RAINBOW INTERNATIONAL SCHOOL,

RIYADH, SAUDI ARABIA

GRADE 6- SCIENCE

Chapter 4: Forces and Motion

4.1 Mass and Weight

I. Fill in the blanks:

a) Mass is the amount of _____contained in an object.

b) Mass is measured in_____

c) On the earth mass of an object is the _____ as its weight

d) Weight is defined as the amount of _____ force acting on an object

e) Weight changes because of _____

f) There is no force of gravity in _____

g) Astronauts float in the space due to_____

h) Weight is measured in _____

i) An object weighs _____at sea level than that at top of a mountain

II. Answer the following;

4.2,4.4: How forces act and the effect of forces:

I. Fill in the blanks;

1. Any push or pull: _____
2. _____show the direction and sizes of forces
3. Force always acts in_____
4. Force can be measured by using a_____

5. The unit to measure force_____

4.3 Balanced and unbalanced forces:

I. Fill in the blanks:

a) A _____force always causes a change in _____

b) When the forces are _____the object does not move.

c) If the net force on an object is not zero, then the forces are _____

d) When the forces are in the _____ direction, the net force is the difference between the forces

4.6 Friction:

I. Fill in the blanks:

a) Vehicles can move on the roads because of _____ between the tyre and the road surface

b) _____ are used to reduce friction in Mechanics

c) Friction makes things _____

d) Friction produce _____energy

II. Give one word reason:

a) Is friction a contractor non-contact force?

_____

b) The smoother a surface is the _____will be the friction

4.8 Air resistance and drag:

I. Fill in the blanks:

1) The frictional force which is acting on an object when it moves through air is called:_____

2) Air resistance is an _____force which is -exerted against a falling object.

1. Name the following:

i) A force that tries to slow things down when two things rub together . ----------..

ii) force that tries to slow things that are moving through air----------

iii) When two forces working in opposite directions are not the same strength..----------

iv) The amount of force on something from gravity .It is measured in Newtons. ----------

V unit of force(N).----------

vi) push or a pull.----------

vii) A piece of equipment containing a spring that is used to measure forces..----------

2. Circle the best answer:

A. The forces shown above are **PUSHING / PULLING** forces.

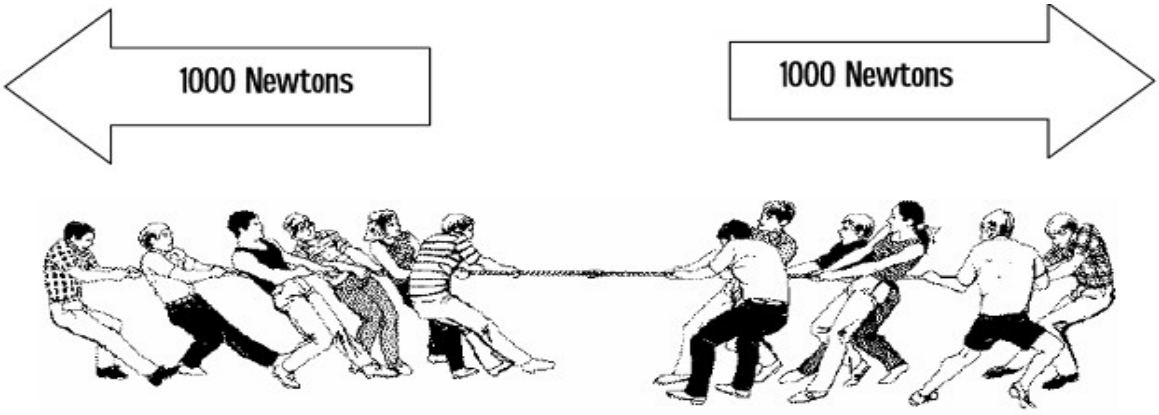
B. The forces shown above are **WORKING TOGETHER / OPPOSITE FORCES.**

