**Modeling in AP Biology**

**Title: Scientific Observations of a Grasshopper**

**Theme(s) I - Science as a Process**

**Topics IIIB - Structure and Function of Plants and Animals**

**Authors: Kimbell Reitz (Adapted from NISMEC activity by Dr. Gordon Berry)**

**Leading Questions(s):**

**How do observation and questioning change our perception of the world.**

**Engagement**

Draw a grasshopper from memory.

**Summary of Investigation:**

Drawing grasshoppers from memory and building upon knowledge and questioning as new pictures are given.

**Equipment Used:**

**Pictures of grasshoppers**

**Description of Procedure, notes (teacher manual)**

The students will draw a grasshopper from memory and any questions they may have about it. Then, the class will discuss the pictures and questions. Perhaps some questions will be answered by other students. After this, pictures of real grasshoppers will be passed out. Different students will receive different pictures. They will then redraw the grasshoppers and this time they will attempt labelling the illustration. After this, the class will meet again and discuss how our drawings and how they have changed. Then, they will receive a labelling scientific illustration of a grasshopper observe it. At the end, the students will discuss how their understanding of the grasshopper changed.

**Follow up Questions:**

**1st Whiteboard session**

What did you remember?

What questions did you have?

How many times have you seen a real grasshopper?

**2nd Whiteboard session**

How did your drawings change?

How much were you able to accurately label?

What new questions do you have?

**3rd Whiteboard session**

What did you look for first on the labelled drawing?

How has your thinking about grasshoppers changed?