

Objective:

Identify the difference between Customary and Metric Length



Measurement Review

How long is it?
(Length)



12 inches = 1 foot
3 feet = 1 yard
5280 feet = 1760 yards = 1 mile

10 millimeters = 1 centimeter
100 centimeters = 1 meter
1000 meters = 1 kilometer

How heavy is it?
(Weight/Mass)

1000 grams = 1 kilogram
1000 kilograms = 1 tonne

16 ounces = 1 pound
2000 pounds = 1 ton



How much does it hold?
(Capacity/Volume)

100 milliliters = 1 deciliter
10 deciliters = 1 liter
1000 liters = 1 kiloliter

2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon



Customary Measurement System

The customary measurement system is the system of measurement in the United States. This system measures:

- length in inches, feet, yards, and miles
- capacity in cups, pints, quarts, and gallons
- weight in ounces, pounds, and tons
- temperature in degrees Fahrenheit

*According to the CIA Factbook, the United States is one of three nations (along with Liberia and Myanmar) that have not adopted the metric system as their official system of weights and measures.

The Metric System

The Metric System is a measurement system that measures:

- length in millimeters, centimeters, meters, and kilometers
- capacity in liters and milliliters
- mass in grams and kilograms
- temperature in degrees Celsius

The Metric System is also known as S.I. (System International) or International System of Units.



What's the difference?

Unlike the U.S. customary system of measurement, the metric system is based on 10s. For example, a liter is 10 times larger than a deciliter, and a centigram is 10 times larger than a milligram.

This idea of “10” is not present in the U.S. customary system— there are 12 inches in a foot, and 3 feet in a yard and 5,280 feet in a mile!

Customary Length

What are all the units you can measure the length or height of something?



Length- Inches, Feet, Yards and Miles

What do we need to know?

- how many inches in a foot?**
- how many feet in a yard?**
- how many yards in a mile?**

Customary Units of Length

$$1 \text{ foot (ft)} = 12 \text{ inches (in)}$$

$$1 \text{ yard (yd)} = 3 \text{ feet (ft)}$$

$$1 \text{ yard (yd)} = 36 \text{ inches (in)}$$

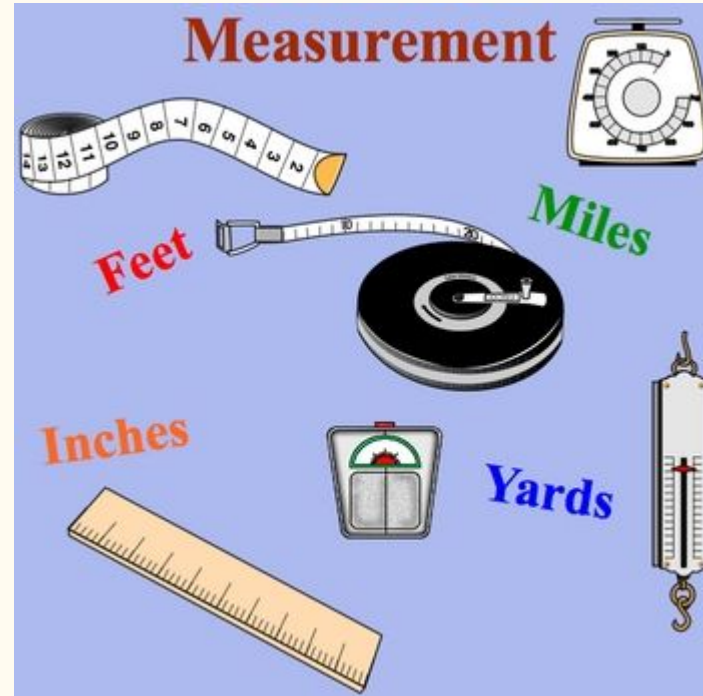
$$1 \text{ mile (mi)} = 1,760 \text{ yards (yd)}$$

