

**GROWING UNDER GLASS**  
at the  
**ALLAN GARDENS CHILDREN'S CONSERVATORY**

**Curriculum Expectations**

- Earth and Space Systems
  - Soils in the Environment
- Life Systems
  - Growth and Changes in Plants

**Overall Expectations**

Students will:

- Demonstrate an understanding of the similarities and differences between various soils and the effects of moving water on soils;
- Investigate the components of various soils and describe the effect of moving water on these soils.
- Demonstrate an understanding of the similarities and differences in the physical characteristics of different plant species and the changes that take place in different plants as they grow;
- Investigate the requirements of plants and the effects of changes in the environmental conditions on plants

**Specific Expectations**

Students will:

- Describe, using their observations, the various components within a sample of soil (e.g., pebbles, decaying plants);
- Describe, using their observations, the differences between sand, clay humus, and other soil components (e.g., texture, smell, malleability), and compare and describe soil samples from different locations (e.g., school yard, forest, marsh, beach);
- Identify living things found in the soil.
- Describe, using their observations, how the growth of plants is affected by changes in environmental conditions (e.g., changes in light, soil);
- Explain how different features of plants help them survive (e.g., leaf structure, fibrous or tap root system)



## **GROWING UNDER GLASS PRE-ALLAN GARDENS VISIT LESSON PLAN**

### **Objectives:**

Students will learn the difference between *organic* and *inorganic* materials in soil.

### **Materials:**

- organic and inorganic pictures (link)
- “What is this?” Worksheet
- clipboards (if available)

### **Soil Lesson:**

1. Put up the images on the board. Organic on one side and Inorganic on the other side. Separate the images with a line. Do NOT label the columns with organic and inorganic.
2. Have the students examine the board. Tell them it is their task to try to figure out what all the pictures have in common. Remind them that there are no right or wrong answers at this point. They are brainstorming.
3. Have the students work in small groups or as a class to brainstorm. Ask some questions to help them determine some of the differences (ie organic – there are lots of animals and living things, inorganic – everything is part of the earth)
4. Reveal the differences and the words (organic and inorganic) we use to describe them. Emphasize that organic is anything that is alive or has ever been alive and inorganic is material that have never, never been alive.

### **Soil Activity:**

1. Tell students that there are organic and inorganic items all around us – even in our own backyard!
2. Put the students in small groups and give each group a “What is This?” worksheet and a clipboard. Have them bring a pencil or pencil crayons with them.
3. Take the students outside (this can also be done in doors in case of bad weather) and tell them that they have to go out and find items in the playground. With their group they should discuss if the item is organic and draw the item in the circle. If they find something that does not fit neatly into the “Organic” or “Inorganic” category they can put it into “Other”.
4. Have the students try their best to find at least one in each category.



**Closure:**

1. As a group, discuss which items they found in the “organic” and “inorganic” categories. Ask the students how they determined which category the item would fit into.
2. Next, discuss the “Other” category. What items stumped them? Did they find some items that had both organic and inorganic components to them. Were there some items that they just could not figure out?
3. Remind the students to bring their questions when they come to Allan Gardens!

