***SCIENTIFIC METHOD***

- an _____ & _____ approach to problem solving

***STEP 1a*** _____

- By observing the world around you it is possible to see new things and begin to wonder how to _____ the events that you see.

***STEP 1 a*** _____

- develop a clear statement or question _____ the problem from your observations
  - For Example: Why are there worms on the sidewalks after it rains?

***STEP 1b*** _____

- learn all that is _____ about your problem
  - use any resource available to you (ie. books, magazines, experts, internet, etc)
  - make _____!!! Note the characteristics of an object/situation

***STEP 2*** _____

- Propose a _____ to the problem based on available information
  - this is an _____ or an inference
    - For Example: **If** rain turns into worms, **then** that's why worms are on the sidewalk after it rains.

***STEP 3*** _____

- experiments are used to _____ (_____) a hypothesis
- experiments must be done and explained in a way that they may be _____!!
- experiments contain 2 parts:
  - _____ - contains variable being tested
  - _____ - same as experimental set-up w/out the variable

***STEP 3 continued*** _____

- _____ - a factor that can change in an experiment
  - **Manipulated variable –** the one factor that the scientist _____ during an experiment (a.k.a. – independent variable).
  - **Responding variable -** the factor (s) that *may* change in response to that manipulated variable (a.k.a. – dependent variable)

***STEP 4*** _____

- information that is _____ or _____ must be recorded -- this is data

- observations require _____
- measured data is most often recorded in _____ & _____
  - used to _____/_____ info

***STEP 5*** **_____**

- ❑ Can you make predictions based on the data and your hypothesis?
- ❑ Does the data support the hypothesis?
- ❑ Does the data refute the hypothesis?
  - If so, do you need to change the hypothesis or throw it out and start over?
- ❑ Does the answer to your problem present any new questions/problems?

***STEP 6*** **_____**

- _____ enable others to review your work.
  - Examples:_____
    _____

***Definitions:***

**Scientific Theory –** A well _____
explanation_____

- This is NOT a fact! It has just not been proven wrong. There is still the possibility it could be.
  - Examples: Evolution, Relativity

**Scientific Law -** A _____ describing a _____ in _____.
It happens _____ time, all the _____.

- Examples: Gravity, Thermodynamics, Motion