



Tree Rings and Climate

Performance Expectations

MS-LS2-3: Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

Science and Engineering Practices

Asking questions and defining problems

Planning and carrying out investigations

Analyzing and Interpreting Data

Constructing Explanations

Crosscutting Concepts

Energy and Matter

Stability and Change

Cause and effect

Seed Genetics

Performance Expectations

MS-LS3-1: Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

Science and Engineering Practices

Analyzing and interpreting data

Using mathematics and computational thinking

Constructing explanations

Engaging in argument from evidence

Crosscutting Concepts

Cause and Effects

Structure and Function

Building a Kidney Model

Performance Expectations

MS-LS4-2: Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

Science and Engineering Practices

Analyzing and Interpreting Data

Constructing Explanations

Crosscutting Concepts

Patterns

Cause and Effect



Cellular Diffusion and Osmosis

Performance Expectations

MS-LS1-2: Develop and use a model to describe the function of the cell as a whole and ways parts of the cells contribute to the function.

Science and Engineering Practices

Asking questions and defining problems
Analyzing and interpreting data
Using mathematics and computational thinking
Developing and using models

Crosscutting Concepts

Cause and effect
Systems and system models

Animal Behavior

MS-LS2-2: Construct an explanation that predicts the patterns of interactions among organisms across multiple ecosystems.

Science and Engineering Practices

Analyzing and Interpreting Data
Constructing Explanations

Crosscutting Concepts

Patterns
Cause and Effect
Energy and Matter
Stability and Change

Life Cycles

Performance Expectations

MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

Science and Engineering Practices

Analyzing and interpreting data
Constructing explanations

Crosscutting concepts

Cause and Effect
Scale, Proportion, and Quantity
Systems and System Models



Carbon Dioxide Emissions and Climate Change

Performance Expectations

MS-LS2-3: Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

Science and Engineering Practices

Asking questions and defining problems

Planning and carrying out investigations

Analyzing and Interpreting Data

Constructing Explanations

Crosscutting Concepts

Energy and Matter

Stability and Change

Cause and effect

Artificial Selection

Performance Expectations

MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Science and Engineering Practices

Analyzing and interpreting data

Engaging in Argument from Evidence

Constructing Explanations

Developing and Using Models

Crosscutting Concepts

Cause and Effect

Structure and Function

Ecosystems

MS-LS2-2: Construct an explanation that predicts the patterns of interactions among organisms across multiple ecosystems.

Science and Engineering Practices

Analyzing and Interpreting Data

Constructing Explanations

Crosscutting Concepts

Patterns

Cause and Effect

Stability and Change



Photosynthesis

Performance Expectations

MS-LS1-6: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

Science and Engineering Practices

Analyzing and Interpreting Data

Planning and Carrying Out Investigations

Constructing Explanations

Crosscutting Concepts

Structure and Function

Energy and Matter
