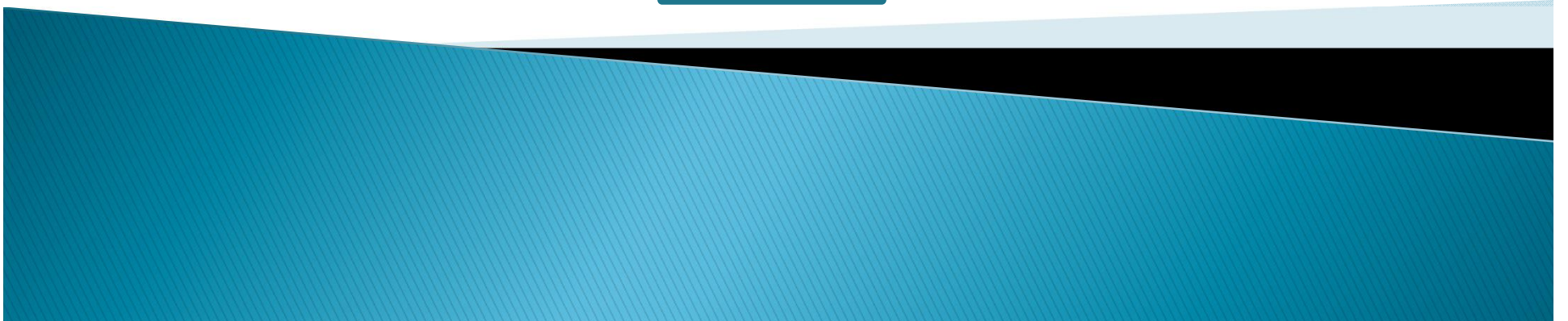


Mastering the Metric System



Have you mastered the metric
system?

If you think that you have, click on
'yes' and let's find out. Otherwise,
click 'no'.

Yes, I think I've mastered it. I'll skip to the
practice problems.

No, I think I need more practice.

Let me see some examples first.



The Metric System: an overview

A system of measurement that dates back to the 1700s

Based on the number 10

Created to be a uniform system that was understood all over the world



Metric System Overview

[View commonly used measurements here](#)

To convert between units, multiply or divide by a power of 10

Simply put: move the decimal the right or left

We'll look at conversions a bit later



Units of Measurement

There are 3 basic quantities that are measured with **3 basic units**:

- **Length** is measured in **meters**

- **Volume** is measured in **liters**

You might see 'liter' spelled 'litre', but don't let that confuse you, they are the same.

- **Mass** is measured in **grams**



Abbreviations

Each of the three basic units can be abbreviated:

Length: meters = m

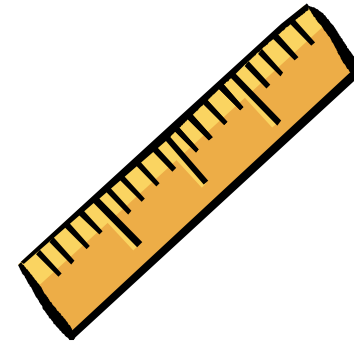
(always a lower case)

Volume: liter = L

(almost always 'L' in the U.S., but 'l' in Europe)

Mass: gram = g

(always a lower case)



The Prefixes

Prefixes are added to the **3 base units** to indicate the measurement

Common prefixes that you will use in this class:

- kilo– which means 1,000
- centi– which means $1/100^{\text{th}}$
- milli– meaning $1/1,000^{\text{th}}$



The Prefixes (continued)

Any prefix can be used with any of the **3 base units**:

kilo added to gram = **kilo**gram (kg)

kilo added to meter = **kilo**meter (km)

kilo added to liter = **kilo**liter (kL)

More examples: **centi**meter (cm), **milli**gram (mg), **milli**liter (mL)



