



The P.A.W. Principle – Background Information

The scientific method is used as a way to ask questions and find answers in science. Although this is a natural process for most curious minds, the following list provides structure for students to go through this process in a step-wise fashion:

- Ask a Question
- Do Background Research
- Construct a Hypothesis
- Test Your Hypothesis by Doing an Experiment
- Analyze Your Data and Draw a Conclusion
- Communicate Your Results

ASK A QUESTION:

During the Science Magic e-Lab, the question will always be “What do you think will happen?” at some point during a demonstration of a science experiment or technique.

DO BACKGROUND RESEARCH:

The Lab Director will provide information during the e-Lab so that the students have basic knowledge to construct a hypothesis (make a prediction).

****CONSTRUCT A HYPOTHESIS (PREDICT)****

Each team in the class will work collaboratively to come up with a basic hypothesis or to provide an educated guess before each experiment or demonstration. Teams may be asked to present their predictions as a way to encourage their dynamic interaction with the Lab Director during the event.

*****TEST YOUR HYPOTHESIS: (ACTUAL)*****

The Lab Director will perform the experiment or demonstration so that the students can experience the magic of science. Taped videos may also be used so that the students can see it again and to give them time to think about ‘what happened?’.

*****ANALYZE DATA/DRAW CONCLUSIONS: (WHY?)*****

The teams will work together again to come up with some observations and to draw some conclusions so that they can be ready to interact again with the Lab Director.

COMMUNICATE YOUR RESULTS:

Teams may be randomly called upon to give a P.A.W. report using the information they logged in their Lab Journal. Dynamic discussions may follow as the Lab Director solicits the input from other teams.

Although students in grades 2-5 can make great observations and draw solid conclusions, they might require more time to document (or write down) their observations and conclusions. For this reason, we will focus on three elements of the scientific method that can be documented in the e-Lab using the acronym P.A.W. to help the students remember. The P.A.W. elements are indicated in the list above with a paw print.

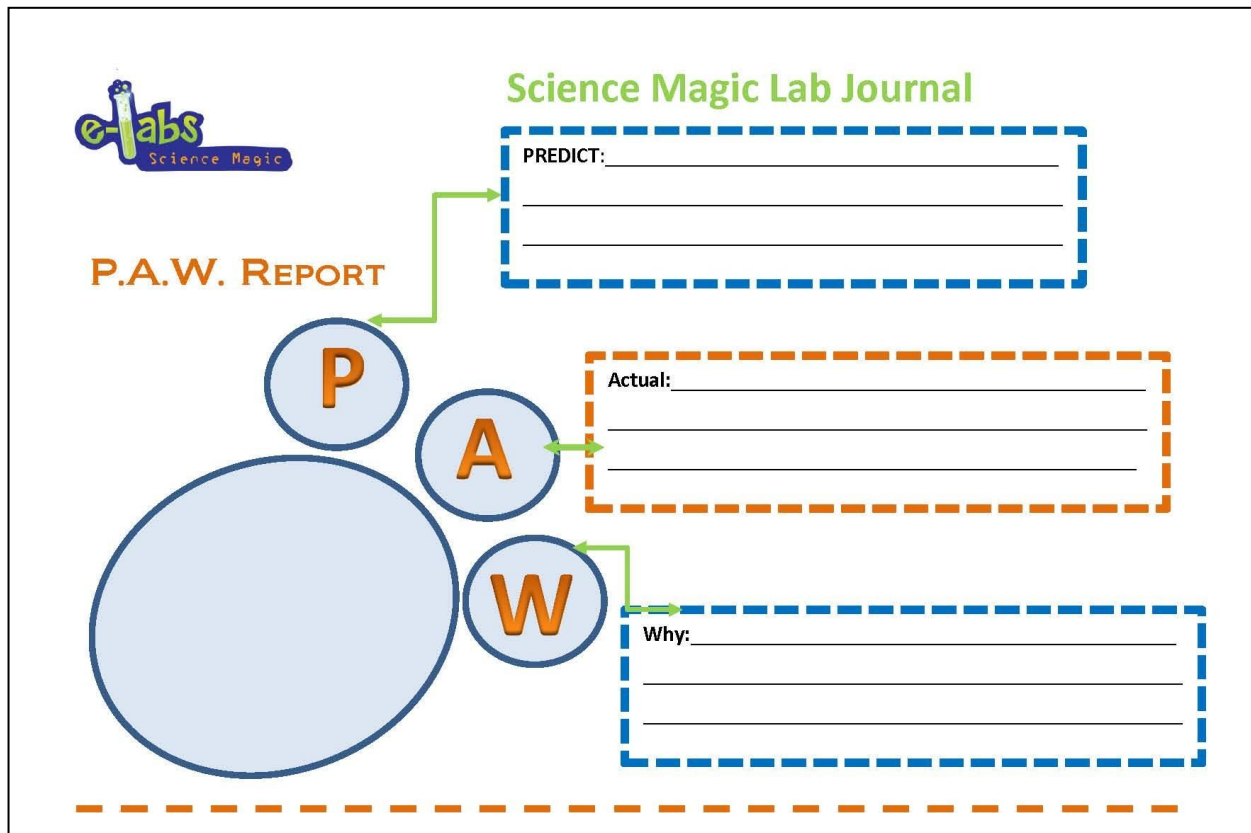
P.A.W.

P = PREDICT

A = ACTUAL

W = WHY

An example P.A.W. Report from the Lab Journal is below:



Once you have introduced the scientific method to your students by talking them through the steps, they are ready for Lesson 2. Lesson 2 will allow students to perform a hands-on experiment using a P.A.W. Report so that they are familiar with this method before the live event with the Challenger Labs.