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Lesson Plan: Scientific Sketches: What Do You See? A Direct Instruction Lesson

Goal: Fourth grade students will be able to draw accurate scientific sketches and learn about scientists who recorded their observations using sketches.

Objectives:

1. Fourth grade students given an object will draw accurate scientific sketches following the four rules with 70 percent accuracy for their grade level.
2. Fourth grade students will practice the science process skill of observation by making scientific sketches with 70 percent accuracy for the grade level.
3. Fourth grade

Indiana Academic Standards:

- 4.1.3 Explain that clear communication is an essential part of doing science since it enables scientists to inform others about their work, to expose their ideas to evaluation by other scientists, and to allow scientists to stay informed about scientific discoveries around the world. (Core Standard)
- 4.1.4 Describe how people all over the world have taken part in scientific investigation for many centuries.
- 4.1.5 Demonstrate how measuring instruments, such as microscopes, telescopes, and cameras, can be used to gather accurate information for making scientific comparisons of objects and events. Note that measuring instruments, such as rulers, can also be used for designing and constructing things that will work properly. (Core Standard)

Assessment: Rubric for scoring student work

Materials

Light microscopes
Dissecting scopes
Magnifying glasses
Colored pencils
Unlined paper

Station#1

Bird feathers
Slides of bird feathers

Eggs

Egg shells

Pictures/books with pictures by James John Audubon – possible tie in with American history

Station #2

Skin cells slide

Books/pictures about Leonardo Da Vinci

Hand

Station #3

Mushrooms

Slides of mushroom spores

Books and pictures by Beatrix Potter

Anticipatory Set

Old cameras, digital cameras, paper and pencil (I have a collection of old cameras.)

Teaching/Input

Power point of Leeuwenhoek, sketching rules, light microscope

Dead Lice??

Pictures of Dennis Kunkel from the Internet

http://www.denniskunkel.com/product_info.php?products_id=226

Anticipatory Set:

- Show several old cameras, digital cameras and paper/pencil and ask the students to create a timeline which came first.
- Ask the question what are some tools that scientists use to help them record their observations?
- What tools did they use before there were cameras?

Explain today they are going to learn how to use paper and pencil to record their observations

Teaching:

Input

- Create a power point covering the following points
- Show some pictures by Van Leeuwenhoek and Dennis Kunkel and discuss his contributions to science and how he used sketching to communicate his observations.
- Discuss the four rules of sketching.
- Show a light microscope.

Modeling

- Together step through the four rules using the overhead to show the sketching
- Use a light microscope to show how to use it

Check for understanding

- Have the students make their own sketch of their cricket and walk around checking students' sketches for understanding
- Have the students use the microscope to find and focus on a microscope slide of a cricket wing

Guided practice/monitoring

- Divided the students into six groups

- Each group will visit three sketching stations to practice their sketching, use a light or dissecting microscope and to also learn about a scientist who used sketching to communicate their observations

Closure

- Pull the class together and have review the four rules of scientific sketching by having different students show an example of each of the rules
- Have different students explain about one of the scientist and how they used sketching for communication

Independent practice

- Homework due the following Monday – Find an object to make a scientific sketch of following the four rules and bring it to class

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