



# **Scientific Observations**



# Types of Observations

- Qualitative
- Quantitative





# Qualitative Observations

- Qualities
  - Characteristics
  - Descriptions
- Describe the object as though you are an alien that has never seen it before.

## Scientific Tools



Thermometer



Stopwatch



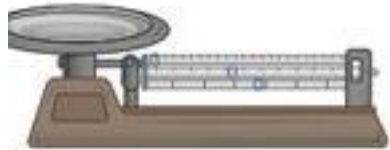
Beaker



Graduated cylinder



Syringe



Triple beam balance



Pan balance



Spring balance



Tape measure



Ruler



Measuring tape



# Quantitative Observations

- Quantity
- Number
- Measurement

## *Qualitative* observations

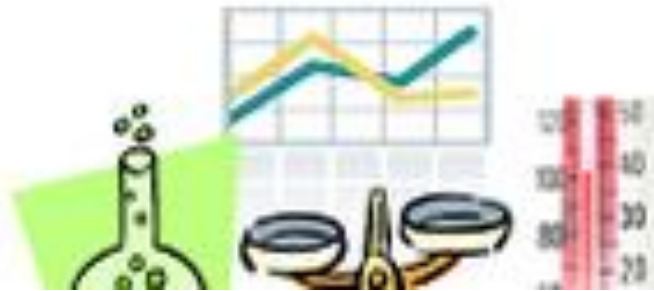
use your senses to  
observe the results.



## *QuaNtitative* observations

are made with instruments  
such as rulers, balances,  
graduated cylinders, beakers,  
and thermometers.  
These results are measurable.

(numbers)



**Quality vs.  
Quantity**

## Types of STEM Observations

### Quantitative

Observations that use measurement tools

- Thermometer
- Measuring Tape
- Ruler
- Scale or Balance
- Measuring Cup
- Spring Scale
- Cylinder

### Qualitative

Observations that use our senses

- Smell
- Taste
- Touch
- Sound
- Hearing

Quality vs.  
Quantity

## Comparing Observations and Inferences

Sample Observations	Sample Inferences
The footprints in the soil each have five toes.	An animal made the footprints.
The larger footprints are about 20 cm long.	A bear made the footprints.
The space between each pair of footprints is about 30 cm.	The animal was walking, not running.

## Inference

- Interpretation
- Judgement
- Conclusion

# Assignment

- Complete the Benjamushi "Lab"
  - You will need your notebook



shutterstock.com + 511858639