# ORGANIC vs INORGANIC

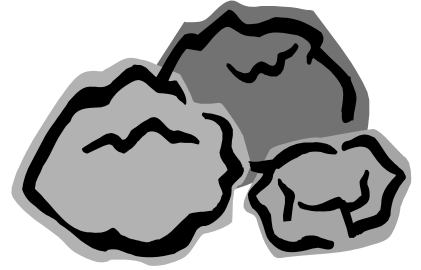
## INORGANIC ITEMS



**DIAMOND**



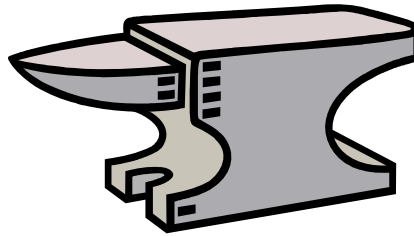
**CLAY**



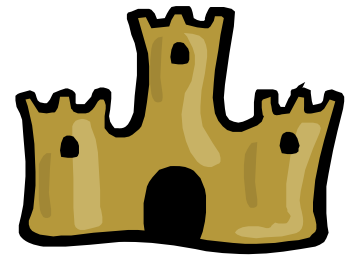
**ROCKS**



**WATER**



**METAL**

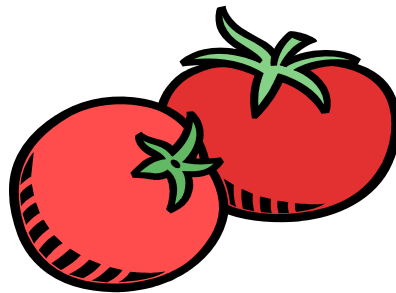


**SAND**

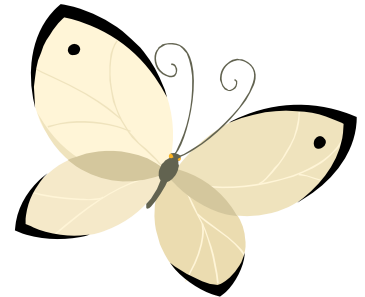
## ORGANIC ITEMS



**WOOL MITTEN**



**TOMATO**



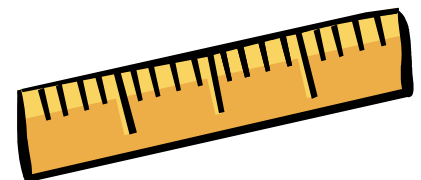
**BUTTERFLY**



**TREE**



**FLOWER**



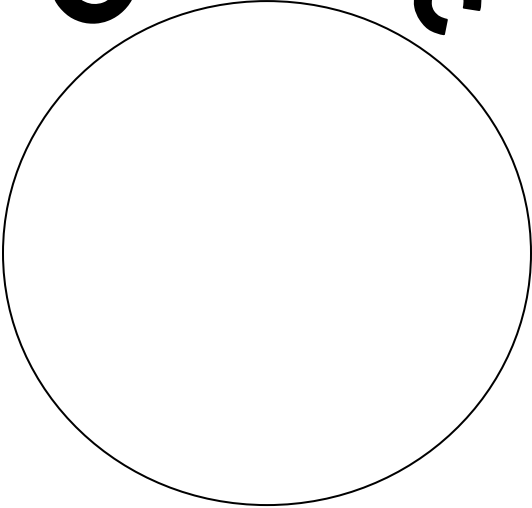
**WOOD RULER**

## WHAT IS THIS?

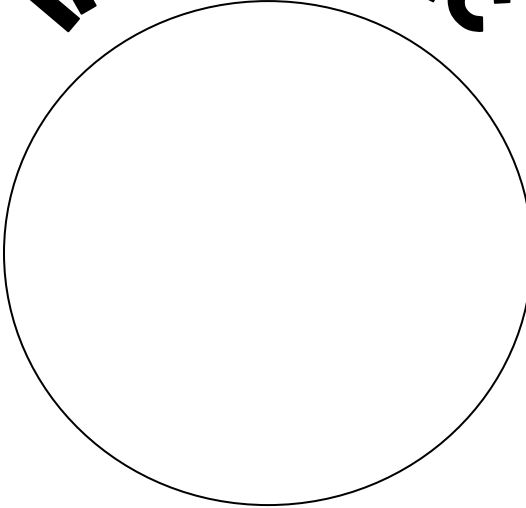
Look around your school yard. There are many inorganic and organic materials all around. Find as many as you can and draw them in the circles below. If you find something that does not seem to fit into either category, draw it in the "Other" box.

Good Luck!

**Organic**



**Inorganic**



**Other**