More Prefixes

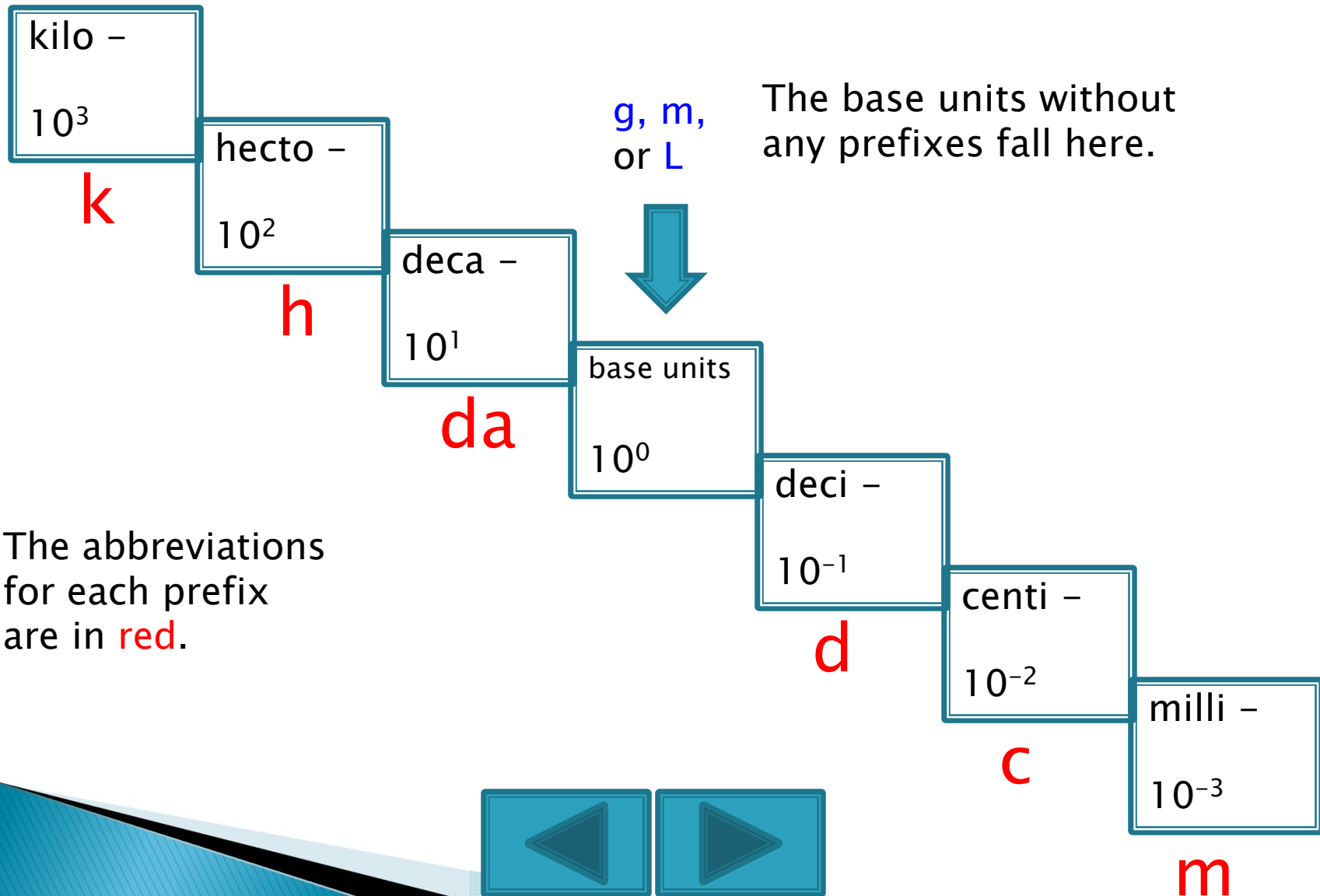
In order to master the basics, here are three more prefixes to know:

- hecto (h) – meaning 100
- deca (da) – meaning 10
- deci (d) – meaning $1/10^{\text{th}}$