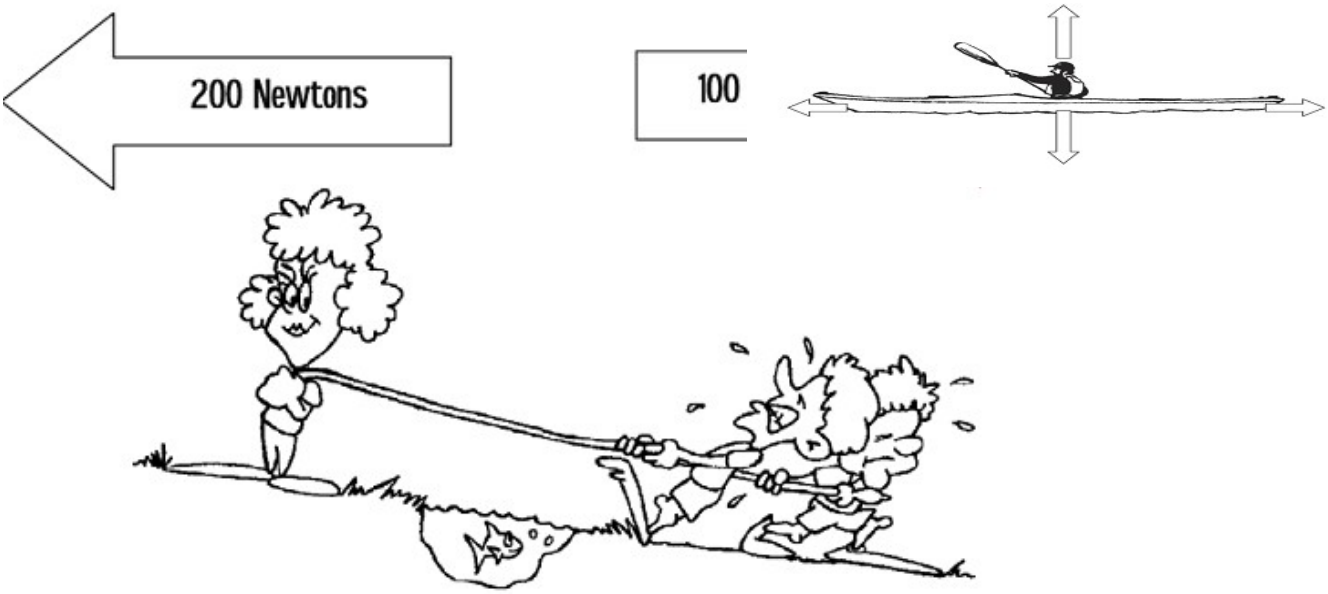
C. The forces are **EQUAL / NOT EQUAL.**

D. The forces **DO / DO NOT** balance each other.

E. The resultant force is **1000 N TO THE RIGHT / 1000 N TO THE LEFT /ZERO.**

F. There **IS / IS NO motion**.





3 ..

A. The forces shown above are **PUSHING / PULLING** forces.

B. The forces shown above are **WORKING TOGETHER / OPPOSITE FORCES**.

C. The forces are **EQUAL / NOT EQUAL**.

D. The forces **DO / DO NOT** balance each other.

E. The stronger force is pulling to the **RIGHT / LEFT**.

F. The weaker force is pulling to the **RIGHT / LEFT**.

G. Motion is to the **RIGHT / LEFT**.

Circle the best answer on the line provided._____

4..i. When forces are balanced, the total force ----------

a. is greater than the sum of the forces **c. is negative**
b. is zero **d. is equal to the largest force**

ii . A force is which one of these?

a. a push **b. a push or pull** **c. a pull** **d. none of these**

iii. Force is measured in which units?

