

Name _____

Hour _____

MEASURING MATTER - STUDY GUIDE

Goal 1:

1. Measure the lines to the nearest millimeter and to the nearest tenth of a centimeter (2.3 cm).

_____ mm _____ cm

_____ mm _____ cm

_____ mm _____ cm

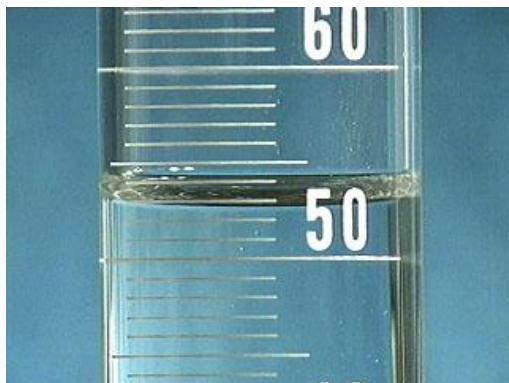
2. List the following in order from longest to shortest.

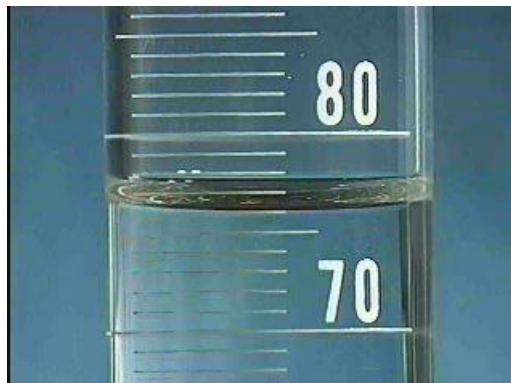
78 m, 78 mm, 78 cm, 78 km _____

Goal 2:

3. Define volume –

4. What is the volume of the liquids below? Include the correct units. Write the volume on the lines below.





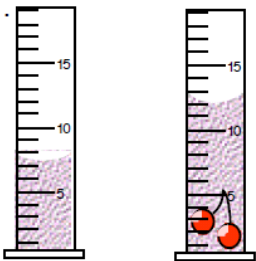
5. List the volumes in order from smallest to largest. *3 L, 3 kL, 3 mL*

6. How do you accurately measure the volume of a liquid in a graduated cylinder?

Goal 3:

7. What are the steps in finding the volume of an irregularly shaped solid object such as a key? Number your steps.

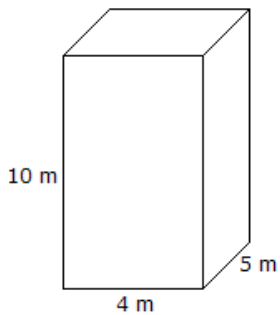
8. Find the volume of the cherry by using water displacement. Include the correct units.



Goal 4:

9. How do you find the volume of a regularly shaped solid object?

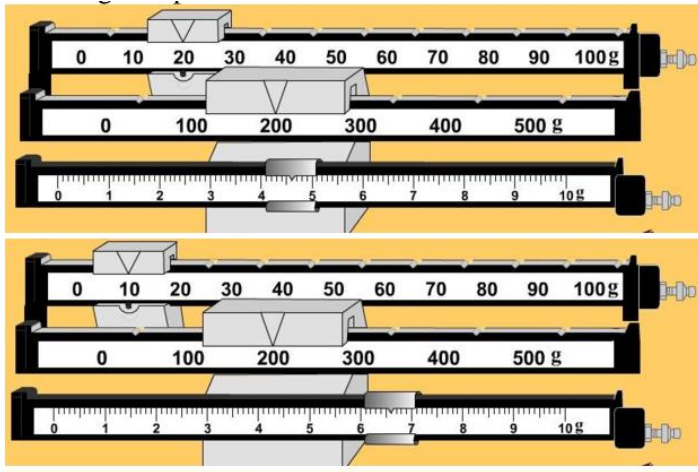
10. Find the volume of the object below. Include correct units.



Goal 5:

11. Define mass.

12. Read the pictures of the triple beam balances below. Include correct units.



Goal 6:

13. What is the difference between mass and weight?

14. Describe what happens to your weight and mass when you go to the moon and Jupiter.

Goal 7:

15. A liquid has a volume of 15 mL and a mass of 30 g. What is the density of this liquid? Include correct units.

16. A pencil has a mass of 24 g and a volume of 11 cm³. Find the density of the pencil. Include correct units.

17. An object has the dimensions of 2.3 cm by 8.9 cm by 1.4 cm. The mass of this object is 46 g. What is the density of this object? Include correct units.

18. A graduated cylinder with water in it reads 62 mL. You place a toy car in the gc to find the volume. The water level rises to 78 mL after you drop in the toy car. The mass of the toy car is 93 g. Find the density of the toy car. Include correct units.

Goal 8:

19. Define density –

20. What is the equation for density?

21. Which object has a greater density, a sponge or a brick? Explain why or how you know.

22. What is the density of water? Would an object with a density of 0.78 g/cm³ sink or float in water?

23. A liquid has a density of 2.34 g/mL. If you drop an object with a density of 3.4 g/cm³ in the liquid, does it sink or float? How do you know?

24. Why does olive oil settle on top of water in a graduated cylinder?

Goal 9:

Directions: Write all possible metric units for numbers 32-37.

25. Mass _____

26. Solid Density _____

27. Liquid Density _____

28. Liquid Volume _____

29. Solid Volume _____

30. Length _____

31. What metric unit would you use for the density of a liquid? _____

32. What metric unit would you use to measure the distance you drive in a car? _____

33. What metric unit would you use to measure the mass of a person? _____

34. What metric unit would you use to measure the density of a golf ball? _____

35. What metric unit would you use to measure the volume of soda? _____

Goal 10:

36. Circle all of the metric units below. Leave non-metric units un-circled.

inches millimeters feet miles kilometers yards centimeters meters

Goal 11:

37. Convert 123.4 mm to km

38. Convert 0.0428 kg to g

39. Convert 93 cm to m

40. Convert 23.6 L to mL