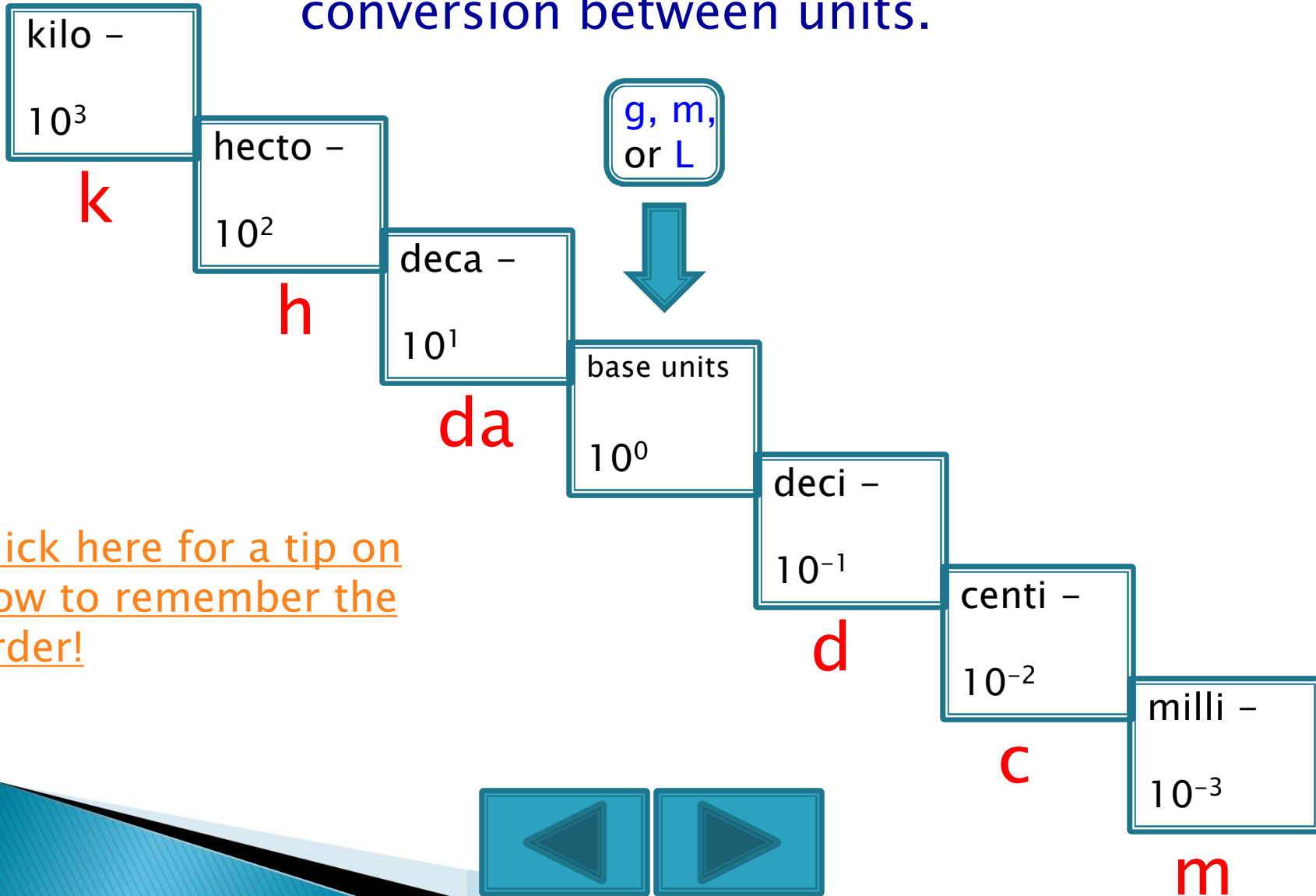
Now let's look at how they all fit together!



