

DANEBANK

YEAR 10 SCIENCE

PRACTISE PAPER



Name: _____

Teacher: _____

Date:

Time Allowed:

Weighting:

Instructions

- Time allowed:
- Attempt all questions
- Board approved calculators may be used.
- Write using black pen.
- Draw diagrams using pencil.
- This paper must not be removed from the Examination Room.

Activity 1 (7 marks)

- pages 2-3

Activity 2 (7 marks)

- pages 4-6

Activity 3 (8 marks)

- pages 8-9

Activity 3 (8 marks)

- pages 10

Total Marks: _____ /

Activity 1 (7 marks)

Table 1 shows the average distance from the Sun and the average orbital speed of some of the planets in our solar system. Table 2 shows the five largest asteroids and their average distances from the Sun.

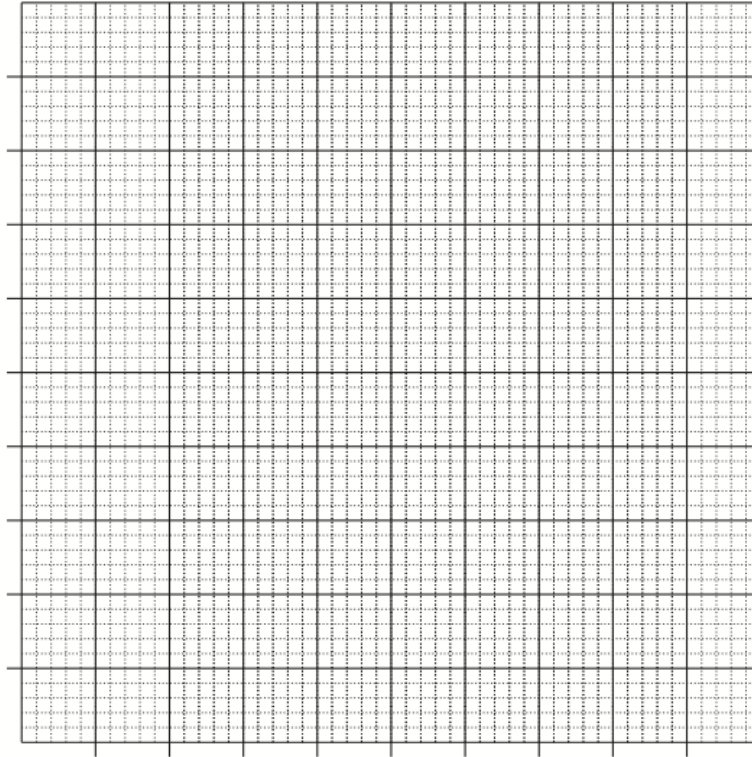
Table 1

<i>Planet</i>	<i>Average distance from Sun in astronomical units (AU)</i>	<i>Average orbital speed (km/s)</i>
Mercury	0.4	48.0
Venus	0.7	35.0
Earth	1.0	30.0
Mars	1.5	24.0
Jupiter	5.2	13.0
Saturn	9.6	10.0

Table 2

<i>Asteroid</i>	<i>Average distance from Sun (AU)</i>
Vesta	2.4
Juno	2.7
Ceres	2.8
Pallas	2.8
Hygeia	3.2

- (a) On the grid provided, draw a line graph of the average distance from the Sun and the average orbital speed for the planets listed.



Distance from Sun (AU)

- (b) Use the graph to predict the range of orbital speeds for the asteroids listed in Table 2.

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Activity 2 (8 marks)

Car launcher

Sebastian watched a video that showed how to make a car launcher.

He decided to investigate how far the car would travel if the rubber band was pulled back different amounts.

He did this a number of times, each time increasing the distance he pulled back the rubber band.



1. Which instrument would be suitable to measure the distance the car travelled?

(a)



(c)



(b)



(d)



2. The independent variable that Sebastian changes in his experiment is

- (a) type of toy car
- (b) size of the rubber band
- (c) distance the toy car travels
- (d) distance the rubber band is stretched

3. Choose yes or no for each answer to the following question.

Could this variable influence the results?

	Yes	No
type of toy car	<input type="radio"/>	<input type="radio"/>
size of the rubber band	<input type="radio"/>	<input type="radio"/>
distance the toy car travels	<input type="radio"/>	<input type="radio"/>
distance the rubber band is stretched	<input type="radio"/>	<input type="radio"/>

4. Complete the sentence by drawing a line through the incorrect options in each box.

Scientists use

conclusions / procedures / tables

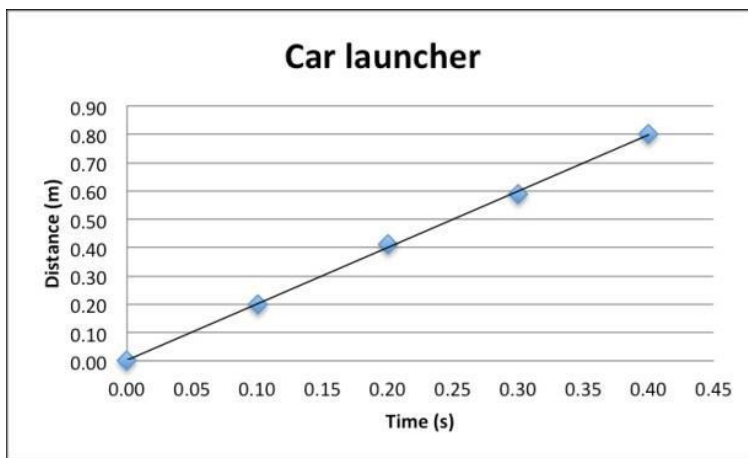
to organise data.

