



# SCIENTIST IN RESIDENCE PROGRAM™

**Science Unit:** *Exploring Biodiversity*

**Lesson #1:** **Observing and Questioning**

Grade level: Grade K-2

Duration of lesson: 30-45 minutes

School Year: 2015/2016

Developed for: Collingwood Neighborhood School, Vancouver School District

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## Learning Objectives

1. Discover the different many different things scientist do and study.
2. Practice sorting objects based on different traits.
3. Practice asking questions to help describe an object.

## Materials

- Pictures of different science career topics (Volcano, Clouds, Machines, Chemicals, Animals, Plants, Lab Coat, Outer Space etc.)
- Different Colour and Shapes Cut out of Construction Paper, or blocks. (3 colours, 3 shapes, 3 sizes)
- Box or Bag
- Stuffed Animal
- Any Piece of Fruit or Vegetable
- A Basketball

## Background Information

Scientists occupy many different roles in many different fields – from meteorologists to chemists, physicists to botanists, engineers to geneticists. Being a scientist means more than wearing a lab coat. Many scientists use experiments to conduct their research. Every experiment is designed to test a hypothesis based on predetermined research question. Being able to ask thoughtful questions and makes observations is a key part of the scientific method. This introductory lesson is a way to get young students to start thinking like scientists.

## Vocabulary

Word	Brief definition
Observation	Something you see, hear, smell or feel that can help you describe an object, a behavior, a reaction etc.
Scientist	A person who works in one of many fields of science - including physics, chemistry, biology etc.
Trait	A quality or characteristic that can be used to describe and object. Ex. Size, Shape, Colour, Smell



## **Lesson In Detail**

### **Introduction**

1. Ask students to brainstorm:
  - The many things scientists *study*
  - The many different things scientists *do*
2. Explain that two important things scientists do are: making observations and asking questions.

### **Activity 1: Finding Patterns**

#### **Purpose of Activity:**

To identify different traits you can use to describe an object.

#### **Instructions:**

1. Hand out 9 shapes to each group (3 different shapes, in 3 different colours in 3 different sizes).
2. Ask the students to sort the objects into three groups. Ask why they made the groups they did.
3. Compare the different patterns groups found. If all of the groups found the same pattern, repeat the activity asking them to sort them into 3 new groups.
4. The groups they made were based on different traits and observations.

### **Activity 2: What's in the Box?**

#### **Purpose of Activity:**

Learn to ask questions about different traits that they could observe.

#### **Instructions:**

1. Start with a piece of fruit.
2. Ask the students to describe it: How does it smell? What does it taste like? What colour is it? How big is it? What shape is it? Does it make noise? Etc.
3. The next object (a basketball) is hidden from view in a box. Students can raise their hands to ask questions to help figure out what is inside. If they need prompting, provide hints at a question relating back to the first example you did as a group.
4. Have the students try to guess what is in the box.
5. Repeat with another object - a stuffed animal.

### **Reference**

<http://www.sciencebuddies.org/science-engineering-careers#lifesciences> Science Buddied – Careers in Science. Accessed January 14, 2016