$$1 \text{ mile (mi)} = 5,280 \text{ feet (ft)}$$

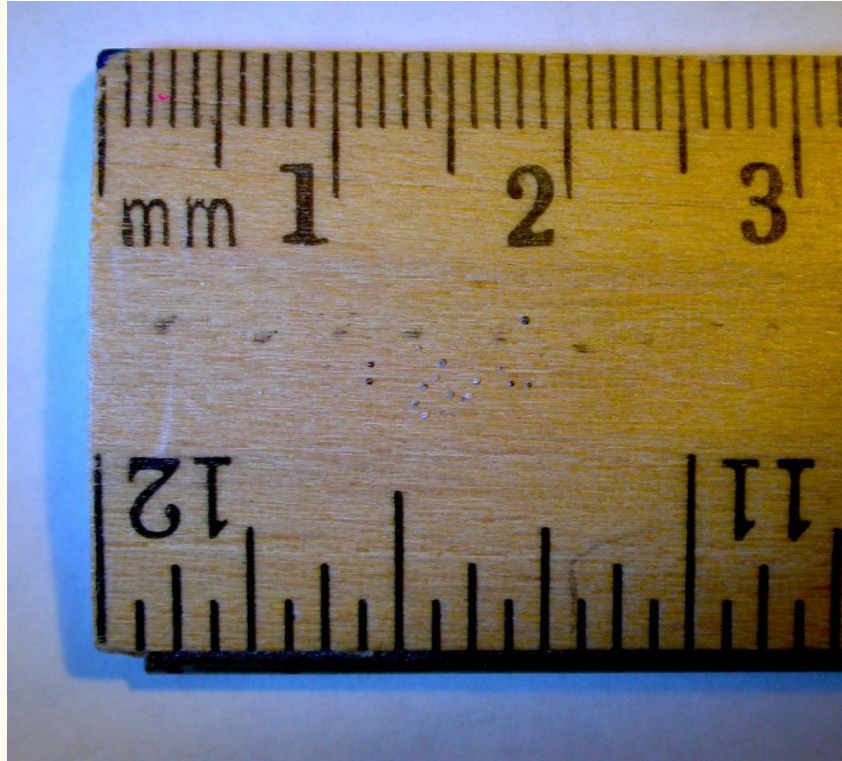
Check for Understanding.....

When would you measure in:

- Inches?
- Feet?
- Yards?
- Miles?




Measuring Length in the Metric System



This is a
centimeter.

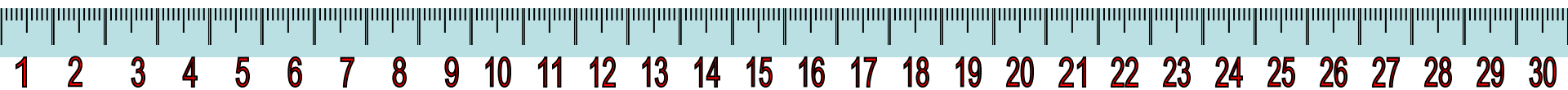


A centimeter is 
about the same size
as one m&m.



Centimeters are
used to measure
small objects.

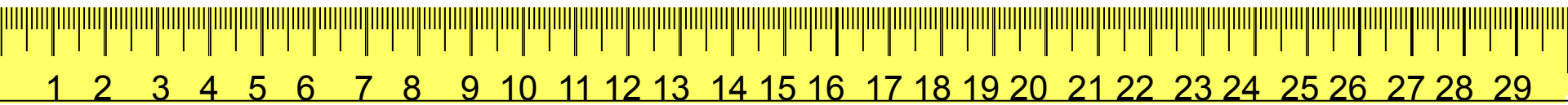
We put several centimeters together to make a metric ruler.



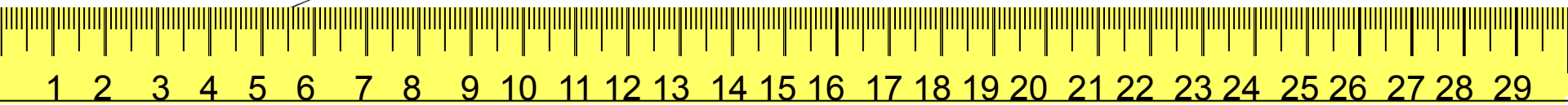
If we add those numbers to the stick, this is what it will look like.



Now, we can use this metric ruler to measure larger objects like pencils, books, and keyboards.



How long is this pencil?



