

## Third Grade Inquiry Example

### Student Objectives:

- ✓ Students will do scientific inquiry.
- ✓ Students will use appropriate tools to carry out the investigation.
- ✓ Students will measure and collect data.
- ✓ Students will work cooperatively to solve a problem.
- ✓ Students will develop an understanding of the current science topic

### Equipment and Materials:

- ✓ Variety of household and school objects
- ✓ Overhead projector, lamps, or flashlights
- ✓ White screen, wall or sheet

**Elicit Prior Knowledge:** Ask, "When do you see shadows?"

**Exploration:** This information-seeking portion involves several different events, which will give the students a base line for asking questions. If the students have never been introduced to a new subject matter, it is hard for them to develop quality questions, or continue investigating.

Students will explore and observe shadows made by different lighting and a variety of objects. Exploration will be inside the building and outside.

**Testable Question:** The teacher will lead students toward the question, "Can you tell the correct object from its shadow?" (include 3D objects from math)

**Plan:** Once the question is determined, the students need to make a plan. With-in the plan they should identify three things: (a) What they are keeping the same (b) What they are changing, and (c) What they are measuring. (This will be teacher directed by explaining the following questions: (a) What they are keeping the same - The direction of light (b) What they are changing - the object (c) What they are measuring - How many objects they recognized.

**Investigate:** In small groups, students will carry out their plan.

**Collect Data:** Before students can begin investigating, the class should have a T-chart ready to collect the data. The data should be a list of objects to be tested already written up on T-chart with a yes or no column (can they identify it or not).

**Conclusion:** Teacher will ask, "Was it easy to predict the original objects?" Have the students state their findings based upon their data. Have them state their conclusion. Write out the data in a summary.

**Application:** The teacher and students can make connections to daily life such as shadows outside, moon phases, and trees provide shade. What are the different applications of this scientific principle?

**Instruction:** The teacher will give more information and correct any misunderstandings the students have about the sun, moon and stars.

**Share:** Have the students choose a communication form or have one selected for this investigation. If different groups testing different changes, have groups share their findings. You may also

want to let them go back and make a different change and share the second findings for the exchange of results. See Sharing Investigation Page)

There's also a Shadows Activity page that could be used as a follow up and as another testable question.