Think of the prefixes as a staircase



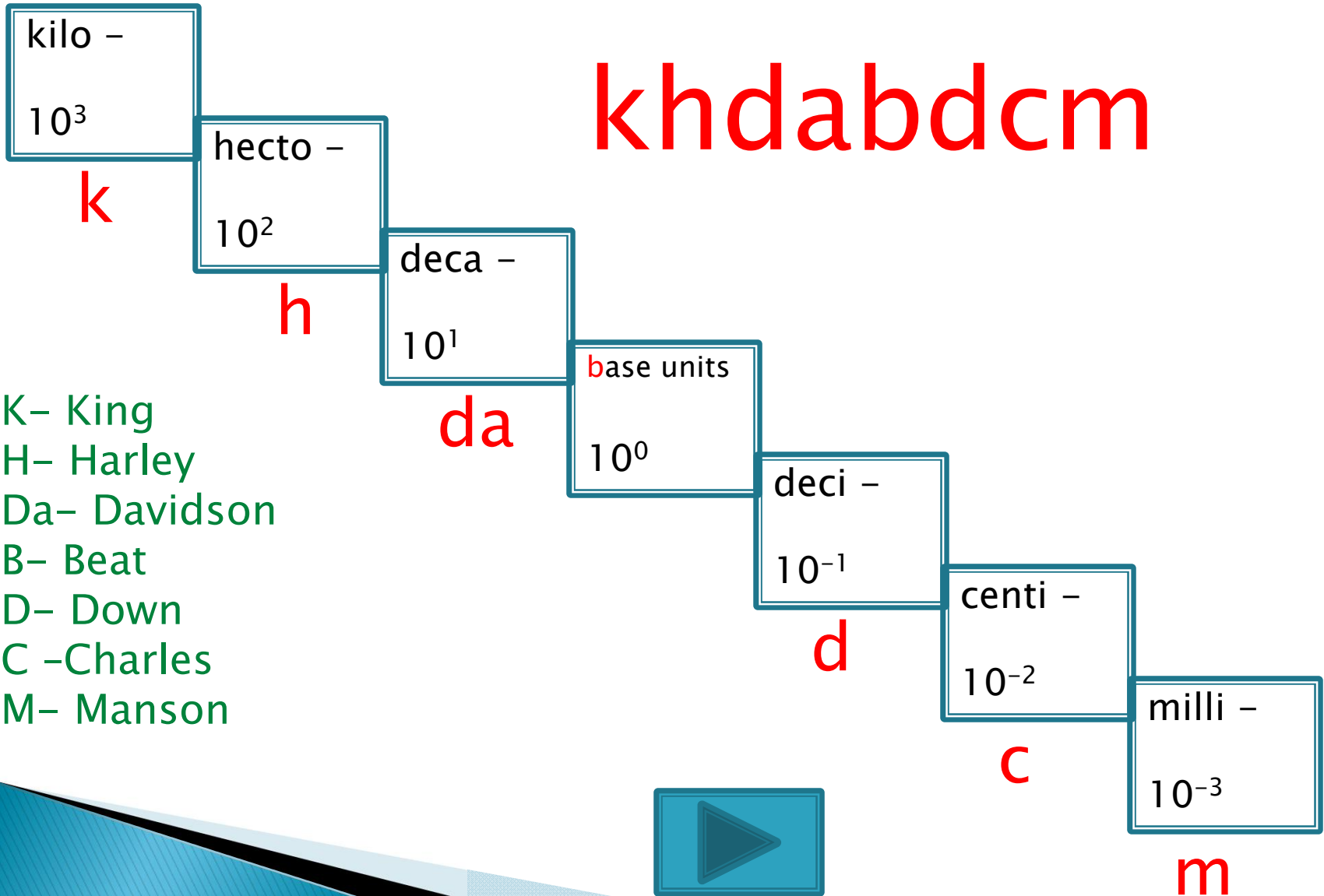
If you can remember the order of these prefixes, you can easily perform any conversion between units.



[Click here for a tip on how to remember the order!](#)



To remember the order, use the abbreviation for each prefix or box to create a memorable phrase.



- K- King
- H- Harley
- Da- Davidson
- B- Beat
- D- Down
- C -Charles
- M- Manson



Let's look at a few sample conversions.

1. Convert 3 kilograms to grams

- $3 \text{ kg} = ? \text{ g}$

2. Convert 45 millimeters to meters

- $45 \text{ mm} = ? \text{ m}$

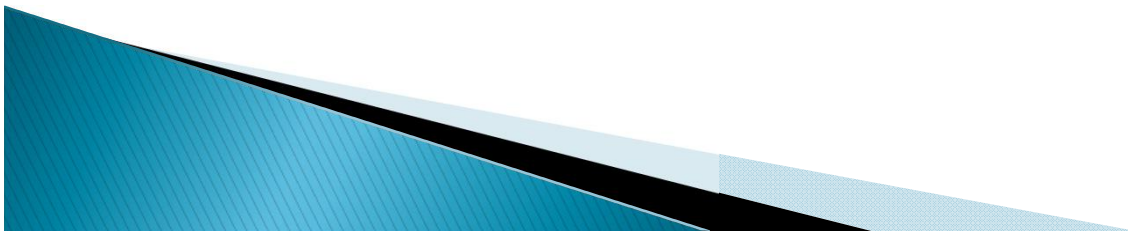
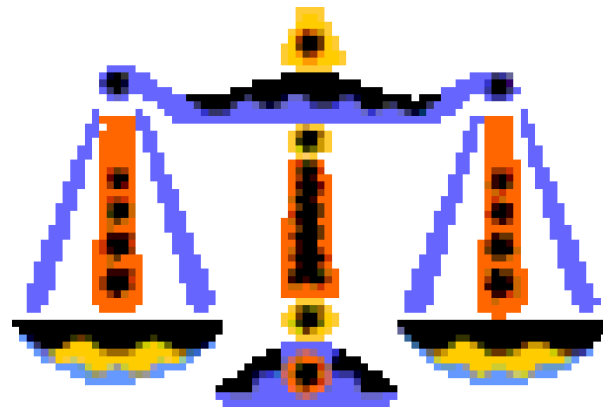
To watch and listen how the staircase can help you, click on the link below



Now it's your turn to try.

