

Estimating Mass

Grams and Kilograms

Ever wonder why some big things like giant stuffed animals can be so light while small things like a case of water bottles can be so heavy? The reason is simple, they have different mass!

Vocabulary

Mass	The measurement of how much something weighs.
Grams	A small unit of measurement: About the same mass as a paperclip.
Kilograms	A larger unit of measurement: About the same mass as a dictionary.

Things to remember:

Grams are
Very Light



1 Kilogram = 1000 grams

What do we use to weigh objects with small mass?

Kilograms are
much heavier



What do we use to weigh objects with large mass?



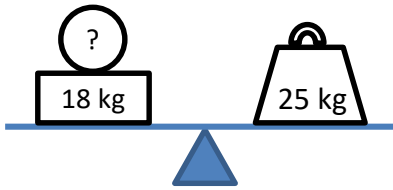
Logic with Mass

Which weighs more? One kilogram of feathers or one kilogram of iron.

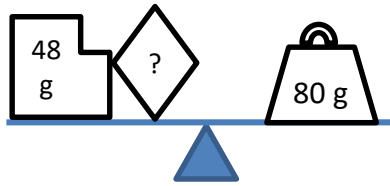
Determining Mass with Scales

Basic Scales

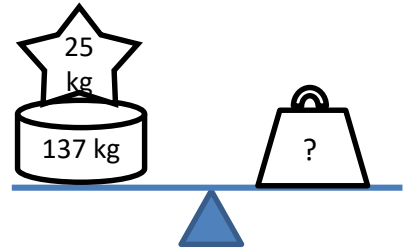
These scales have only one variable. One side has a fixed mass while the other side and two separate objects with different masses.



The circle weighs



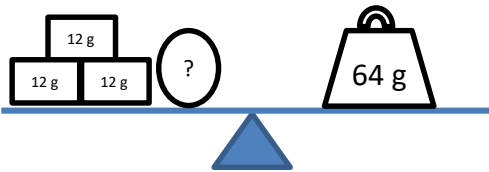
The rhombus weighs



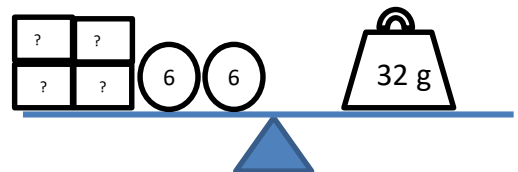
The weight weighs

Average Scales

These scales have only one variable. One side has a fixed mass while the other side and more than two objects, some having the same mass.



The circle weighs

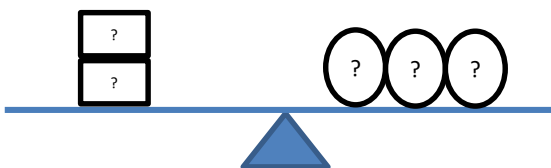


The bricks weigh

each

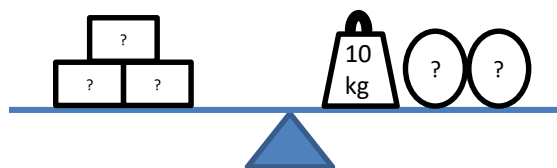
Challenging Scales

These scales have two variables and require a lot of critical thinking. The sides do not always have a fixed mass.



The rectangles probably weigh

The circles probably weigh



The rectangles probably weigh

The circles probably weigh

Estimating Capacity Milliliters and Liters

From your glass of water to your bathtub, anything that holds matter can be measured by using capacity. Capacity tells you exactly how much something can hold before it is filled. It is an important skill to be able to measure and estimate capacity of objects.

Vocabulary

Capacity	The measurement of how much something can hold.
Milliliters	A small unit of measurement: About the same capacity as a water bottle cap.
Liters	A larger unit of measurement: About the same capacity as a large water bottle. Half the capacity of a 2 liter soda bottle.

Things to remember:

Milliliters hold very little.



1 liter = 1000 milliliters

What do we use to determine the capacity of a small object?

Liters hold much more



What do we use to determine the capacity of a large object?



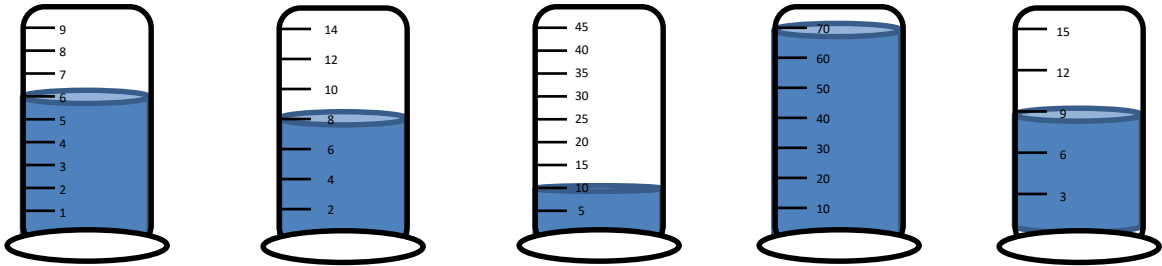
What are other things that can hold liquid?

How are mass and capacity similar and different?

Determining the capacity of cylinders

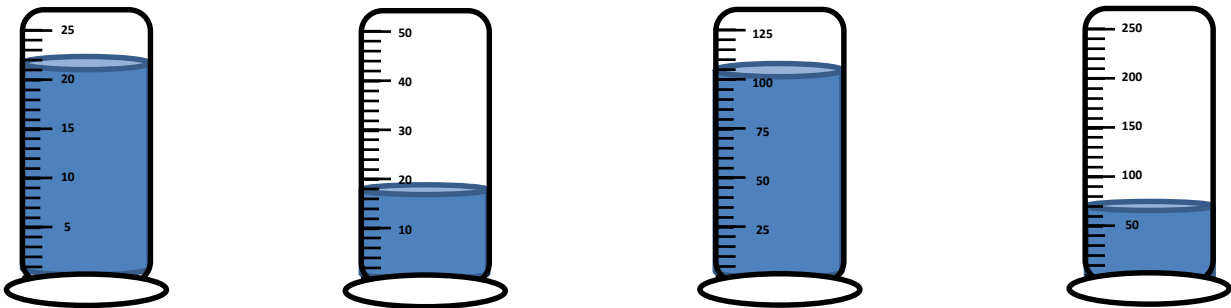
Basic Cylinders

These cylinders have every unit labeled. They are also filled to the nearest unit, not in between them.



Average Cylinders

These cylinders have easy skip counting numbers labeled. The numbers between them are left blank. They are filled to the nearest unit, not in between them.



Challenging Cylinders

These cylinders have large skip counting numbers. They are often filled to the halfway point, meaning you will have to determine what the midpoint is.