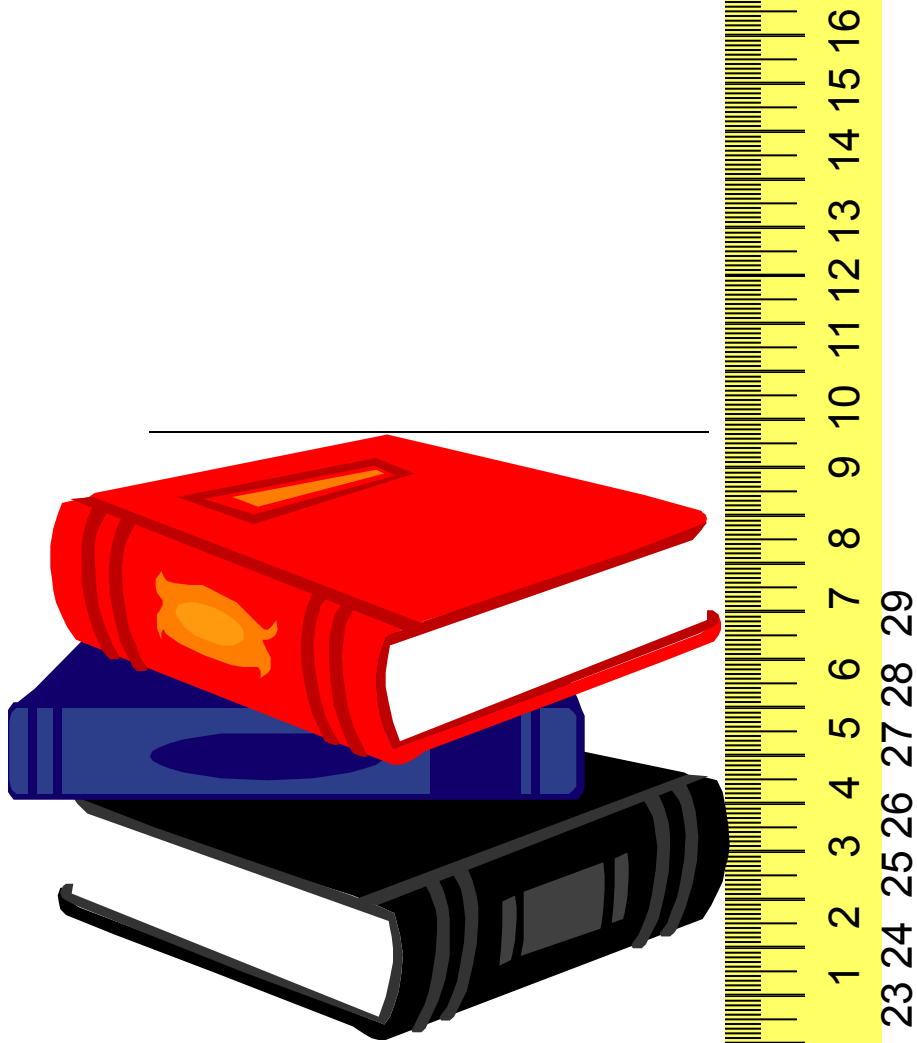
Did you say 7 centimeters?

How long is this keyboard?



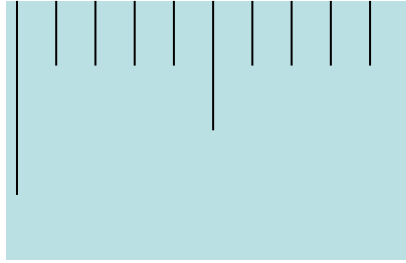
Did you say 22 centimeters?

How tall is this stack of books?



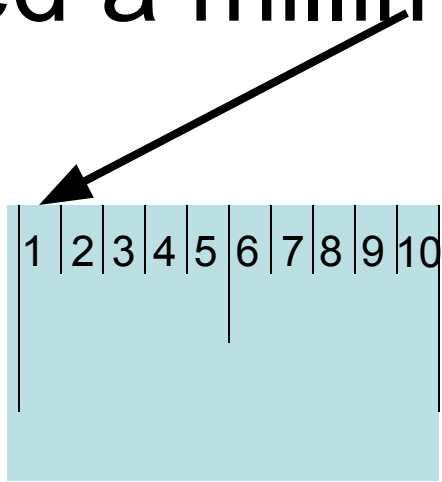
Did you say
10
centimeters?