How many kilograms are in 125 grams?

- A. 125 kg
- B. 1.25 kg
- C. 0.125 kg
- D. 12.5 kg



Sorry! That's incorrect.



If you haven't done so already, write down the staircase to help you work through this problem.

Remember to identify if you are converting a big unit to a smaller unit or vice versa.

Then you'll know whether to multiply or divide!

Click [here](#) and try again!



You've got it!

Nice Job, you've successfully converted 125 g
to 0.125 kg

Now you're ready to roll!

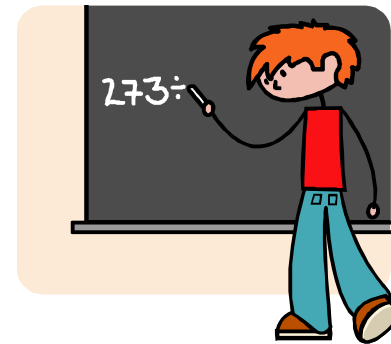
[Try another](#)



Practice #2

How many centimeters are in 340 meters?

- A. 3.40 cm
- B. 3,400 cm
- C. 340,000 cm
- D. 34,000 cm



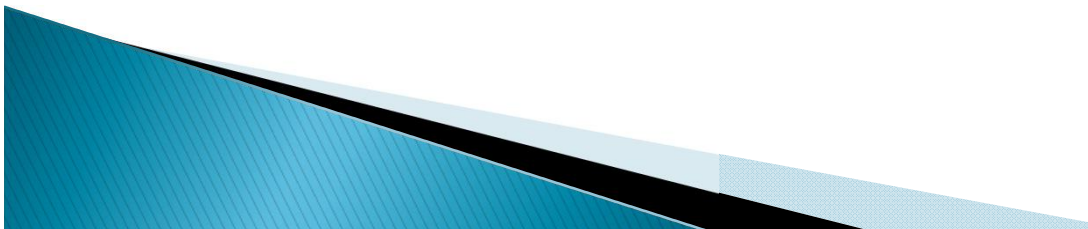
Sorry! That's incorrect.

If you haven't done so already, write down the staircase to help you work through this problem.

Remember to identify if you are converting a big unit to a smaller unit or vice versa.

Then you'll know whether to multiply or divide!

Click [here](#) and try again!





You've got it!

Nice Job, you've successfully converted
340 meters to 34,000 centimeters

Now you're ready to roll!

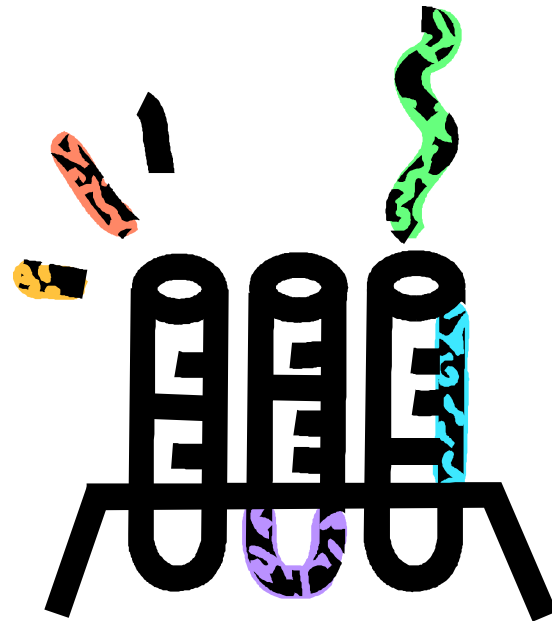
Let's try two more before moving on.



Practice #3

How many hectoliters are in 5,874 milliliters?

- A. 0.05874 hL
- B. 58,740 hL
- C. 0.005874 hL
- D. 58.74 hL



Nice try, but not quite

Take a look at your work and see
find your mistake.

