

SCIENTIFIC METHOD

Using Digital Photography

GRADE LEVEL: 10th

CONTENT AREA: AP Biology

SSS: SC.H.1.4.1, SC.H.1.4.5, SC.G.1.4.1

INTRODUCTION

Science might simply be defined as the pursuit of knowledge; however, all people do not pursue knowledge in the same manner and so a more formal definition of science might be the systematic pursuit of knowledge or even better, the pursuit of knowledge using the Scientific Method. The Scientific Method serves as a sort of standard for scientific inquiry and though not all people use the Scientific Method, we are all scientist in some way or another.

STUDENT LEARNING OBJECTIVES

Students will use digital photography to apply the Scientific Method to observations of the natural world.

MATERIALS

Teaching Aids

PowerPoint Presentation: **Applying the Scientific Method**

20 example images: 3 for each group

5 Digital Cameras

PROCEDURES

Agenda

Lecture: Applying the Scientific Method

Group Activity

Lecture (10 min)

The teacher shows images of scarab beetles mating then discusses how the Scientific Method can be used as a framework for developing and testing a hypothesis.

Groups (40 min):

Exploring (10 min): Students will divide into two groups of 3-4. Each group is given three images and a sheet of blank paper. For each image students are to write **three observations** and **one hypothesis** (one image per student). Students must receive teacher approval before moving on to the next stage.

Planning (5 min): Once students have completed the exploration stage, they will have five minutes in which to plan the observations they will capture as digital images. For example, students might want to capture an image of a student reading a book in the library, Mrs. Kendrick's in her Algebra classroom, squirrels playing on a tree. Images must be of animals doing something. Altogether, students must capture three observations as three separate images, but they will only apply the scientific method to one. Students must receive teacher approval before moving on to the next stage.

Collecting (5 min): Students will have 5 minutes to capture their three planned observations as digital images.

Presentation (20 min): Using the class laptops, students will download their images and develop a group PPT presentation showing how they applied the scientific method using digital photography. The PPT should contain at minimum the following information about one image: Three observations, one hypothesis, an experiment, and possible results and conclusions. The other two photos should appear at the end of the presentation under the heading, "What do you see?" Student will present their observations during class tomorrow.

ASSESSMENT

Students will develop a group presentation using PowerPoint that includes at least three digital images of observations used to apply the scientific method.