What if we wanted to measure really small things? If you look very closely at a centimeter, you'll see it's divided up into ten tiny parts.



Let's make it bigger to see these little parts.

Each one of these tiny parts is called a millimeter.



There are 10 millimeters in every centimeter.

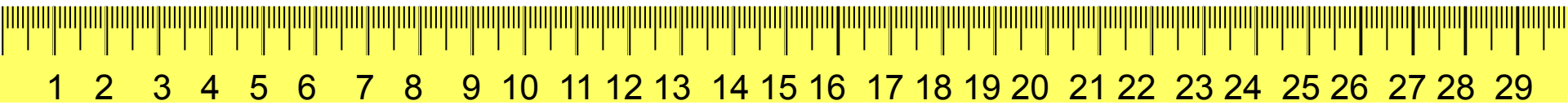
Remember though, millimeters are
very, very tiny.

10 of them are in every centimeter.



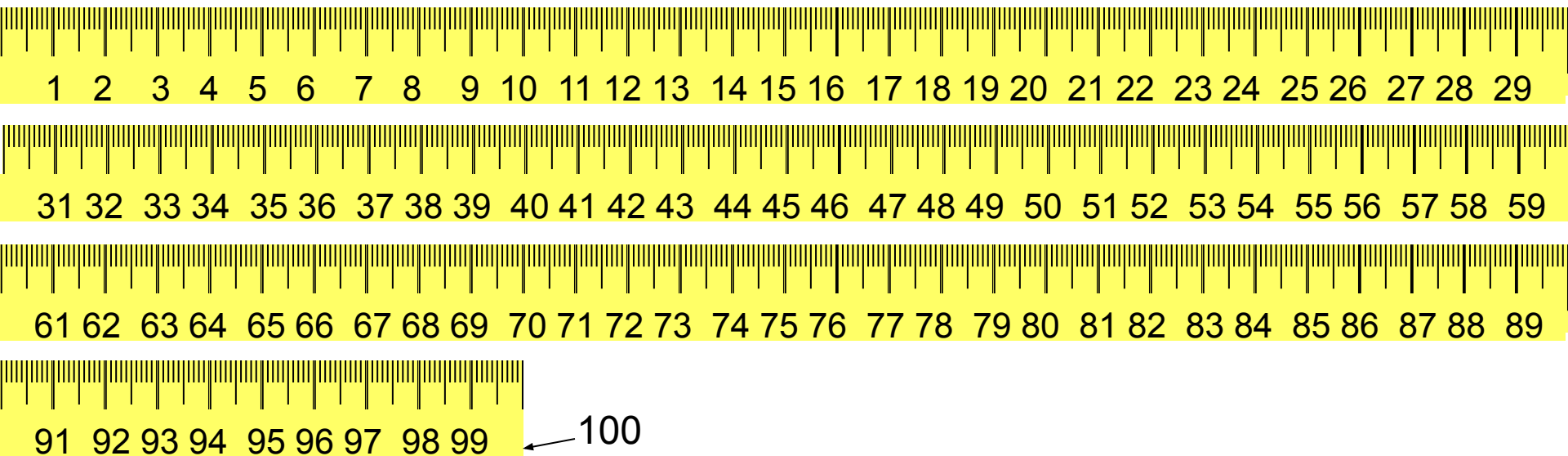
Some items that may need to
measured with millimeters are
eraser tips, fingernails, and eye
lashes.

When we need to measure larger items, we need to put a lot of centimeters together. In fact we need 100 centimeters to make one meter.

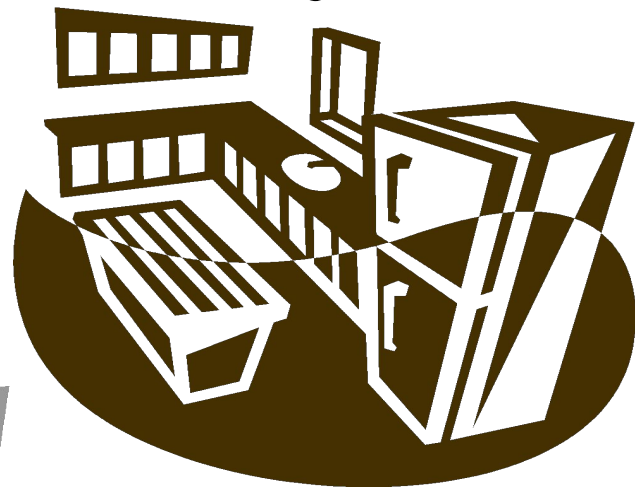


This is about 30 centimeters, so we'd need a little over 3 of these to make a meter