a. kilograms **b. newtons** **c. degrees** **d. m/s2**

12. Label the forces on this Kayak.
Use the letters next to each phrase.

A	Forward force from the paddle
B	Water resistance
C	gravity
D	Up thrust

13. Decide whether each picture/statement below indicates **more friction** or **less friction**.

A

using a rubber mat in the shower

_____

B

using rubber tyres

_____

C

waxing skis

_____

D

sliding on a *polished* slide

_____

E

oiling a bicycle wheel

_____

F

pulling on bicycle brakes

_____

14.
Josh is learning to dive.
He is seen floating in the water. Label the two forces.

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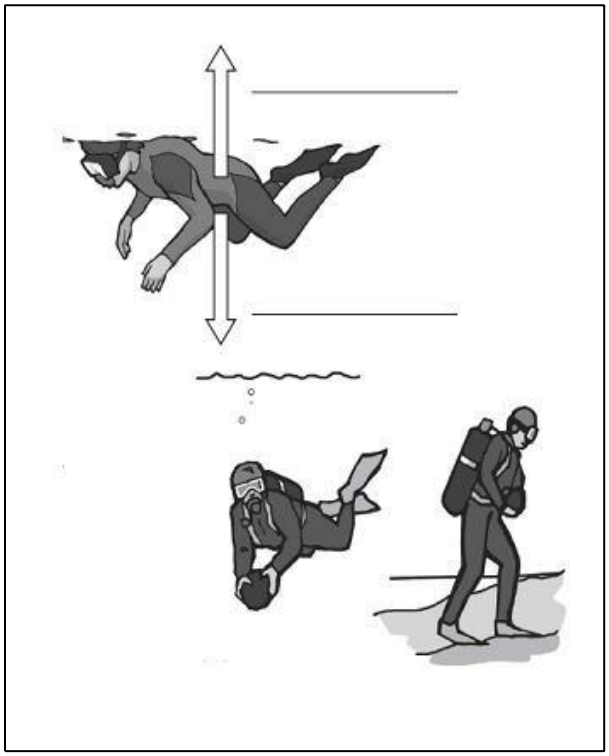
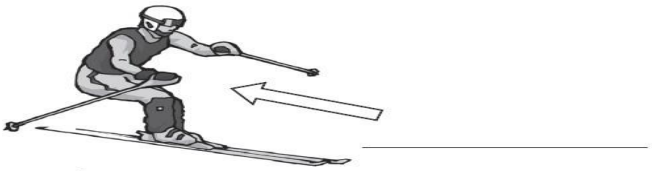
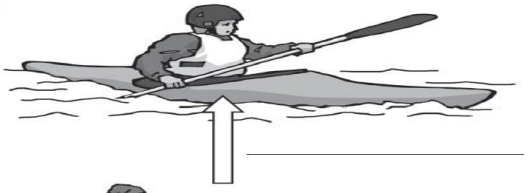


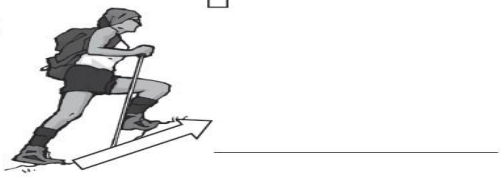
Look at the pictures. Write the names of the forces next to the arrows.

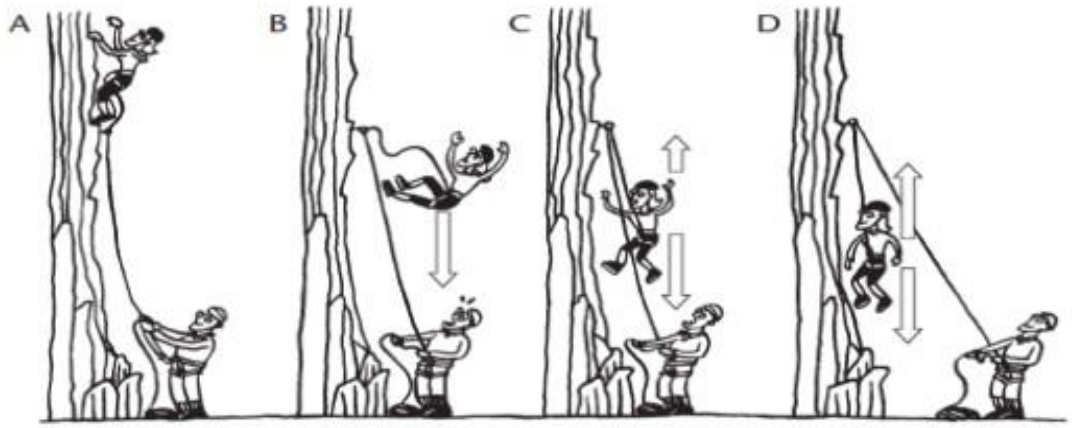




C

D





15 i) What force or forces are acting on the falling climber in picture **B**? ----------

