



Quarrybrook

EXPERIENTIAL EDUCATION CENTER

Program Title: **Plant Survivors**

Audience: 4th grade students

Program Theme: How do plants get the resources they need, defend themselves, attract pollinators, and disperse their seeds? All without moving! Plants have internal and external structures adapted to their specific life requirements and location.

Program Goals: Students will observe plants in detail, surveying for adaptations and deciding how each serves the plant. Students will then simulate survival methods used by plants. Next we'll design our own adaptations, for a plant to get the resources it needs, defend itself, attract a pollinator, or spread its seeds.

Next Generation/Common Core Connections:

Topic: 4-LS1 From Molecules to Organisms: Structures and Processes

Dimensions: Systems and System Models

Program Outline:

Activity 1: FIELD SURVEY (50 min.) – After discussing the major lifecycle requirements of a plant, we'll head to a woodland survey area. Working in sub-teams, students will investigate the plants in the area, looking for evidence of how their structures support their survival.



Teachers and other adults will be helpful in encouraging sub-teams to thoroughly investigate the plants in their zone.

Objectives: Students will observe plants in detail, and notice their varying external structures. Students will decide how each adaptation serves the plant: does it help them obtain resources, defend themselves, attract a pollinator, or disperse their seeds.

Intended Outcome: Students will notice the structural adaptations that plants have, which vary by species needs and location. Students will be able to distinguish which survival function each adaptation serves.

Activity 2: PLANT ADAPTATION CHARADES (40 min.) – What strategies are employed by plants to meet their needs? Working in sub-teams, students will use fact cards to plan and present short charades to the rest of the group, showing the actions of how their plants acquire their resources, while not getting eaten, while attracting pollinators, and later dispersing their seeds. The rest of the group will guess which adaptations are being simulated, and how they serve the plant.



Teachers and other adults will be helpful in working with the sub-teams, prompting students to fully dramatize the info on their fact cards. Humor is welcome!

Objectives: Students will simulate plant survival methods. Students will know how plants actively defend themselves. Students will identify how the seed container determines its dispersal. Students will understand why the variety of seed dispersal systems is beneficial.

Intended Outcome: Student sub-groups will be able to teach each other the survival strategies that plants use, through role-playing.

Activity 3: DESIGN TIME (30 min.) – Now that we’ve learned about the multitude of surprising adaptations that plants have to survive, let’s design our own!



Teachers and other adults will be helpful in encouraging creativity in the students’ thinking and designing, while keeping their inventions focused on plant survival strategies.

Objective: Students will design their own plant with specialized ways to gather their resources, defend themselves, invite pollinators, or disperse their seeds.

Intended Outcome: Students will draw their own plant, with specialized survival adaptations, and will be able to explain their design reasoning.

Successful completion of this program will help support your students’ proficiency in NGSS

Performance Expectations:

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.