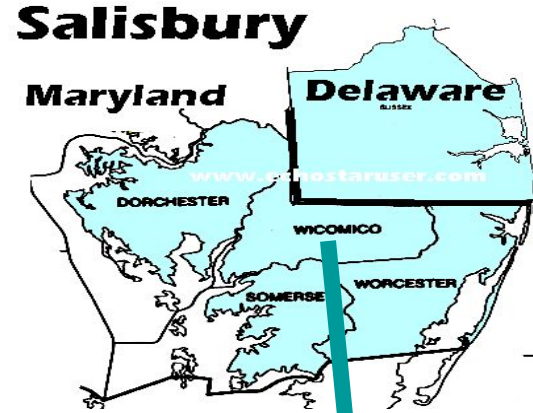
Put all of these end to end and you
make a meter stick.



Meters are used to measure things like desks, rooms, and hallways.



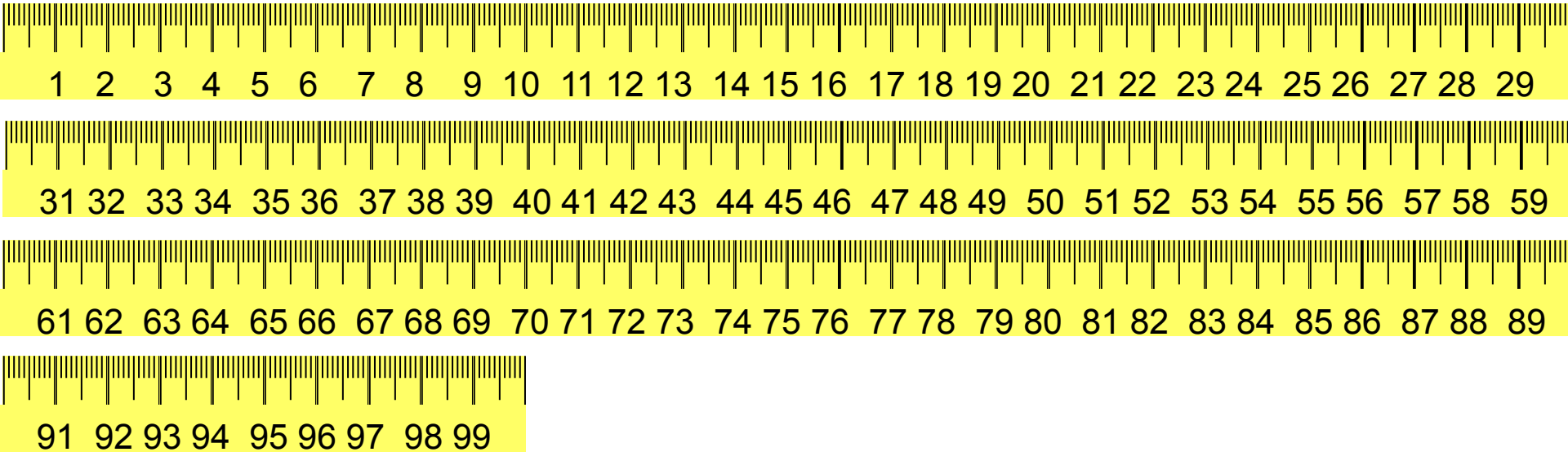
What if you want to
measure distances between
places that are far apart like
Salisbury and Disney
World?



That's a LONG distance!

