

METRIC TRIATHANLON



Westminster College

GRAM: GUESS THAT WEIGHT

OBJECTIVE:

To make a hypothesis on how many pennies weight 50 grams and test the hypothesis on the balance.

MATERIALS:

- 50 gram weights
- balance
- pennies
- cups
- bowls/plates

EXPERIMENT:

In the science lab, scientists have to use precise measurement when doing experiments involving solid objects. They use the unit called grams to measure the weight. One gram is about how much a One Dollar Bill weights. With me today I have weights. *Pass out the weights to each student.*

I want you to guess how many grams this weighs and write your hypothesis on your paper. Remember a One Dollar Bill weighs one gram. Label your hypothesis using a lower case 'g' (30 g there is no period after the g)

Give students time to write hypothesis. Allow some students to share what they wrote.

Tell students that each weight, no matter what its color, is 50 grams. Who had a hypothesis that was close?

Now that you know how much 50 grams weighs, we will do another experiment. This time you will try to estimate how many pennies equal 50 grams. I will give you a cup and you will fill it until you think you have 50 grams. Once you think you have it, count how many pennies you have in your cup. Write your hypothesis on your paper. Then we will take turns placing your cup on the balance to find out if you were correct.

Pass out cups and the pennies in the bowls/plates. Assist students with hypothesis. On the balance, make sure that it is set to '0' on both sliding scales. Place a 50g weight on one side. Once students are ready, ask them how many pennies and place their cup on the balance. If the balance is sticking, rock it gently by pushing on each side until the pointer on top stops. ANSWER: 15

pennies equals 50 grams. You may have to help the balance along to show the correct answer.

When everyone has tested their cup, tell them the correct number of pennies is 15. Ask, *who was closest?* They are the winner of “Guess that Weight.”

LITER: WATER CHALLENGE

OBJECTIVE:

To make a hypothesis and complete the experiment on how many milliliters of water they can transfer into the graduated cylinder in 30 seconds using an eye dropper.

MATERIALS:

stop watch
graduated cylinder
eye dropper
containers
water

EXPERIMENT:

At the store when we buy pop, we purchase it in 2 Liter bottles. But when we buy milk, we buy it by the gallon. Liters is a part of the metric system and is used when measuring liquids. Today in our experiment we are going to measure using milliliters, labeled ‘ml’.

You will have 30 seconds to transfer water from the container to the graduated cylinder using an eye dropper. This is called a graduated cylinder because there are lines or markings on the side to show how much liquid is inside.

There is a trick to using the eye dropper so PAY CAREFUL ATTENTION. You will do this for 30 seconds.

Now, make a hypothesis on how many milliliters you think you can do. To help you out, the best I’ve seen done in 30 seconds is about 20ml. Label their hypothesis with the abbreviation ‘ml’ (no periods).

Now Begin the experiment, 4 students at a time. Once everyone has gone, ask who was closest to his or her hypothesis. They are winner of the “Water Challenge”.

METER: BALLOON JUMP

OBJECTIVE:

To make a hypothesis and then jump as far as they can in 2 minutes with a balloon in between their legs.

MATERIALS:

- balloons
- measuring tape
- masking tape
- stop watch

EXPERIMENT:

When measuring distance using the Metric System, we use the unit called Meter. In European countries, when people are driving their cars they obey the speed limit in Kilometers Per Hour, unlike here where we use Miles Per Hour. In our triathlon event, we will measure using meters. It is called the Balloon Jump.

You will be given a balloon to put between your knees. On my go, you will start at the starting line and jump as far as you can for 2 minutes with the balloon between your knees. Once you reach the other end, you will bounce to turn around and continue going. You may not touch the balloon with your hand once you start and if the balloon falls or you lose control of the balloon you are done. Once you have finished, figure out how far you jumped by looking at the measuring tape on the ground. Record your results on your paper.

Before we begin, predict how many meters you will balloon jump. Write your hypothesis on your card and label it with a lower case m. (there is no period after the abbreviation-example 40 m.)

Group students 5 at a time. Give each a balloon. Have them start behind the starting line. When everyone is ready start the race and the stop watch. Help students figure out their distance once they are done. After 2 minutes, stop any that are left and have them figure out the distance. Go on to the next group.

Once each group has gone, ask who was closest to their hypothesis. That person is the winner of the Balloon Jump.

Metric Triathlon

Prediction	Actual	Difference (Prediction - Actual) If prediction is less, put a - sign in front of #

Meter: Balloon Jump

Gram: Guess That Weight

Liter: Water Challenge

Mili .001 Centi .01 Deci .1 1 Deca 10 Hecto 100 Kilo 1,000