They use graphs to

collect data / present information / describe procedures

so that trends and comparisons are more easily made.

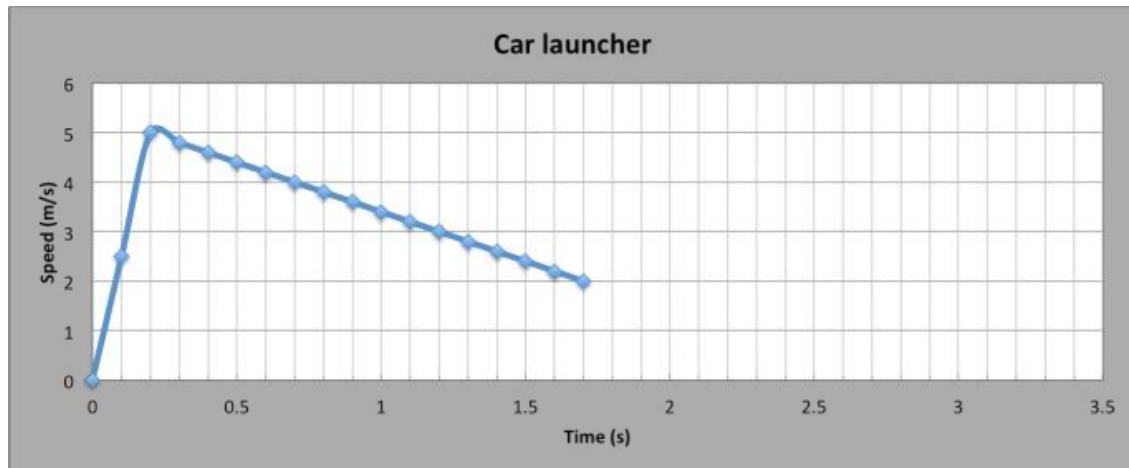
5.



This graph shows the toy car is

- (a) not moving
- (b) slowing down
- (c) getting faster
- (d) gradually moving at a constant speed

Use the graph below to answer questions 6 and 7.



6. What was the toy car's highest speed?
- (a) 0.2 m/s
 - (b) 1.7 m/s
 - (c) 5 m/s
 - (d) 6 m/s
7. Sebastian stopped recording the car's speed after 1.7 seconds. Use the graph to estimate when the toy car stopped.
- (a) 1.7 seconds
 - (b) 2.5 seconds
 - (c) 2.7 seconds
 - (d) 3.5 seconds

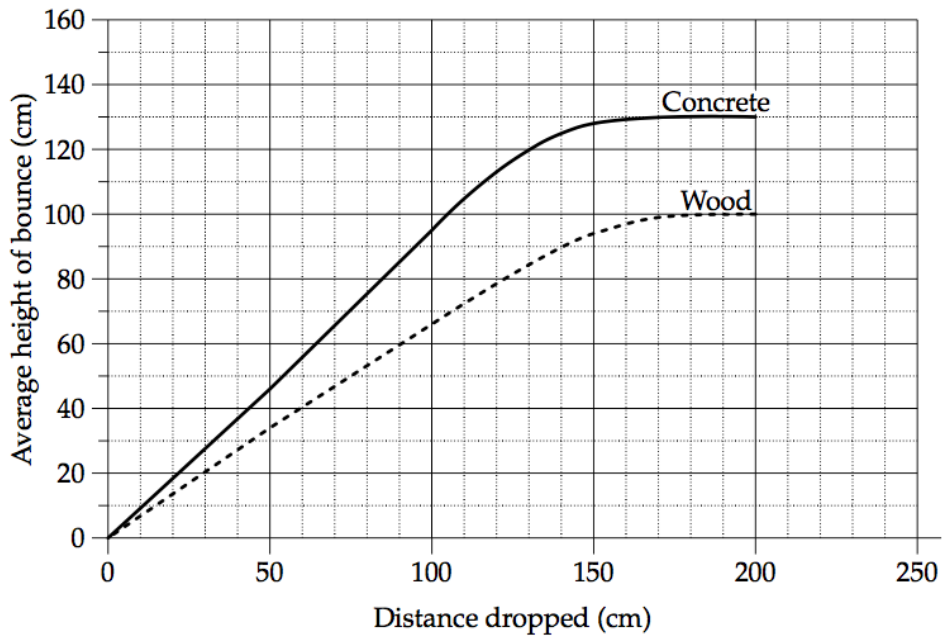
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Activity 3 (8 marks)

Susi and George decided to investigate how the height to which a ball bounces varies with different surfaces.

They dropped a tennis ball from different heights onto a concrete floor and a wooden floor. They produced a table and graph of their results.

<i>Distance ball dropped (cm)</i>	<i>Average height of bounce of ball on concrete floor (cm)</i>	<i>Average height of bounce of ball on wooden floor (cm)</i>
50	46	34
100	Y	66
X	128	94
200	130	100



1. What is one piece of equipment that Susi and George could have used to take their measurements? **1**

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2. Identify TWO variables that would need to have been kept constant when carrying out this experiment.

(i) **1**

(ii) **1**

3. Two pieces of data are not shown in the table. They are marked X and Y. Use the graph to determine the values of X and Y.

X **1**

Y **1**

4. The tennis ball was now dropped from a height of 250 cm onto the concrete floor. Using the graph, predict how high in centimetres you would expect it to bounce. **1**

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5. What evidence is there that Susi and George dropped the ball from each height more than once? **1**

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6. What are TWO conclusions Susi and George could make from their results? **2**

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