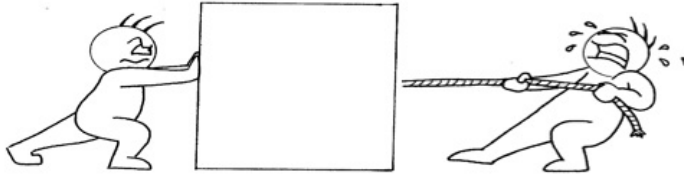


Science 8
Unit 2: FLUIDS
Topic 5: What is a force?



Student Name: _____

Force is a push or pull exerted on an object. It is measure in Newtons



How may a forces change affect an object?

- Change the shape of an object
- Change the motion of an object (Change its speed and direction)

What is the difference between mass and weight different?

Mass	Weight
Mass is the measure of the amount of matter in an object	Weight is a force caused by gravity. Weight is sometimes referred to as the force of gravity.
Mass is most commonly measured in grams or kilograms	Weight is measured in Newtons
Mass of an object does not change when it is moved from one place to another	Weight of an object can change when it is moved from one location to another (Example: From earth to the moon)

Forces can be classified in two ways:

- 1) Balanced forces do not cause a change in motion. They are equal in size and opposite in direction.



- 2) Unbalanced forces always cause a change in motion. They are not equal and opposite



PART A: MULTIPLE CHOICE.

Instruction: Circle the correct answer below each question. Also, transfer your answers to the bubble sheet provided.

1. Which of the following would be used to describe a force?
 - (I) It is a push or a pull
 - (II) It is measured in Newtons
 - (III) Can change the motion of an object
 - (A) I
 - (B) I and II
 - (C) II and III
 - (D) I, II and III

2. Which of the following is not a force?
 - (A) Gravity
 - (B) Buoyancy
 - (C) Light
 - (D) Magnetism

3. What unit is used to measure force?
 - (A) A
 - (B) kg
 - (C) m
 - (D) N

4. Which is true of forces?
 - (A) They can only occur naturally
 - (B) They are always man-made
 - (C) They are defined as pushes or pulls
 - (D) There is only one type of force

5. Chose the answer which describes what would not be measured in Newtons (N).
 - (A) The amount of weight in an apple
 - (B) The amount of force needed to hold up a book
 - (C) The amount of mass in a human body
 - (D) The amount of force needed to twist a door knob.

6. What is the unit of measure for mass?
 - (A) Kg
 - (B) N
 - (C) N/Kg
 - (D) m/s^2

7. Which of the following is another way of saying weight?
 - (A) Buoyancy
 - (B) Elastic Force
 - (C) Force of Gravity
 - (D) Friction

8. If you are in a spacecraft moving away from the Earth, what is happening?
- (A) Both your mass and your weight are increasing.
 - (B) Both your mass and your weight are decreasing.
 - (C) Your mass decreases while your weight remains constant
 - (D) Your weight decreases while your mass remains constant

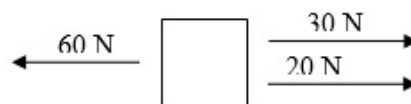
9. Which pair of characteristics represents mass and weight?

MASS

WEIGHT

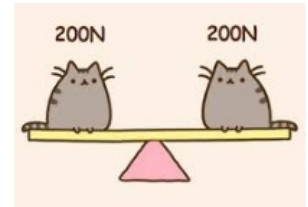
- | | |
|---|---|
| <ul style="list-style-type: none"> (A) changes with gravity (B) is measured in Newtons (C) is the amount of matter (D) spring scale | <ul style="list-style-type: none"> does not change is measured in kilograms is a measure of force balance scale |
|---|---|
10. The force of gravity is greater on Jupiter than on Earth. What effect would this have on a person's weight and mass?
- (A) Both weight and mass would decrease
 - (B) Both weight and mass would increase
 - (C) Weight would increase and the mass would stay the same.
 - (D) Weight would stay the same but the mass would increase
11. Which of the following statements demonstrates a poor understanding about the difference between mass and weight
- (A) After the summer my weight decreased by 2N.
 - (B) According to a spring scale, the mass of fish Johnny caught was 400N
 - (C) The Astronauts each had a mass of about 400 N on earth.
 - (D) My weight on the moon is 1/6 of what it is on earth.
12. What is affected as a result of unbalanced forces on an object?
- (A) The object's direction only
 - (B) The object's speed only
 - (C) The object's speed and direction
 - (D) Neither the object's speed nor direction
13. A change to an objects motion is caused by...
- (A) Balanced forces
 - (B) Unbalanced forces
 - (C) Acceleration
 - (D) Velocity

Use the diagram below to answer questions 14 and 15



14. Which of the following would best describe the forces acting on the object?
- (A) Zero
 - (B) Balanced forces
 - (C) Gravitational force
 - (D) Unbalanced forces
15. What is the net force on the box?
- (A) 10 N to the left
 - (B) 10 N to the right
 - (C) 60 N to the left
 - (D) 50 N to the right

Use the diagram below to answer questions 16 and 17



16. Which of the following would best describe the forces acting on the object?

- (A) Zero
- (B) Balanced forces
- (C) Gravitational force
- (D) Unbalanced forces

17. How would the see-saw move?

- (A) Down with 200N
- (B) Down with 400 N
- (C) It would not move
- (D) Up with 200 N

PART B: MATCHING

Fill in the blanks on the left with the terms on the right. Please, place your answers on the scantron

18. _____ refers to a push or pull	A. Newton
19. _____ do not cause change in motion.	B. Balanced Forces
20. _____ Forces that always result in a change in motion	C. Unbalanced Forces
21. _____ The amount of matter contained in an object.	D. Force
22. _____ is the standard unit of force.	E. Mass

PART C: WRITTEN RESPONSE

1. Define the term force.

2. What is the difference between a balanced force and an unbalanced force?

3. Define the terms mass and weight.

4. Why does the weight of an object change in different places in the universe while the mass remains the same?