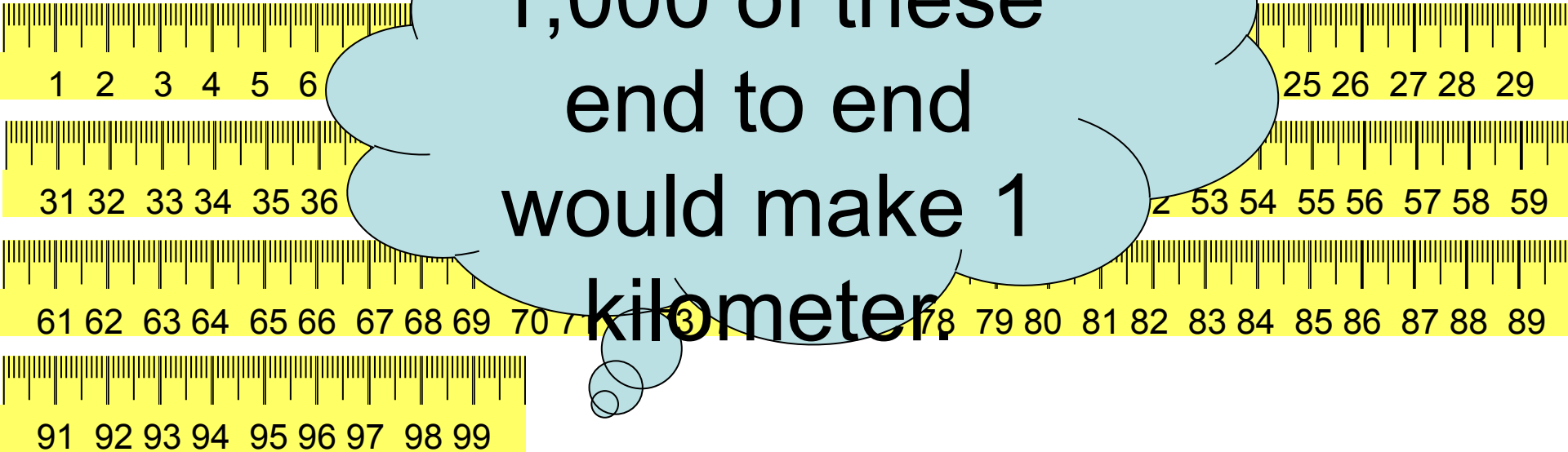
It would take a LONG TIME
to do it with a meter stick,
wouldn't it?

To measure long distances with metrics we use kilometers. To make a kilometer, it takes 1,000 meters.



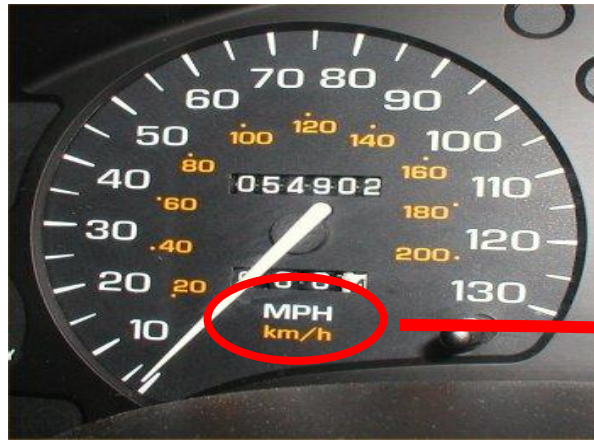
Too many to show on this screen.

1,000 of these
end to end
would make 1
kilometer.



The family car is a
great place to see
kilometers.





If you look at the speed dial in the car, you'll see that the speed of the car can be seen in two ways, **miles per hour (MPH)** and **kilometers per hour (km/h)**.

Metric Abbreviations

- Millimeter – mm
- Centimeter – cm
- Meter – m
- Kilometer - km

Metric System Common Conversions

10 millimeters (mm) =	1 centimeter (cm)
10 centimeters =	1 decimeter (dm) = 100 millimeters
100 centimeter =	1 meter (m) = 1,000 millimeters
1000 meters =	1 kilometer (km)

