

Microworlds Concept Storyline

Unifying Concept

Living systems at all levels of organization demonstrate the complementary nature of structure and function.

Unit Concept

All living things are composed of cells, the fundamental unit of life. Cells have structures that help them survive in specific environmental conditions.

Grade-Level Concept

Magnification reveals that all living things are made up of one or more cells.

Subconcept 1

Observation gives us relevant information about an object. Magnifiers allow us to observe greater detail.

Lesson 1: Pre-Unit Assessment: Observing a Penny
Students use a hand lens to observe a penny.

Lesson 2: Communicating Your Observations
Students record their observation of the penny.

Lesson 3: Learning about Lenses
Students investigate the properties of lenses.

Lesson 4: Looking through Lenses
Students use the lenses to explore common objects.

Subconcept 2

A microscope is one type of magnifying tool. Each part of the microscope has a specific function.

Lesson 5: Learning to Use the Microscope
Students learn about the parts of a microscope and their functions.

Lesson 6: Practicing with the Microscope
Students use the microscope to observe common items.

Lesson 7: The Field of View
Students determine the field of view of the microscope.

Lesson 8: Preparing Slides
Students prepare slides to view objects under a microscope.

Lesson 9: What Is It?
Students identify unknown three-dimensional objects.

Lesson 10: Exploring Common Objects
Students experiment with different slide techniques, focusing, and light adjustments.

Subconcept 3

Magnification reveals the cellular structure of living organisms.

Lesson 11: Looking Inside an Onion
Students observe a single cell in an onion.

Lesson 12: Looking at Living Things: Volvox
Students prepare slides and view Volvox.

Lesson 13: Looking at Living Things: Blepharisma
Students prepare slides and view Blepharisma.

Lesson 14: Looking at Living Things: Vinegar Eels
Students prepare slides and view vinegar eels.

Lesson 15: Looking at Living Things: Hay and Grass Infusions I
Students observe microbes in infusions.

Lesson 16: Looking at Living Things: Hay and Grass Infusions II
Students continue to observe microbes in infusions.

Lesson 17: Post-Unit Assessment: Sharing What We Know about Microorganisms
Students reflect on and discuss what they have learned.