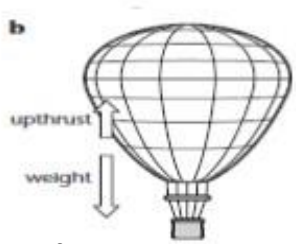
ii) What forces are acting on the climber in **C**? .....

ii) Are the forces **balanced** or **unbalanced** ? ..----------

iii) What will happen to the **falling speed** of the climber? ----------

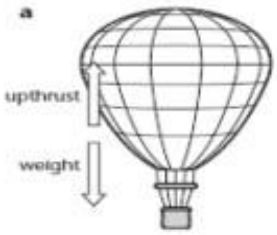
iv) Are the forces **balanced or unbalanced in D**? .----------

16. If two forces are the **same size** and are in the **opposite directions**, they are **……**



The forces on the balloon are **balanced/ unbalanced**
The balloon will start to **move up / stay where it is / start to move down.**

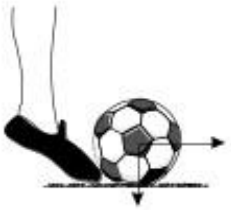
Cross out the words that are wrong.



The forces on the balloon are **balanced/ unbalanced**
The balloon will start to **move up / stay where it is / start to move down**.

17. The girl is kicking the football.
The arrows show the direction of two forces on the ball. Draw **TWO** arrows on each of these pictures to show two forces on each football.

(a) Moving to the right through the air.



b Not moving, on the ground.

18. Write whether each statement is **'True' ,'False' or 'Partly true'.**	**True**	**False**
a) Friction always slows things down.		
b) Cars need friction to keep moving.		
c) Cars need friction to stop.		
d) You could not walk without friction.		
e) Friction is useful to gymnasts.		
f) Matches light because of friction.		
g) Friction is useful to ships.		
h) Shoe laces stay tied up because of friction.		
i) You could not pick up a a cup of tea without friction.		
j) You could drink from a glass without friction.		
k) Snow increases the friction between your shoes and the ground.		
l) Friction is useful in playgrounds.		
m) Pencils do not need friction to write.		
n) There is no friction when you are roller skating.		

Chapter 5

Electrical Conductors and Insulators

5.1

I. Fill in the blanks:

1. _____ is a poor conductor of electricity
2. Metals are electrical _____
3. Non-metals are _____
4. The outer layer of plastic is an_____

5.2

I. Fill in the blanks;

1. Pure water is a bad conductor of _____
2. _____ water can conduct electricity
3. Answer;

II. State whether true or false:

1. Robber is a good conductor of electricity:_____
2. Plastics are poor conductor of electricity:_____
3. All liquids conduct electricity:_____
4. Pure water conducts electricity:_____
5. Distilled water is free of salts:_____
6. Distilled water when mixed with salt conducts electricity:_____

Q.1 Choose the best answer.

