

# Igniting Inquiry

Activity Length: 45-60 minutes

Intended Learning Outcomes:

4<sup>th</sup> grade standards:

1. Use science process and thinking skills
  - a. Observe simple objects and patterns and report their observations
  - c. Make simple predictions and inferences based upon observations

Skills: Observation, Questioning, Inference, Recording

Lesson Objective:

To improve student observation skills.

To encourage students to ask questions about what they are observing.

Vocabulary:

Inquire – to ask a question

Observe – to use all senses (when appropriate) to closely inspect of all features of an object

Inference – guesses based on evidence (observations and prior knowledge)

Record – to write/draw/model observations

Materials Required:

- 5 different objects with obvious and not so obvious features. If possible, use objects that are not commonly found in the classroom eg. items from an NHMU Teaching Toolbox or from around the school.
- 5 sheets of butcher paper
- Pencil and science notebook or loose leaf paper

Background Information:

Inquiry means asking a question. Any question can lead to discovery, more questions, and a new understanding. Inquiry is an essential part of the scientific process and is often a result of close observations. By identifying and encouraging student participation in this part of the scientific process, they can learn to observe more closely, identify new details, and come to realize they are scientists capable of making their own discoveries.

During Museum on the Move, students will be asked to observe, ask questions, infer, and record information about a variety of new objects. It is beneficial if they have been explicitly taught these skills prior to the visit so that all students are able to successfully participate in the inquiry activities.



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## Introduction:

**Ask:** What senses can you use to make an observation? What is an example for each sense?

**Record:** students' responses on the board. For example – taste can be used to tell the difference between sugar and salt.

**Ask:** What is the best way to remember what you have observed?

**Record:** students' responses on the board. For example – sentences, T-Chart, Venn diagram, list, drawing, etc. Point out that you are currently recording your observations of their work.

**Ask:** What details do you need to include when recording observations?

**Record:** student responses on the board.

### **Suggestions:**

*Size* measurement or relative to something else (larger than an apple, 2 inches long)

*Shape* overall and in parts (egg shaped but is made of small grains of sand)

*Texture* relate to everyday objects (rough like sandpaper)

*Weight* measurement or relative to something else (as heavy as a stapler)

*Color, shine, luster, smell, taste, movement, sound, etc.*

**Ask:** What makes a good question?

**Record:** students' responses on the board. For example – What is ...? Why does ...? How can ...?

## Activity:

1. Arrange the class into five groups, each group sitting around one desk.
2. Give each group one object and one sheet of butcher paper.
3. Students individually record their observations of the object in their science notebook/paper. Prompt them to use all of their senses while observing the object.
4. As a group, students record on the butcher paper as many questions as possible that they have about the object.
5. Rotate objects and butcher paper. Repeat steps 3 & 4 with the new object. Students should not repeat a question on the butcher paper about the object if it is already written down by a previous group.
6. Allot 4-6 minutes for each object to allow students time to record observations and questions.

## Conclusion

Ask the students to share their observations for each object. As a class, review the questions on the butcher paper and brainstorm answers with evidence from observation or prior knowledge. Explain to students that they are making inferences – another essential part of the scientific method!

