pot. They put a different amount of water in each pot.

They recorded the number of seeds which sprouted after 5 days.

	Amount of water each day (teaspoons)	Number of sprouting seeds after 5 days
Pot 1	1	8
Pot 2	3	19
Pot 3	5	43

- (a) What was being varied in this investigation?

..... (1)

- (b) What was being kept constant in this investigation?

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.....
.....(3)

- (c) Explain why this investigation was a fair test.

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.....
.....
.....(3)

- (d) In the space below display the results as a bar chart.

- (e) Describe another investigation into the sprouting of seeds that could be carried out. You need to say what you would keep constant and what you would vary.

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.....(4)

2. Two pupils were asked to investigate the strength of paper. To do this they folded one end over and held it with sticky tape. They then used a spring balance (newtonmeter) to hold the folded end and pulled the other end until the paper began to tear. They decided to investigate whether wide strips are stronger than narrow strips.

- (a) What factors should they keep the same to make this a fair test?

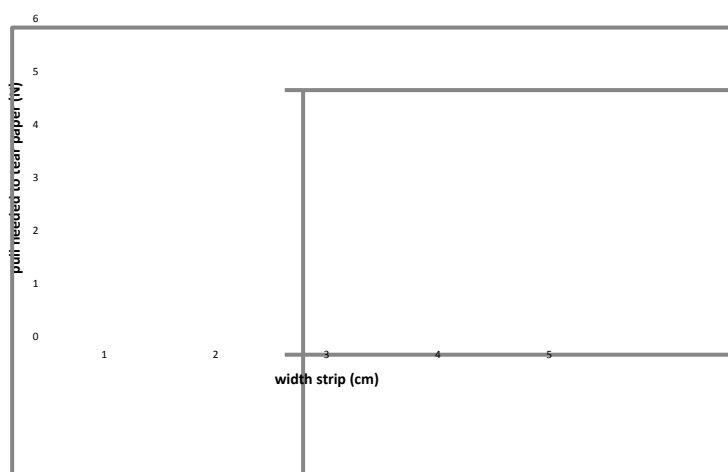
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.....(3)

- (b) The bar chart below shows their results.



Use the bar chart to complete the following table.

width (cm)					
pull needed to tear (N)					

(5)

(c) They then decided to compare the strengths of different types of paper. They decided to test:

- tissue paper
- thick wallpaper
- drawing paper

Predict the order of strength from strongest to weakest.

strongest

middle

weakest

Explain why you have placed them in this order.

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(4)

(d) The two pupils now decided to test the strength of tracing paper and newspaper. They tested each paper three times. They put five drops of water on each paper and tested them three times again. The table shows their results. The number is the force needed to tear each paper in Newtons.

	Dry newspaper	Wet newspaper	Dry tracing paper	Wet tracing paper
first go	2	0.5	4	3
second go	2	0.3	5	3.2
third go	2.5	0.6	4	3

Explain what these results tell you about the strengths of newspaper and tracing paper.

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(4)

3. You are given a bucket that is full of seawater. The water has salt, sand, small stones and pieces of seaweed mixed into it. You are asked to separate all the different bits out of the water. The following methods are available:

- condensing
- filtering
- sieving
- evaporating

(a) Complete this table by writing which method you would use in each case.

bits to be separated	Method
seaweed and stones	
sand	
salt	

(3)

(b) Explain why when you look at the water you can see the stones, seaweed and sand but not the salt.

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.....(3)

(c) Suppose that some iron filings were mixed with the sand.

(i) Explain how you would separate the sand and iron filings.

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(ii) What might have happened to the iron filings if they were mixed with the sand in the bucket of seawater?

.....(3)