PDN

(Immediately take your seat and begin answering the question below.)

In one to two sentences, identify which of the images would represent the INDEPENDENT VARIABLE and which would represent the DEPENDENT VARIABLE in an experiment involving the use of “fertilizer X”

Independent variable

The variable the researcher changes.

Dependent variable

Variable affected by change in independent variable

Classwork 1.4 - 1.5

The goal of the next two lessons will be for you to PLAN and CONDUCT an investigation of how acid rain can affect the rate of erosion in a statue.

REMEMBER THE FOLLOWING

1) All plans must be complete by the END OF CLASS
2) You will only be allowed the materials listed on the board
3) You must be able to complete your investigation AND clean up within one class period.

WE WILL BE WORKING ON THIS STEP BY STEP IN THE FOLLOWING ORDER

EXAMPLE → GROUP WORK → REVIEW → REPEAT FOR NEXT STEP

Tools and Materials

Tools

Electronic Balance

Ruler

Graduated Cylinder

Beaker

Tweezers

Magnifying Glass

Sand Paper

Shaking Jars

Materials

Chalk

Alkaseltzer Tablets

Salt

Sand

Sugar Cubes

Vinegar

Water

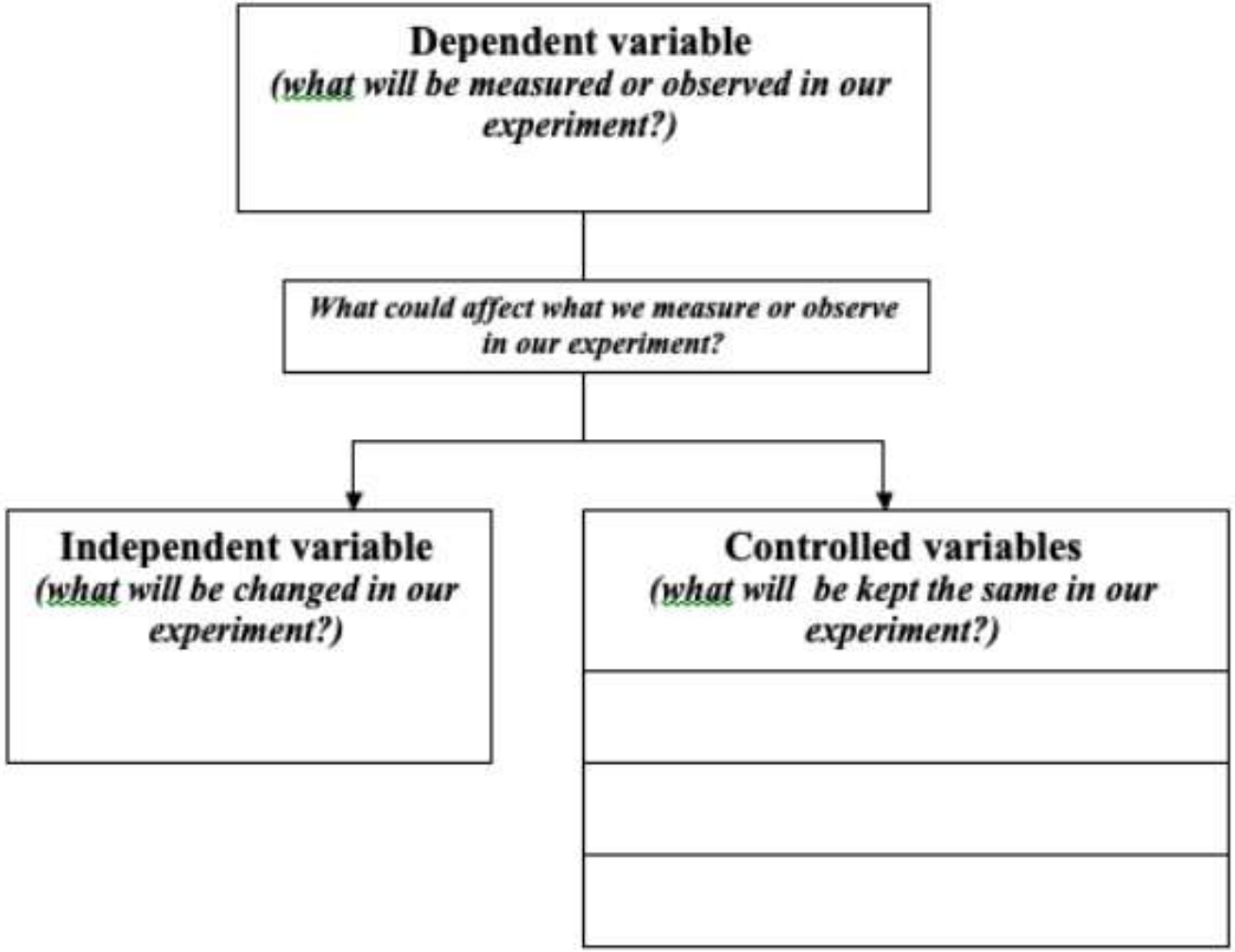
Phenomena

The image below is of a statue sculpted in 1908, while the image on the right was of the same statue in 1969. This statue was sculpted out of limestone, a rock that contains a large amount of the mineral calcium carbonate ($CaCO_3$). This statue was also erected in a heavily populated city known to be affected by acid rain.

Question: *(What are we trying to find out?)*

How does increasing levels of acid affect the rate at which a statue will erode?

Determining experimental values:



Our prediction *(What do we think will happen and why? The ....independent variable will cause the …. dependent variable to ….)*

What equipment do we need? How will we set it up? *(Labelled drawings of the equipment and materials we will need) HINT: See board for available materials.*

Procedure *(What will we do? How will we keep safe? Our list of the steps in our experiment):*

Recording our results *(What is the best way to record our results? Are our results the same as, or different from, the results of other teams?)*

Results:

Are our results the same as or similar to the results of other teams?

Explaining our results *(What happened to…<dependent variable>…when we changed… <independent variable>…? Why did this happen?)*

Conclusion *(What is our answer to our investigation?)*

Reflection *(How well do I think we did the investigation? Could we improve the way we did the investigation? What questions do I have which could be investigated in future?)*