

## *We are where and what we eat*

### **Provided by:**

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### **Sources:**

Besides our fertile imaginations, sources include past programming successes, research into genetic diversity of plants, and an activity from the *Roots and Shoots Intergeneration Garden* by Dick and Molly Brown.

**Curriculum connection:** Science, Junior Level

### **Basic Description:**

Students explore concepts of the plants we eat, where and how they grow and introduction to genetic diversity. Students examine the characteristics of seeds, their different sizes, shapes and germination time. Students set up seeds to sprout.

### **Materials:**

- selection of different fruits and vegetables grown locally and afar
- selection of several different variety of apples
- apple corer
- seeds
- waterproof trays
- paper towels
- pictures of: sun, soil and water

### **Time Allotment:**

Introductions - 10 minutes

Seed diversity activities and demonstrations - 15 minutes

Planting - 15 minutes

Wrap up - 10 minutes

### **Procedure:**

#### **What we eat:**

- Make two lists of as many foods you can that:
- that we *can* grow here where we live
- that *only* grow in other places and are brought here
- Discuss our dependency for a healthy life on these crops (regardless of whether they 'enjoy' eating broccoli or not!)

#### *Demonstration:*

- Which foods can grow here and what ones can't from a selection from a bag- ie rice, mangos, potatoes, etc.

- Visual aid- picture of sun, soil and water: Each type of plant needs these in different proportions.
- Many plants will only grow in tropical climates or climate controlled greenhouses.

### Apples:

#### Demonstration

- Use four or five different varieties of apples to demonstrate how their differences make each of them have different looks and taste

#### Activity:

- Write or talk to a partner to describe the difference in looks and taste of two different apple pieces.

### Seeds:

#### Demonstration:

- Extract and pass out apple seeds to each student: “Each of you holds a tree in your hand.”
- Parts of seeds- outer skin for protection, the embryo of the stem, root and leaf and the seed protein that feeds the emerging sprout.

#### Activity- Seed Olympics (from Roots and Shoots program)

- In groups of three, take three different types of beans and sprout them in wet paper towels.
- Try to sprout some apple seeds too.
- Each student can adopt one seed and chart it's germination time.

### Discussion:

- genetic diversity, agriculture practices depending on age group
- “Of the approximately 14,000 different apple varieties grown in North America a century ago, only a few hundred remain. 16 varieties make up more than 90 per cent of domestic production; four varieties account for almost 70 per cent of the continental market. The rest have forever faded into history, at a huge genetic cost. Scientists say it is a worrying trend away from the historic genetic diversity that made the apple one of the hardiest fruits on Earth. In nature, every apple seed, every tree, is a bit different from the rest. It is that variation that makes the apple resistant to environmental stresses. Now they mass graft trees to select for enhanced colour, prolonged shelf life, resistance to disease and physical resilience against bruising when being transported great distances.” Robert Alison, Toronto Star, August 7, 2004
- Apples are part of the history in Canada because some settlers arrived hoping to fruit ranch. There are still many hardy heritage varieties still to be found from these early plantings. Botanical gardens often have heritage orchards to preserve these disappearing types of apples just as zoos have endangered and extirpated animals.



**BGCI**

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