

Energy HSW HW2

Forces and their effects

Science investigation

Jenny is investigating how the position of a floating object changes in water of varying salinity (saltiness). A graduated straw with a piece of plasticine stuck to one end is placed in water and the water level position is marked. She then added salt to the water, and stirred it before taking a measurement of the distance the straw moved from the original water position.

She then repeated the procedure by adding more salt.

Her results are as follows:

Mass of salt added (g)	5	10	15	20	25	30
Distance straw moves (mm)	2	3	6	8	11	12

1) What factors must she keep the same in order to make this a fair test?

.....
 (2 marks)

2) When Jenny adds the salt, why does she stir the mixture?

.....
 (1 mark)

3) Draw a line graph of her results on the graph paper provided (5 marks).

4) What conclusion does Jenny form from her results?

.....
 (2 marks)

5) Explain Jenny’s conclusion using the words ‘density’ and ‘upthrust.’

.....

 (2 marks)

Name.....

Target level

6) Explain what would happen if the straw was immersed in a liquid whose density was less than that of water.

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

7) Complete the following sentences about forces and their effects:

Use the following words to help:

air resistance
mass
kilograms
density

pairs
upwards
volume

liquid
mass
Newtons

weight
friction
lubricant

A force that acts against a falling object is called or drag. Forces always act in The amount of matter that an object contains is called its and is measured in The pull force of an object due to gravity is called and is measured in

Upthrust is an force that acts on an object that is immersed in a..... If the object floats, then the upthrust is equal to the of the object. The density of an object depends on its and its

The force that resists movement of an object is called The amount of this force that acts between two surfaces can be reduced by using a (13 marks)

Total marks: (22)

Mark	Level
1 – 3	U
4 – 8	3
9 – 12	4
13 – 16	5
17 – 22	6