



## Activities and Games

[Carry That weight!](#)

[How Hard?](#)

[Metal Detectives](#)

[Worth Your Weight in Gold](#)

[Shafts and Ladders](#)

Name: \_\_\_\_\_



## Carry that weight!

### Equipment

For this activity, you will need to collect at least five containers that are all the same size. Empty half gallon, quart or liter of milk cartons are best.

You will need at least five different substances (such as water, newspaper, sand, bark, sawdust, etc.) that you can use to fill your containers. You will also need a set of kitchen or bathroom scales.

What are the materials that you have collected?

1. Water
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Take each substance and use it to fill your container to the very top. Measure the weight of the full container on the scales and record the weight in the table below.

Substance	Weight (grams or pounds)
1. Water	
2.	
3.	
4.	
5.	

If you filled one of your containers with gold, it would weigh 19 times heavier than the container full of water. Use your data collected above to calculate the container's weight if it was full of gold.

It would weigh \_\_\_\_\_ X 19= \_\_\_\_\_

Name: \_\_\_\_\_



## How Hard?

To identify a mineral, scientists measure the mineral's properties. One such property is the hardness of the mineral. To do this, scientists use a number of other minerals of known hardness and try and scratch the 'unknown' mineral. If the known minerals scratch the unknown mineral, then we know the unknown mineral is softer. If the unknown mineral scratches the known mineral, then we know the unknown mineral is harder.

We can do the same tests on materials we find around the classroom or home. Collect some of the following materials:

Wood, crayon, glass, steel, plastic, chalk, clay, coin, rock, cardboard, fingernail

Use the scratch test to find out which is the hardest and which is the softest substance. Then see if you can work out the order of the hardness of the remaining substances from hardest to softest and fill in the table below:

<b>HARDEST</b>	
<b>SOFTEST</b>	

Where on your scale would gold fall? Gold is not as hard as a coin, but it is harder than a fingernail.

---

Name: \_\_\_\_\_



## Metal Detectives

Have you ever wondered how many things we use every day that are made of metal? You might be very surprised! We also use many different types of metals.

Can you find examples of these types of metals in your classroom or around your home? If you can, write down what the metal is used for. You may have to ask an adult for some help.

<b>Metal</b>	<b>What it is used for</b>
Copper	
Tine (a tin can is not made of tin but steel coated in tin)	
Silver	
Iron or steel (steel contains mostly iron)	
Aluminum	

Did you find any gold? \_\_\_\_\_

Some metals have some strange properties. Iron, for example, is magnetic. Most refrigerators are made of steel, which contains iron. That is why magnets will stick to the fridge door. Use a magnet, like a fridge magnet, and test some of the other metals you have found. Are those magnetic as well?

Fill in the table below by placing a check mark for the metals that are magnetic and an X when the metal is not magnetic.

<b>Metal</b>	<b>Magnetic?</b>
Iron (Steel)	
Tin	
Aluminum	
Copper	
Silver	
Gold	

Write down in sentences what you have discovered about magnetic metals?

---

---

---

---

---

---

---

---

---

---

Name: \_\_\_\_\_



## Worth your weight in gold!

Have you ever heard the expression “You are worth your weight in gold?” What would you really be worth if you were made of solid gold? What is your weight in pounds or kilograms? (You may know this, or have to weigh yourself on a bathroom scale).

My weight is: \_\_\_\_\_ lbs or \_\_\_\_\_ kg.

Let’s change your weight into the units for measuring gold- which are Troy Ounces.

**Use this formula if you have measured yourself in pounds:**

My weight (lbs)      X      14.58= my weight in Troy ounces

\_\_\_\_\_      X      14.58= \_\_\_\_\_ Troy ounces

**Use this formula if you have measured yourself in kilograms:**

My weight (kg)      X      32.15= my weight in Troy ounces

\_\_\_\_\_      X      32.15= \_\_\_\_\_ Troy ounces

The next stage is to find the current price of gold. Because gold is bought and sold every day, its price changes because of the amount of gold that is wanted (demand) and the amount of gold available for sale (supply). To find the price of gold you can look it up in the latest newspaper in the business section or on the Internet. The following site lists the latest price of gold: [www.gold.org](http://www.gold.org). The price is always quoted in US Dollars for one Troy ounce.

Price of gold today is: \$US \_\_\_\_\_

So your worth in gold would be:

Price of gold    X      your weight in Troy Ounces

\_\_\_\_\_      X      \_\_\_\_\_

*(If you are not in the USA, you can ask your teacher to convert this value into your local currency.)*



# Shafts and Ladders

