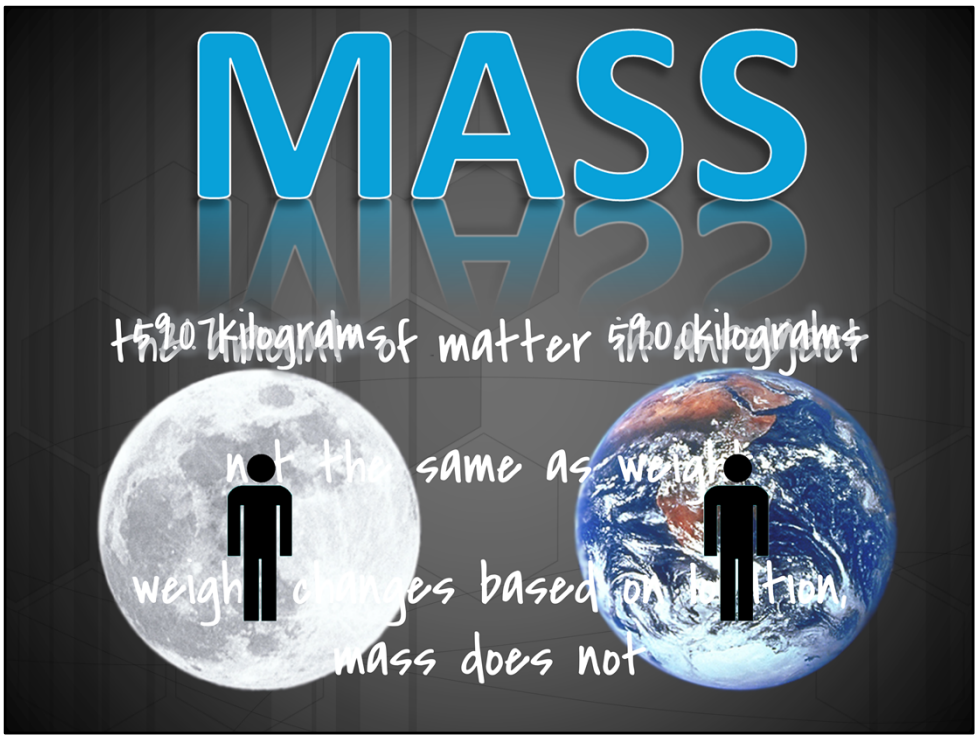
Module 1: What is Chemistry?
Topic 3 Content: Mass Presentation Notes



Mass is the amount of matter in an object. It is not the same as weight. Your weight is a measure of the pull of gravity between you and the body you are standing on. Weight can change based on your location, but mass does not. The moon has a weaker gravitational force than Earth, so if you weigh 130.0 pounds on Earth, you will only weight 21.7 pounds on the moon. If your mass on Earth is 59.0 kilograms, your mass on the moon is also 59.0 kilograms. The most common unit of measurement for mass is grams.

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In laboratories, scientists measure mass in two ways. Science laboratories supporting newer technology might have access to digital scales. Digital scales are easy to operate and can give quick, precise measurements for mass. These scales also support the same accuracy as the triple beam balances at 0.1 grams.

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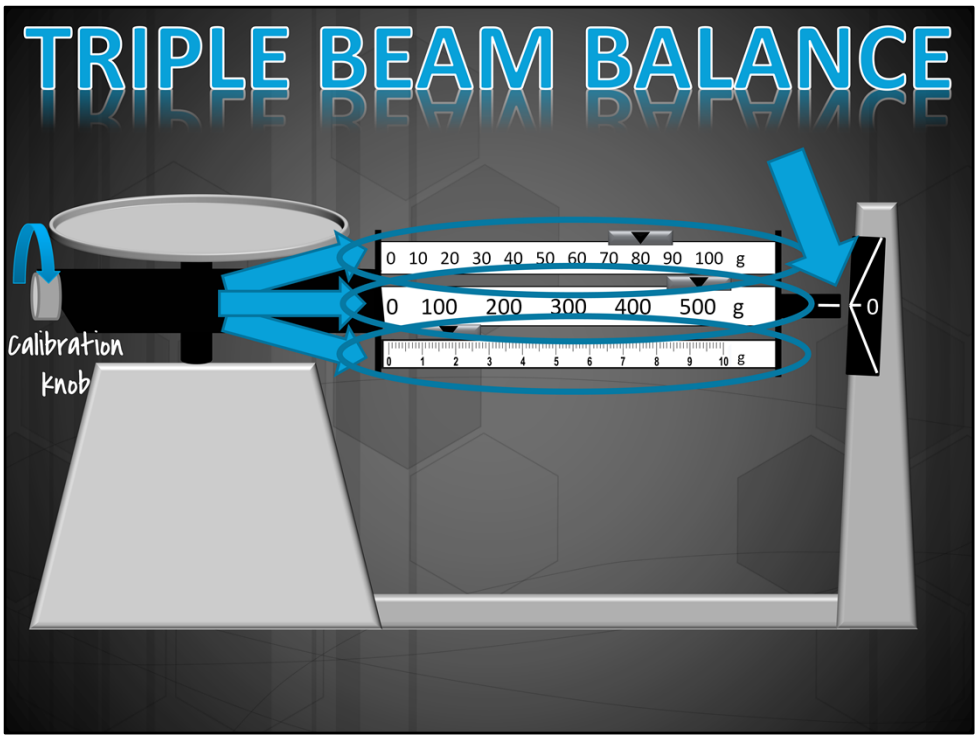

Scientists also measure mass using a triple beam balance, as shown here. A triple beam balance has three beams. Each beam has specific standard mass increments. The highest beam, the central beam, has 100 gram increments. The second beam increases by ten grams. The lowest beam increases by one gram with .10 gram increments in between. Before you begin measuring with a triple beam balance, you must make sure the balance is zeroed. This means that all the weights are moved to the left side of the beams and the pointer lines up straight. You will use the calibration knob to balance the scale. Turn the knob clockwise or counterclockwise until the pointer lines up. Then, you are ready to measure.

