

③ Thinking Like a Scientist:  
Scientists use skills such as  
observing, inferring, predicting  
classifying & making models  
to learn more about the  
world.

## I. Observing

A. Using one or more of your senses to gather information

1. Sight
2. Smell
3. Taste
4. Touch
5. Hearing

B. Observations can be:

1. Quantitative Observations

- deal with a # or amount

i. Seeing that you have two new emails

2. Qualitative Observations

- deal with descriptions that cannot be expressed in #s.

i. Noticing that a bike is blue.

ii. noticing that something tastes sour

## II. Inferring

A. When you explain or interpret the things you observe, you are inferring, or making an inference.

1. Does NOT mean guessing wildly

i. Based on reasoning from what you already know

2. Inferences are NOT always correct

i. Someone took a test & looks happy  
You think it's the test grade  
but it may be something else

3. Inferences are about what has happened in the past.

## 11/8: III. Predicting

A. Making a forecast of what will happen in the future based on past experience or evidence.

\* About what will happen in the future

1. We may back away from a growling animal
2. We may predict that we will win a bball game against a team we've beaten before

## IV. Classifying:

A. The Process of grouping together items that are alike in some way

1. Organizing a notebook by subject
2. Having a dresser drawer for socks and another for shorts.

## V. Making Models

A. Creating representations of complex objects or processes. Models help people understand things that are complex or that can't be observed directly.

1. Physical objects such as a globe

2. Can be computer generated
3. Are only representative of real world data
  - i. resting
  - ii. climbing
  - iii. feeding

## Scientific Attitudes:

- ① Curiosity: Eagerness to learn more
- ② Honesty: Reporting observations & results truthfully
- ③ Open Mindedness. Have an open mind & Skepticism · but balanced with an attitude of doubt
- ④ Creativity: Coming up with inventive ways to solve problems.

