Rosary school / Marj El Hamam

Science worksheet 6.1

Name :_____

Date : _____ Grade 4 ( )

1. Match each effect of force to the type of force by writing the letter in its correct place.

letter	Effect of force	force
C	a boat floats on water	A. applied force
A	a coin moves as you spin it	B. Air resistance
B	a skydiver slows down as he or she falls	C. upthrust

2. Choose the correct words to fill in the blanks.

applied	upthrust	pairs	push
normal	downwards	upwards	surface

a. A force is a ____push_____ or a pull.

b. Forces always act in _____paris_____.

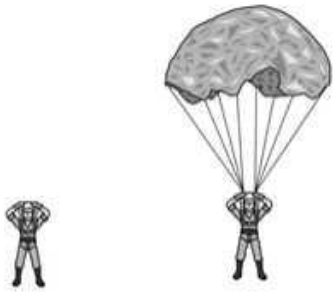
c. When an object is placed on a _____surface_____, it has two forces acting on it.

d. Gravity acts ____downwards_____ on the object. An upward force known as ____normal_____ force acts against gravity.

3. A fish lives in water.
There is force acting between the body of the fish and the water.
What is this force called? Circle the correct answer.

air resistance normal force water resistance

4. Chen conducts an investigation using the two toy soldiers below.
He releases both toy soldiers from the same height, at the same time.
He observes which toy soldier reaches the ground first.



Chen repeats his observations two more times. Why?

__To make sure that the results are reliable

5. John drops two pieces of paper from the same height.
He records the time taken for each piece of paper to fall to the ground.

Paper	Time taken to fall to the ground (seconds)
A	4.0
B	2.3

Which piece of paper, A or B, has a larger surface area? How can you tell?

Pape A has the larger surface area, it took more time to reach the ground because more air resistance acted on it.

6. Read the following statements. (Explain using scientific terminology.)

Jack competes in a skiing championship. Does he need high or low friction between his skis and the snow? Explain your answer.

Low friction is needed to win the race. Friction is an opposing force which will slow him down.

7. The picture shows a boat floating on water. The boat is not moving.

:ribe the forces acting on the boat.

The gravity is a downward pull towards the center of the Earth.

Upthrust and upward push exerted by water.

8. Lily is learning about mass and weight.

Complete her sentences.

Choose from the following words.

You can use each word once, more than once or not at all.

centimetres **kilograms** **newtons** **seconds**

Mass is measured in _kilograms_____.

Weight is measured in __newtons_____. weight is not included

Force is measured in __newtons_____.

9. Complete the sentences about friction.

Choose the best words from the list.

air resistance **a force** **gravity** **a mass** **slow down** **speed up** **stay the same**

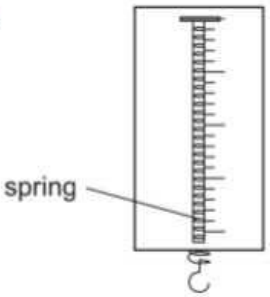
a. Friction is ____force_____.

b. Friction makes a moving object ___slow down_____.

c. A type of friction is ___air resistance_____.

10. Naina is measuring forces.

a. What is this piece of equipment called?____forcemeter_



b. What does it measure? Underline the correct answer.

newtons **grams** **centimetres** **millilitres**

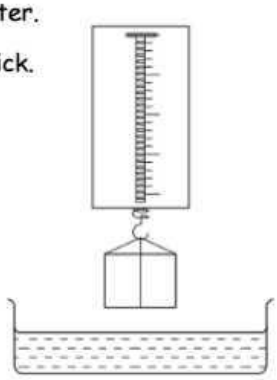
c. What happens to the spring when there is a force on it?

___It is pulled down_____

d. Naina measures the force of a wooden block in air and in water.

Why does she find that force is less in water than in air? Tick.

Air resistance is less than water resistance.	
Gravity is less in water than in air.	
The water pushes up on the block.	■
The wooden block soaks up some water.	



e. What would she find if she measured the mass of the block in air and in water?

_____The mass stays the same._____