Click [here](#) to try again.



Great Job!

You're a great guesser or you really know what you're doing now!

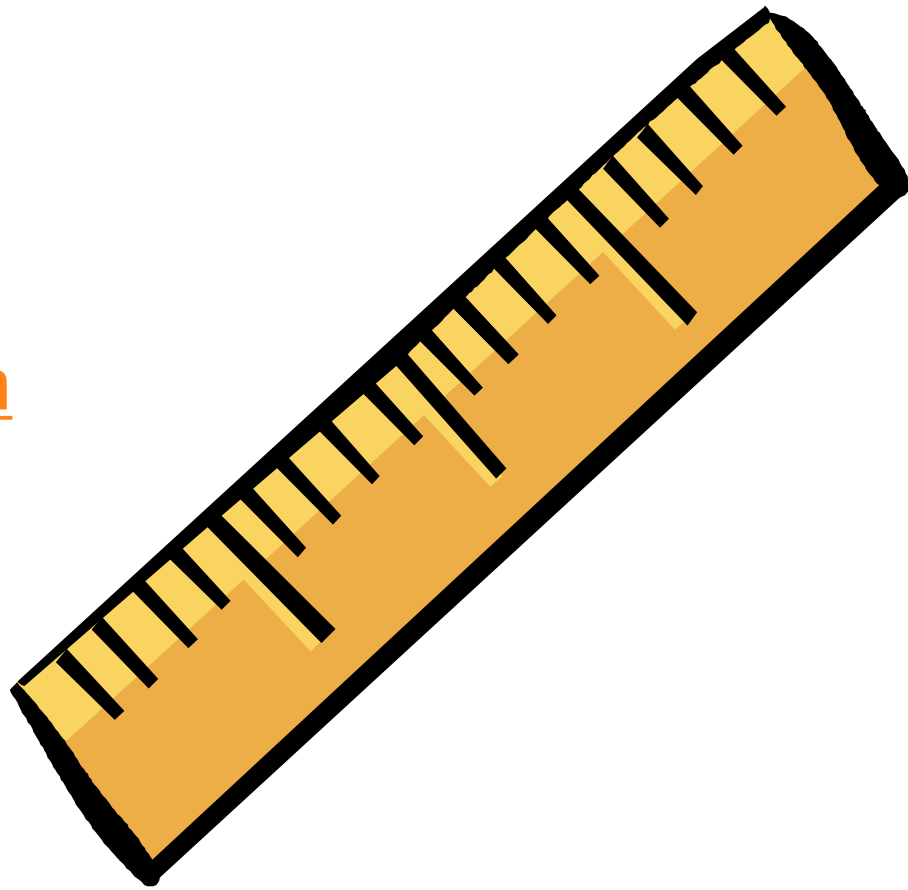
Last practice problem.....



Practice #4

How many centimeters are in 825 kilometers?

- A. 82.5 cm
- B. 825000 cm
- C. 8250000 cm
- D. 82500000 cm

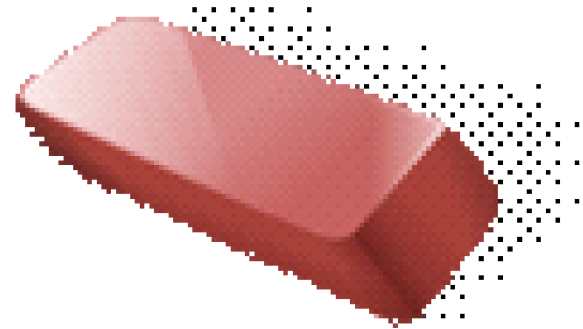


Sorry! That's incorrect.

Check your decimal!

Did you go from a large unit to a small unit or
a small unit to a large unit?

Click [here](#) to try again.



Excellent work!



You are now ready to move on to the next portion.

In the next section, you will create a voicethread to share your saying that you created to remember the order of the prefixes.

Then you will use the voicethread to 'teach' a classmate how to perform metric conversions.

[Click here to get started!](#)

Are we going to have homework?

That's a great question, and the answer is..... Yes, but it should be easy for you.

Print this [worksheet](#) and get started. You might just finish it before you leave.

It will be due at the beginning of class tomorrow.



Great Job Today!



Have a wonderful day and we'll see you tomorrow!