1. In a simple series circuit, the bulb lights up when the switch is turned on because:

A. the switch produces electricity

B. the gap in the circuit is closed

C. the switch breaks the circuit

D. the circuit is open

2. Imagine a simple series circuit with one 1.5V battery and one bulb. When the 1.5V battery is replaced with a 3V battery:

A. the bulb gets brighter

B. the bulb gets dimmer

C. the bulb stays at the same level of brightness

D. the brightness of the bulb decreases

3. Why might a bulb burn out when a 1.5V battery and a 3V battery are both connected across it in series circuit?

A. There is not enough electricity flowing around the circuit

B. Too much electricity flows through the bulb's filament and the bulb blows

C. The batteries are flat

D. There is not enough current in the circuit

4. What is the effect of changing the wire in a circuit from a straight thick wire to a straight thin wire?

A. The bulbs become dimmer

B. The bulbs become brighter

C. The bulbs stay at the same level of brightness

D. The bulbs burn out

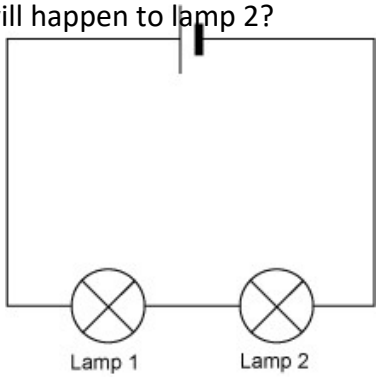
5. If lamp 1 is unscrewed from its holder, what will happen to lamp 2?

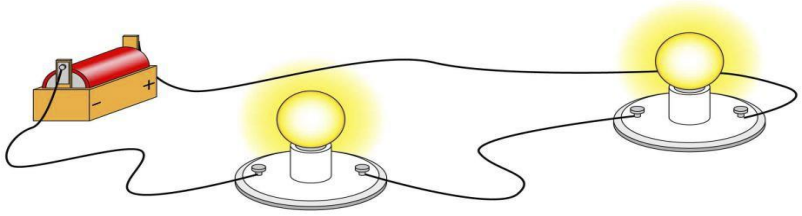
A. it will get brighter

B. it will keep on working

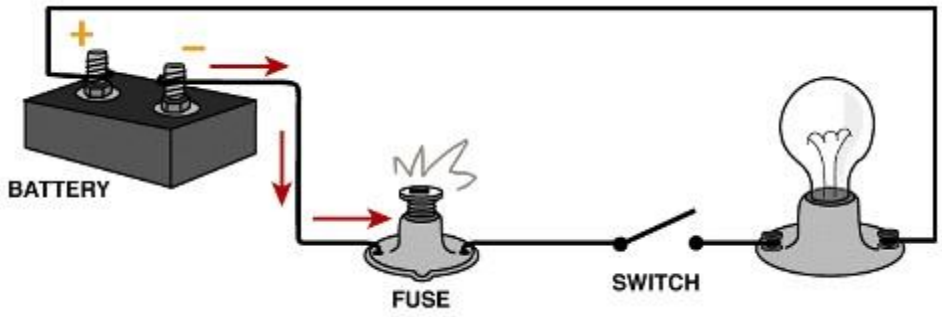
C. it will burn out

D. it will get dimmer





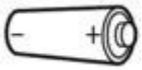
Q.5 Will the bulb glow in the circuit drawn below? Explain your answer.



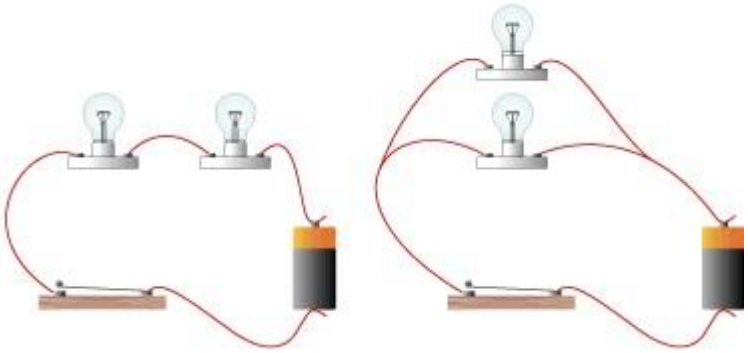
_____

_____

Q.6 Complete the table below.

Electrical component	Name of component	Symbol	Function
			
			
			
			

Q.7 Look at the circuits given below and answer the questions.



Circuit A **Circuit B**

a) **Identify:**

I. **Circuit A: _____**

II. **Circuit B: _____**