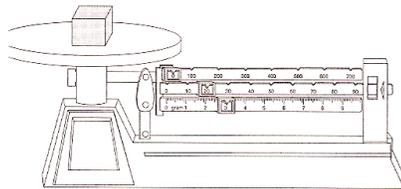
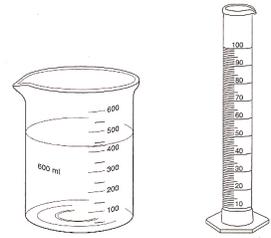


Science Skills 7

Science Tools I Should Know

Volume is how much space something takes up. Liquid volume is usually measured with a graduated cylinder. A graduated cylinder measures volume in milliliters. Some graduated cylinders have increments of 1 mL or 2 mL or some even have increments of 0.1 or 0.2 mL. You must count the increments before you decide on the measurement. If it is a glass graduated cylinder the volume is read at the bottom of the curve (called the meniscus). Beakers can also be used to measure volume but measurements made with a beaker are usually less exact than those made with a graduated cylinder.



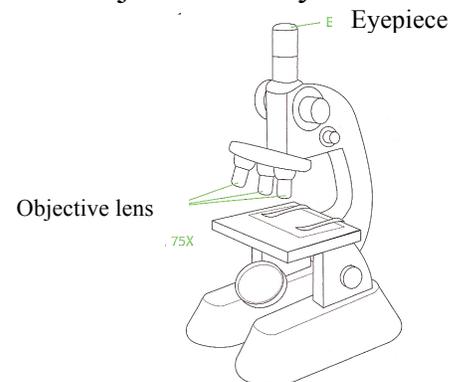
A balance measures mass. A triple beam balance uses riders on three beams to measure mass. Riders on one beam measure hundreds of grams. Riders on a second beam measure grams in tens. Riders on the third beam measure single grams and parts of grams such as 1.0 and 1.5.

Weight is measured with a spring scale. An object attached to a spring scale causes a spring inside the scale to stretch. The weight of the objects, measured in newtons, determines how much the spring stretches. Weight is decided by two things - the pull of gravity and an object's mass. So, a spring scale measures both gravity and mass. A balance does not measure gravity. It only measures mass.



A compound microscope is used to view objects that are too small to be seen with a hand lens. A compound microscope uses two lenses to magnify objects. One lens, called the eyepiece, is the lens you look through. The eyepiece magnifies the object 10 times. A second lens, called the objective lens, magnifies the object even more. When looking through a microscope the objective lens you are using is always the one directly under the eyepiece.

Total magnification equals eyepiece magnification X objective lens magnification. Let's say you use the 10X objective lens. In this case, total magnification would be 10X x 10X, or 100X. So together, these lenses make an object appear 100 times larger than it does without the microscope.



On the front of this paper color the objects according to the directions below.

1. Color the tool that measures mass yellow.
2. Color the tool that measures exact volume red.
3. Color the tool that measures weight blue.
4. Color the tool that measures less exact volume green.
5. Color the tool that magnifies objects orange.

6. Where do you read the volume on a graduated cylinder?

7. What is the curve of the water in a graduated cylinder called? _____

8. What is the unit for liquid volume? _____

9. How many riders are on a triple beam balance? _____

10. What is the unit for mass? _____

11. What is weight decided by? _____ and _____

12. What is the unit of weight? _____

13. What instrument measures weight? _____

14. How many lenses does a compound microscope have? _____

15. What is the lens you look through called? _____

16. What is the magnification of the eyepiece? _____

17. What is the second lens called? _____

18. How do you determine total magnification? _____

19. If the eyepiece magnifies 10X and the objective lens magnifies 43X, what is the total magnification? _____

20. If the eyepiece magnifies 10X and the objective lens magnifies 5X, what is the total magnification? _____