**Grade 6 Studying People Scientifically (SEPUP) — Activity 1: Solving Problems: Save Fred!**

By Christina Brecht, Lesley Drinkwine, and Bethany Niedbalski

**Big Idea:** Students learn the various approaches to scientific problem solving.

**Hook:** What is a problem you have solved in this past week? What steps did you take to solve that

problem?

**Timing:** 40-50 minutes

**Materials Included:**

 -Materials for each pair of students

 -plastic cup

 -four paper clips

 -student sheet 1.1 Anticipation Guide: Ideas about Experimental Design

-Group Interaction Student Sheet 2 Developing Communication Skills

-Literacy Student Sheet 1a Keeping a Science Notebook

 -Transparencies 1.1 Problem-Solving Model 1

 -Transparencies 1.2 Problem-Solving Model 2

 -Transparencies 1.3 Problem-Solving Model 3

 -Transparencies 1.4 Problem-Solving Model 4

 -Transparencies 1.5 Traditional Scientific Method

 -Literacy Transparency 1 Analysis Questions

 -Overhead projector

**Materials Not Included:**

-gummy candy shaped like a life preserver (gummy life savers)

-gummy candy worms

**Necessary Prior Knowledge:**

 -Scientific Method

 -How to use the science notebook to document the plan and findings.

**Lesson:**

-In their group, students will share the problem they solved and the steps they took to solve the

problem.

 -Entire class will come together and each group will share their favorite problem with the

solution steps.

 -Fill in the anticipation guide: Ideas About Experimental Design and save till the end of the

lesson.

-Follow procedure in kit guide.

 -Read to the students as they follow along in their books. Save Fred! Poor Fred! He was

sailing along on a boat (your plastic cup) when a strong wind blew it upside-down. Fred (your candy worm) ended up on top of the upside-down boat. Unfortunately for Fred, his life preserver (your candy life preserver) is still strapped under the boat. Your job is to place the life preserver firmly around Fred’s body, but you must obey three rules: 1. Fred may not fall into the “sea” (onto the table) more than one time; if he does, Fred “drowns”. 2. You may not injure him in any way. 3. You may use only the four paper clips to move Fred, the boat, and the life preserver. You may not touch anything except the paper clips.

-As students work with their partners they need to be recording in their science

notebooks exactly what they did (step-by-step) to save Fred. Must be as specific as possible.

 -Have students draw a picture or diagram to explain their procedure.

 -If students are having trouble, have them walk around the room and see what others

are trying, and take those ideas back to their Fred.

 -Take out the Anticipation Guide and do the after portion for #’s 1 and 2.

**Suggested Adaptations/Improvements to the Procedure:**

 -Allowing the students to look at other pairs and get ideas they can take back to help Fred.

**Reflection:**

 -People face problems in their lives every day. Have student’s notebook what they learned from

this activity to help them with other problems.

**Suggestions for Lesson Extensions/Addenda:**

 -Using the problem discussed in the hook, students will discuss what steps were used in the

traditional scientific method and expand how they know.

 -Have students come up with another problem and use the tr aditional scientific method.