Try it out

Remember: 10 millimeters = 1 centimeter

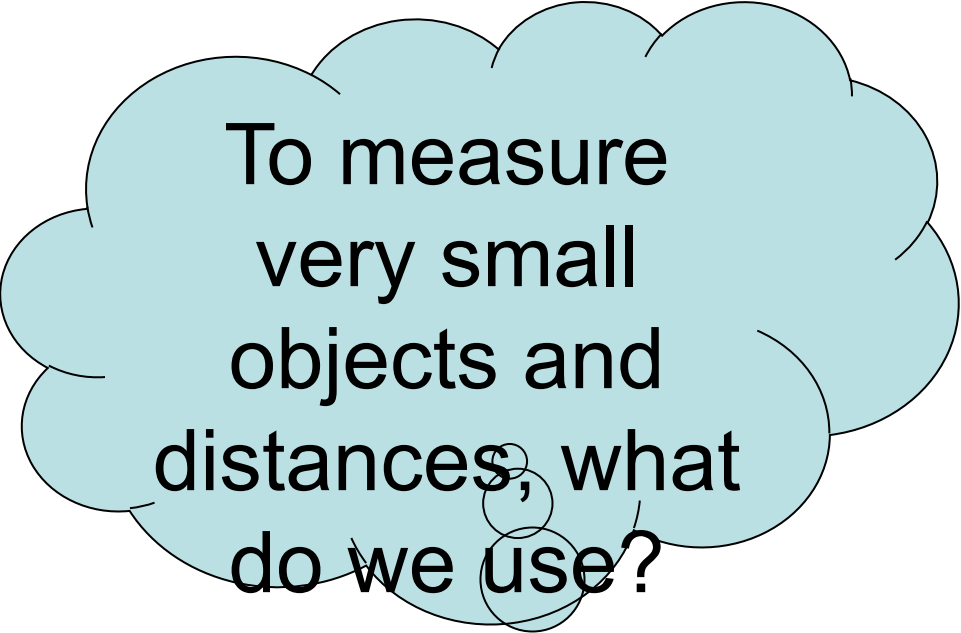
If I have a pencil that measures 40 millimeters (40 mm), how many centimeters is the pencil?

How do you know?

Converting Metric Length

If you have this	Do this	To get this
millimeters (mm)	Divide by 10 (mm/10)	centimeter (cm)
centimeters (cm)	Multiply by 10 (cm * 10)	Millimeters (mm)
Meters (m)	Multiply by 100 (m * 100)	Centimeters (cm)
Centimeters (cm)	Divide by 100 (cm/100)	Meters (m)

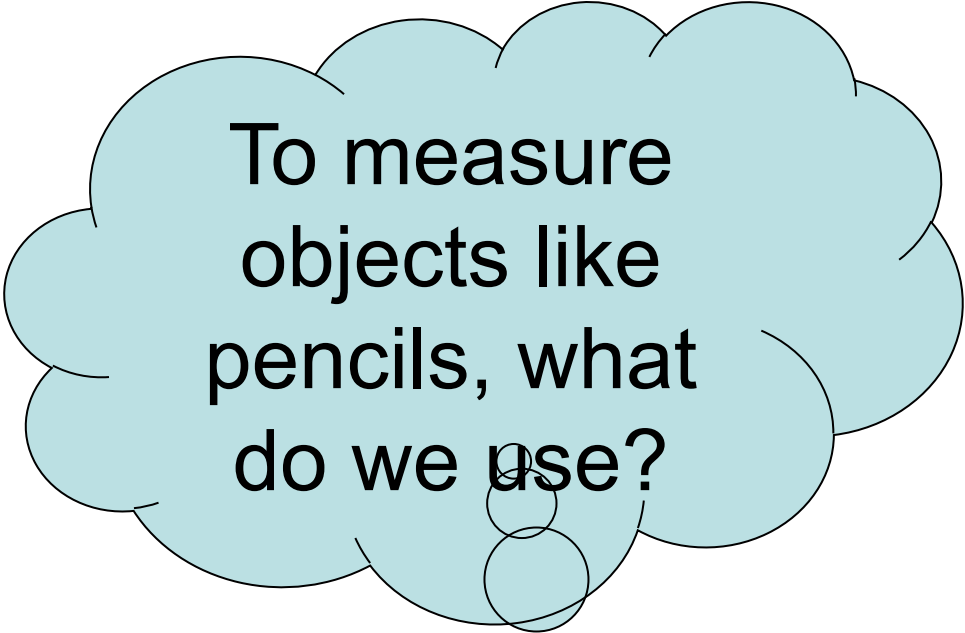
Let's review:



To measure
very small
objects and
distances, what
do we use?

