

Name \_\_\_\_\_

Date Due: \_\_\_\_\_

UNIT 4  
Topic 3

STRUCTURES and FORCES  
Mass and Forces

pg. 298-304

Mass

1. What is mass?
2. Why does an egg sized lump of lead have less mass than an elephant?
3. What is the amount of material in the primary standard of mass?
4. Masses smaller than a kilogram are usually expressed in \_\_\_\_\_.
5. "Kilo" means \_\_\_\_\_, so kilogram really means \_\_\_\_\_ grams.
6. What is a "balance"?
7. Why is mass a very useful property to measure?
8. What are the two ways in which mass might change?
  - 1.
  - 2.

Forces and Weight

9. Why is the elephant's mass the same on the Moon as it is on Earth?
10. What are forces?
11. What is the standard unit of force called? \_\_\_\_\_
12. About how much force is needed for the following?
  - a) lifting a D-cell \_\_\_\_\_
  - b) lifting a 1L carton of milk? \_\_\_\_\_
  - c) force of a hard thrown baseball hitting your hand? \_\_\_\_\_

14. What do you need to be able to completely describe a force?

Weight

15. Because weight is a force, what is its proper unit of measurement? \_\_\_\_\_

16. What is the name of the force that tries to pull two objects together? \_\_\_\_\_

17. According to Issac Newton, what does gravitational force depend upon?

18. What is the relationship between gravity and the mass of objects?

19. What do we call gravitational force in everyday language? \_\_\_\_\_

20. On Earth, a 1 kilogram mass has a gravitational force of \_\_\_\_\_.

21. Why is your weight a little less if you are in an airplane or on a high mountain?

22. On the moon your weight is only about one-sixth of your weight on Earth. Why is that?

Picturing Forces:

23. What is a force diagram and what does it show?

24. How is the size of a force shown?

Review:

25. What is the difference between mass and weight?

26. What are the units of measurement for mass?

weight?

27. What instrument is used to measure mass?

28. What type of scale is used to measure weight?