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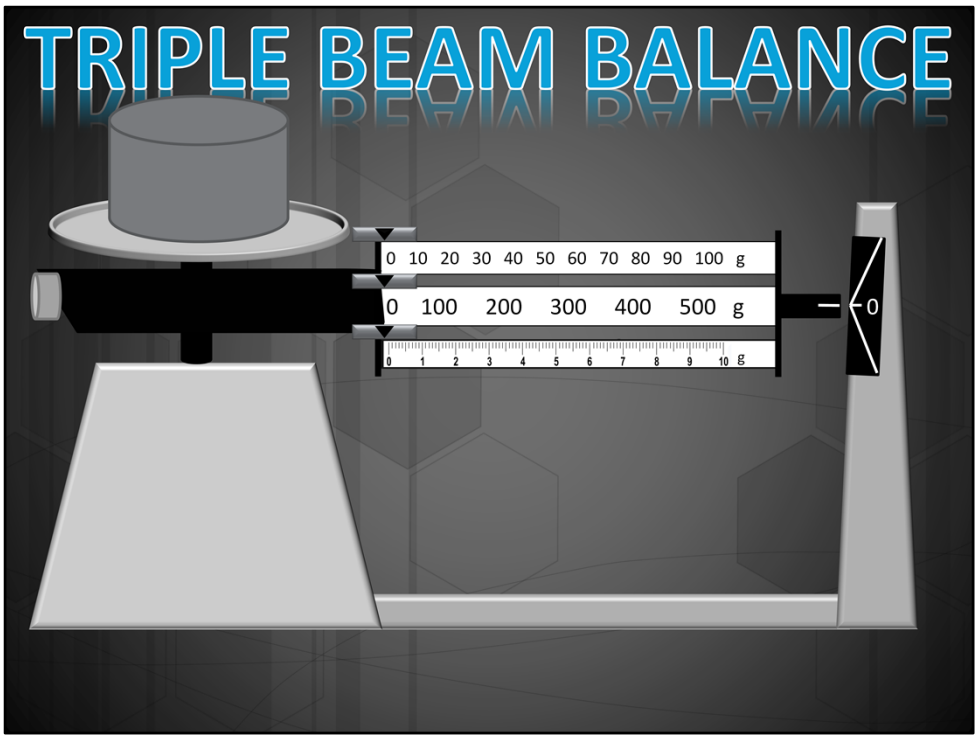

To measure using the triple beam, add a mass to the pan and let the balance settle. You will need to adjust the beams. At this point, you may want to start with the highest beam. Once the pointer is centered, you can record the sum of all three beams. The sum of all three beams is the mass of the object you are trying to measure.

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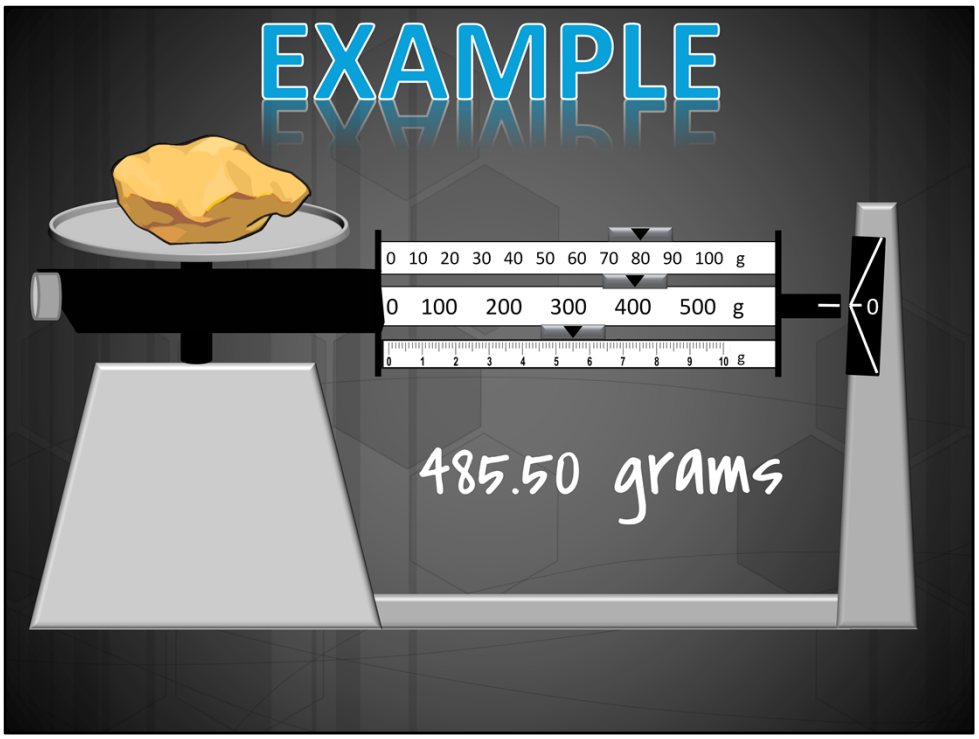

Now that you have learned how to measure mass, it is time for some practice. Are you ready to strike it rich? What is the mass of the golden nugget already on the triple beam balance? You will want to measure the mass of this object to the nearest tenth of a gram. Remember, to find the gold's mass, you take the sum of all three beams. What is the mass of the golden nugget? The mass of the golden nugget is 485.50 grams.