Unit 5 Roots

Content Area: **Science**
Course(s): **Horticulture 1**
Time Period: **January**
Length: **8 Blocks**
Status: **Published**

Transfer Skills

At the end of this unit of instruction sttudents will observe, diagram, and maintaqin root systems in various plants.

Enduring Understandings

Roots are the primary pathway for water and nutrients to enter the plant.

Roots are essential to all plants in that they anchor the plant, absorb water and minerals and store large quantities of food.

Essential Questions

When is too much of a good thing bad?

Content

Vocabulary:

Root cap, root hair, tuberous root, fibrous root systems, tap root

Objectives

Recognize the functions of roots and to revisit transpiration and trace the path of water from entry into the roots and leaves.

View the root cap and root hairs and to explain the function of each.

Distinguish between tap roots and fibrous root systems and to identify plants that have either a tap root or fibrous root system .

Propagate various greenhouse plants via root cuttings.

Assessments

Asexual Propagation Project: Student propagate plants via root cuttings

Root Tissue Lab
Prepare and Observe root cuttings

Mum Research Project

Mum Research Project: Final Presentation (written and oral)

Standards

HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

	Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.
SEP.1.a.1	that arise from careful observation of phenomena, or unexpected results, to clarify and/or seek additional information.
	Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts.

SEP.1.c	Ask questions that can be investigated within the scope of the school laboratory, research facilities, or field (e.g., outdoor environment) with available resources and, when appropriate, frame a hypothesis based on a model or theory.
SCI.9-12.1.3	Patterns of performance of designed systems can be analyzed and interpreted to reengineer and improve the system.
9-12.HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
9-12.HS-LS1-4	Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

Resources

Text:

Introductory Horticulture 8th ed(Cengage Learning), Hardcover (2011)
by H Edward Reiley, Carroll L Shry

Greenhouse

Planting Materials including soil, water, seeds, Fertilizer.

Root Samples