

**Welcome to Camp Skyhook at Clear Creek!** We look forward to providing you and your students with memorable experiences that are both fun and educational.

Naturalists at Clear Creek Outdoor Education Center will facilitate several outdoor lessons that involve students in the 3 dimensional learning processes of the California Next Generation Science Standards. Each learning experience will engage students with NGSS core ideas, practices and cross-cutting concepts. The lessons are based on 4th and 5th grade Life and Earth and Space Science Performance Expectations. Our new science framework calls for students to learn science while engaged in doing science. Students will be involved in collecting and analyzing data, developing models of scientific concepts and engaging in argument from evidence. Prior to your class arriving at Clear Creek Outdoor Education Center, we recommend the following activities to prepare students to maximize their week long experience.

### **Science Notebooks**

Students will be recording observations, collecting data and developing models in science notebooks. If you are already using science notebooks, you are welcome to bring them with you. If this is a new practice for your students it would be helpful to model how scientists use a notebook. The process involves asking a question, collecting data to answer the question, and then answering the question citing evidence from your data. As you begin your next science lesson engage students in an experience that generates a question that they need to investigate. Have them record this “focus question” in their notebooks. They can also record a predicted answer based on their initial thinking. As they explore materials through various observations and/or experiments they should record their observations and experimental results. When the lesson reaches the point where an answer to the focus question is emerging, hold a discussion (See Science Talks). When students have enough information and reasoning to answer the focus question, have them record the answer in their notebooks. Your FOSS curriculum lessons follow this format. Examples and information can be found on **FOSSweb**,

<http://www.fossweb.com/>

Information about science notebooks can be found under the *Teaching Tools* tab.

### **Science Talks**

Students will be encouraged to make their thinking public. Throughout the learning experiences, they will be asked to share their observations, questions and reasoning in pairs and small groups. You may already be engaging in regular structured

discussions. If you feel your students could use more support please see the attached resources:

*Science Talk Primer* and sentence frames. You can also observe students participating in science talks in the Library of Resources available at the Inquiry Project.

<https://inquiryproject.terc.edu/>

## **Drawing**

Throughout the week, students will have opportunities to document their observations. Some preliminary preparation in drawing skills would be helpful. Drawings of natural objects should depict what is observed accurately. (No adding happy faces on the flowers!). They should be large enough to accommodate labels and details.

A helpful exercise would be a lesson on drawing from observation using contour drawing. Have students bring a preselected natural object from home or provide a selection from the classroom (leaves, shells, rocks, insects, twigs, etc).

Step 1: Keeping their eyes on the object only, draw it in one continuous line without lifting the pencil from the paper.

Step 2: Draw the same object again in one continuous line, occasionally looking at the paper.

Step 3: Choose one of the two drawings to add details and add notes and measurements.1

An excellent free curriculum, Opening the World through Journaling: **Integrating Art, Science, and Language Arts** is available from California Native Plant Society.

<http://www.cnps.org/cnps/education/curriculum/>

## **Post Camp- Core Concepts**

The students will be developing concepts included in your FOSS curriculum. It is not necessary to teach the following units prior to the trip. However, we highly recommend follow up with these FOSS modules that cover concepts addressed at Clear Creek Outdoor Education Center.

**Solid Earth:** Investigation 5

**Living Systems:** Investigation 3, Part 1

**Environments:** Investigations 1, 2 and 3

**Water Planet:** Investigations 1, 3 and 5

The benefit to students will increase if these processes could be built upon when they return to school. We look forward to your visit!

If you have further questions, please contact us at (213) 435-1059.