

Title: Comparing and Contrasting Plant Structures

Sunshine State Standard Benchmark SC.F.1.3.4: The student knows that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.

Grade Level Expectations: Sixth Grade – 1. The student knows that the levels of structural organization in living things include cells, tissues, organs, systems, and organisms.

Write the objective:

Given live examples of five types of plants, the student will compare and contrast physical characteristics of five of six plant structures (roots, stems, leaves, flowers, fruits, and seeds).

Introduce the lesson:

Gain student attention – The class takes a brief walking tour of the school grounds and observes the types of plants. They make notes and sketches of what they see. Upon returning to class, students compile a list of what they saw. The teacher points out the physical characteristics of the plants that are the same and those that are different.

Explain the objective – The teacher tells the students that they should be able to look at five different plants and compare and contrast the physical characteristics of each of the plant structures (roots, stems, leaves, flowers, fruits, and seeds).

Relate to prior knowledge – The teacher reminds students what they have already learned about plant structures and how the environment impacts plant growth. The teacher also reminds students what it means to compare and contrast and how to use good observation skills.

Present the content:

Knowledge and skills in lesson – Students have basic information on plants and what it takes for them to grow. They have information on basic plant structures. The lesson content will focus on information on physical characteristics of plant structures.

Teacher and student learning activities

The teacher presents a mini-lecture on the physical characteristics of plant structures. The lecture is accompanied by video or internet examples that define and illustrate characteristics of plant structures (roots, stems, leaves, flowers, fruits, and seeds).

The teacher also links the information to previous lessons in the mini-lecture. The examples include pictures of each type of plant structure. Students will take notes during the lecture using a note-taking guide.

Next, the teacher models how to make observations of a sample plant and records her observations on a transparency of a worksheet to compare and contrast of plant structures. The teacher demonstrates the process to compare and contrast the physical characteristics she has observed.

Activity organization and support

Media selection: Prepare a note-taking guide to provide scaffolding for students in the mini-lecture. Prepare a compare and contrast worksheet to guide and record the observations of the plant samples in the second part of the lesson. Make three copies per student. Make a transparency of this worksheet. Obtain sufficient plant samples.

Student grouping: The mini-lecture is a whole class activity using an internet link or video. The second part of the lesson is a small group activity.

Practice and feedback:

Guided practice – The teacher divides the class into groups of four, giving each group two actual plant samples and copies of the worksheet to use as a graphic organizer to compare and contrast plant structures. The students work in groups to complete the worksheet. Students are encouraged to follow the note-taking guide and projected transparency to structure their responses. The teacher observes groups and provides feedback while students are completing the worksheet. The teacher prepares to add more plant samples to the activity if students need additional time and practice. She debriefs the activity with the whole class.

Independent practice – Independent practice will be a homework assignment. Using a second copy of the practice worksheet, the students identify five plants growing at their home or neighborhood, record characteristics of plant structures, and compare and contrast the plants. The teacher reviews the worksheets completed for homework and provides feedback to students. She arranges for an individual or small group discussion with students who may need additional practice.

Judicious review – The teacher reviews physical characteristics of plant structures in at least one additional lesson within the unit on plants. She surveys units for the remainder of the course and notes places to incorporate a review of these skills.

Summarize the lesson:

The teacher writes the lesson objective on the board and reads it to the class as a summary of what students are supposed to learn. She asks students to recall parts of the mini-lecture and group work that helped them learn this knowledge.

Assess student learning:

Determine the procedures – The teacher will use a performance assessment to measure student learning by setting up five stations with a real plant (different from those used in guided practice) at each station. The students are divided into five groups to move through the stations. The teacher tells students they are to independently observe the plants at each station and use the compare and contrast worksheet to write observations of the physical characteristics of each plant structure. Then they should return to their desks to complete the comparison and contrast of the physical characteristics of the structures of plants. She tells students they can revisit stations as needed. The teacher reminds students that they will need to correctly compare and contrast at least five of the plant structures in order to master the objective. Students complete this activity independently. The teacher cautions students not to copy notes from one another as they move through the stations.

Decide how to judge performance – This is a performance assessment that includes conducting observations and writing a description. The teacher designs an evaluation checklist that lists the points expected in the comparison and contrast for the comparison of all the plants. The teacher reviews each student paper and completes the evaluation checklist. She makes additional comments, if needed. The papers and the completed checklist are returned to students as feedback on the assessment. The teacher gives individual feedback to students who did not meet the mastery criterion and discusses plans for helping them meet it.

Accommodations

Present the content, Guided practice, and Independent practice

For students in the class who typically need assistance in organizing their responses to complex tasks, the use of the compare and contrast worksheet form used for all students in the practice and assessment activity will be adequate for these students.

Assess student learning

For a student who is easily distracted while completing written assignments, the teacher will allow the student to complete the written contrast and comparison required in the assessment using a study carrel turned away from the students who may be moving around the plant samples.