millimeters

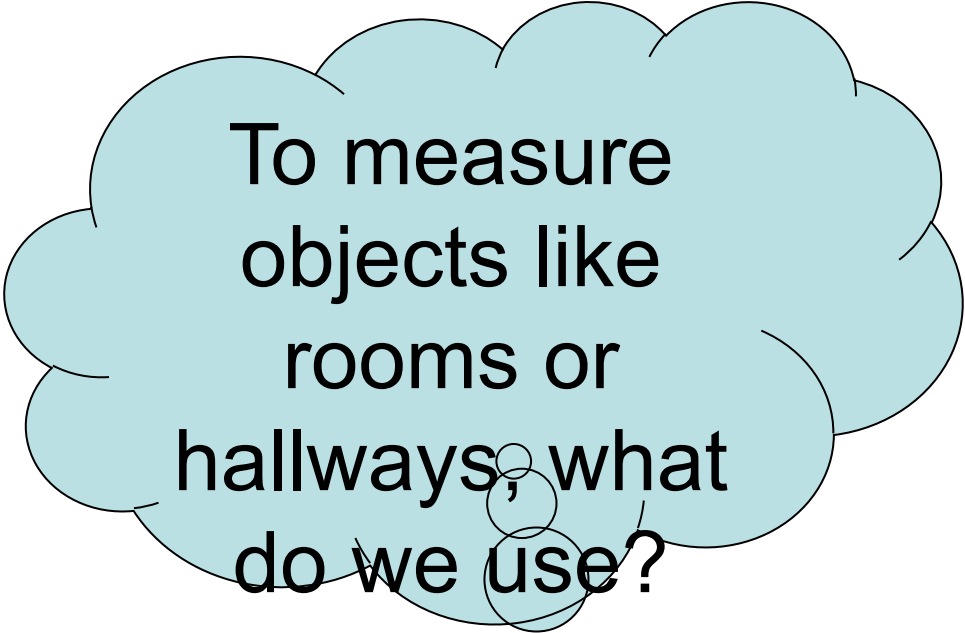
mm



To measure
objects like
pencils, what
do we use?

centimeters

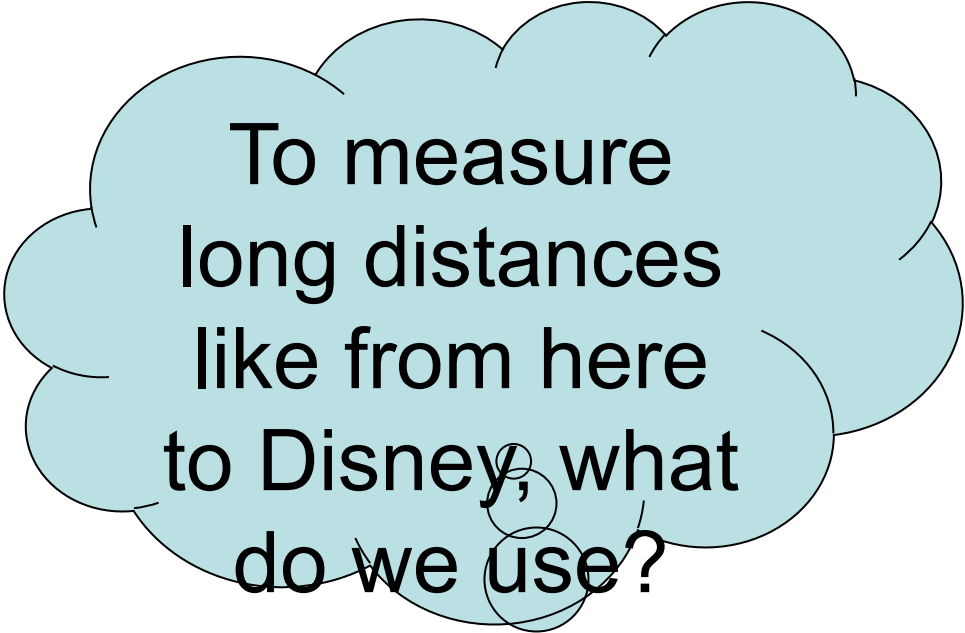
cm



To measure
objects like
rooms or
hallways, what
do we use?

meters

m



To measure
long distances
like from here
to Disney, what
do we use?

kilometers

km

Check for Understanding

- Google Classroom quiz
 - ABCya “Strolling with my Gnomies”
 - On Google Classroom
 - Go onto Khan Academy “Measurement”

Wrapping it Up

*Go through units of measure for both customary and metric length

*How do they compare? Are any measurements similar?