

## LESSON 2

### EDIBLE FROM ROOT TO FLOWER TO FRUIT PARTS OF A PLANT

California Science Standard 2nd Grade – Investigation and Experimentation

4.c. Compare and sort common objects according to two or more physical attributes (e.g. color, shape, texture, size, weight).

California Science Standard 5th Grade – Investigation and Experimentation

6.a. Classify objects (e.g. rocks, plants, leaves) in accordance with appropriate criteria.

California Science Standard 3rd Grade - Life Sciences

3.a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

National Science Standards Life Science Content Standard C K-4

Each plant or animal has different structures that serve different functions in growth survival, and reproduction.

#### Lesson Plan: Parts of a Plant

##### Objective

Students will be able to identify the five main components of most plants.

**Key Vocabulary:** characteristic, classify, categorize, rationale, justify, traits, observe, taxonomy, leaf, stem, root, flower, fruit, bulb (modified stems), tuber (**modified root**) vegetable, seed

**Materials:** Standard 8 ½ x 11 blank white paper (for each student)  
Images of fruits, vegetables, leaves, stems and flowers  
Possible vegetable items for a display

Roots -- carrot, radish, beet, potato, parsnip, ginger

Stems – celery, asparagus, rhubarb, lemon grass

Leaves – lettuce, cabbage, spinach, parsley

Flowers -- broccoli, cauliflower, artichoke

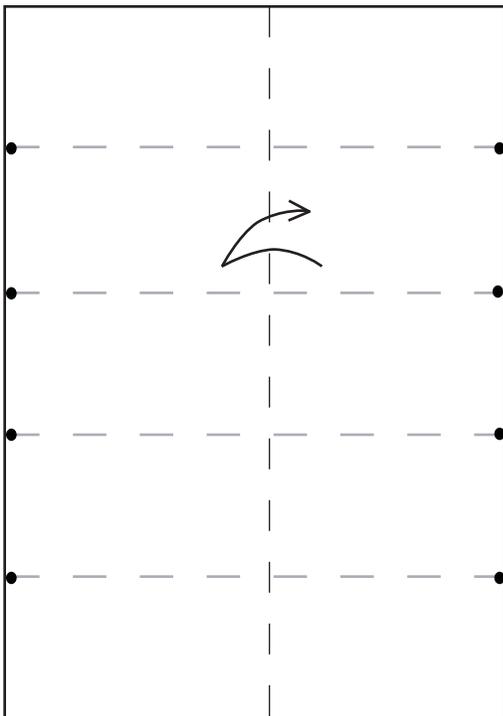
Fruits – apple, orange, strawberry

##### Anticipatory Set

Have a set of various vegetables on display. Real ones would be more engaging than pictures. Tell the students that they will be learning the four main components of most plants and will begin to recognize a number of foods we eat that come from one of these four main sections of plants. Ask the class to identify the vegetables on display. Once they've correctly identified the various plants, separate the plants into four groups based on which part of a plant they came from. Don't tell the students why you divided them this way but instead, ask the students if they can determine what your rationale was for classifying them.

## Lesson

- Students will be guided in creating a flip book to serve as a handy reference sheet focusing on the main parts of plants.
- Display an example of what their project will ultimately look like.
- Distribute an 8 ½ x 11 inch blank sheet to each student.
- Have them fold it in half lengthwise. You might want to have them fold the flap from the left to the right so that it will open like a book.
- Ask the students to mark off 5.6 cm (2.2 in) intervals down each side of the paper and then fold the paper horizontally connecting the marks on either side.
- The students may now begin drawing a very simple illustration on the back of the paper of a plant that has the five main components of roots, stems, leaves, flowers, and fruits. A tomato plant or an apple tree might be good choices. Having real examples available would help students in depicting them.
- On the inside of the flip book there will be two sections in which the students can enter information. In one section have the students write a definition for that part of the plant. In the adjacent section, have the students write examples of foods we eat from that part of the plant.



## Example

<p style="text-align: center;"><b>Fruits</b></p> <p>The mature ovary (female organ) that protects the developing seeds.</p>	<p style="text-align: center;"><b>Foods</b></p> <p>apple, orange, strawberry</p>
<p style="text-align: center;"><b>Flowers</b></p> <p>The reproductive parts of a flowering plant.</p>	<p>broccoli, cauliflower, artichoke</p>
<p style="text-align: center;"><b>Leaves</b></p> <p>The main plant part where photosynthesis takes place.</p>	<p>lettuce, cabbage, spinach, parsley</p>
<p style="text-align: center;"><b>Stems</b></p> <p>The part of a plant that provides structure, support and a way to carry water to the leaves and flowers.</p>	<p>asparagus, celery, rhubarb, cinnamon</p>
<p style="text-align: center;"><b>Roots</b></p> <p>The underground portion of the plant that anchors the plant in the ground and absorbs water and nutrients.</p>	<p>carrot, radish, beet, ginger, onion</p>

## Assessment

- There are numerous ways to assess if students have grasped the concept that various plant parts can be a food source.
- Use a weekly advertisement from the local supermarket to have students cut out, organize and glue images of food based on which plant part(s) they came from.
- Ask students to bring food items from home and have a table display where they can physically divide up the items depending on which of the five categories they belong to. (root, stem, leaf or flower)
- Have students imagine their own fantastical plant. They can “bio-engineer” a plant with various parts having various flavors. Perhaps an orange tree with cinnamon bark or a mint plant which also grows cocoa pods. They can draw a diagram and write a short paragraph describing its various attributes.







