

3rd Grade Unit 3 - Traits

Content Area: **Science**
Course(s): **Science Grade 3**
Time Period: **MP2**
Length: **17 days**
Status: **Published**

NJSLS - Science

SCI.3-LS3-1	Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
SCI.3-LS3-2	Use evidence to support the explanation that traits can be influenced by the environment.
SCI.3-LS4-2	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
SCI.3-LS4-3	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Science and Engineering Practices

Analyzing and Interpreting Data

Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1)

Constructing Explanations and Designing Solutions

Use evidence (e.g., observations, patterns) to support an explanation. (3-LS3-2, 3-LS4-2)

Engaging in Argument from Evidence

Construct an argument with evidence. (3-LS4-3)

Disciplinary Core Ideas

LS3.A: Inheritance of Traits

Many characteristics of organisms are inherited from their parents. (3-LS3-1)

Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)

LS3.B: Variation of Traits

Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1)

The environment also affects the traits that an organism develops. (3-LS3-2)

LS4.B: Natural Selection

Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)

LS4.C: Adaptation

For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

Crosscutting Concepts

Patterns

Similarities and differences in patterns can be used to sort and classify natural phenomena. (3-LS3-1)

Cause and Effect

Cause and effect relationships are routinely identified and used to explain change. (3-LS3-2), (3-LS4-2), (3-LS4-3)

Rationale and Transfer Goals

What kinds of traits are passed on from parent to offspring?

What environmental factors might influence the traits of a specific organism?

In this unit of study, students acquire an understanding that organisms have different inherited traits and that the environment can also affect the traits that an organism develops. The crosscutting concepts of patterns and cause and effect are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in analyzing and interpreting data, constructing explanations, and designing solutions. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

Enduring Understandings

Many characteristics of organisms are inherited from their parents.

Essential Questions

What kinds of traits are passed on from parent to offspring?

What environmental factors might influence the traits of a specific organism?

Content - What will students know?

- Similarities and differences in patterns that can be used to sort and classify natural phenomena.

- Many characteristics of organisms and that they are inherited from their parents.
- Different organisms vary in how they look and function because they have different inherited information.
- Cause-and-effect relationships are routinely identified and used to explain change.
- Other characteristics, which can range from diet to learning, result from individuals' interaction with the environment.
- Many characteristics involve both inheritance and environment.
- The environment also affects the traits that an organism develops.

Skills - What will students be able to do?

- Sort and classify natural phenomena using similarities and differences.
- Sort and classify natural phenomena using similarities and differences.
- Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
- Identify cause-and-effect relationships in order to explain change.
- Use evidence (e.g., observations, patterns) to support an explanation.
- Use evidence to support the explanation that traits can be influenced by the environment. Examples of the environment's effect on traits could include: Normally tall plants that grow with insufficient water are stunted or a pet dog that is given too much food and little exercise may become overweight.
- Describe and explain the many characteristics of organisms and that they are inherited from their parents.
- Explain how different organisms vary in how they look and function because they have different inherited information.
- Describe other characteristics, and how they can range from diet to learning, result from individual's' interaction with the environment.
- Know that many characteristics involve both inheritance and environment.

Activities - How will we teach the content and skills?

- Mystery Science Fates of Traits Anchor Phenomenon

- Mystery Science Fates of Traits Lesson 1
- Mystery Science Fates of Traits Lesson 2
- Mystery Science Fates of Traits Lesson 3
- Mystery Science Fates of Traits Lesson 4
- Mystery Science Fates of Traits Lesson 5
- Whole group instruction and discussion.
- Read Alouds
- Group and Individual Projects
- Hands-on discovery when possible; creating models
- Webquests/Internet “field trips”

Formative Assessments

- Mystery Science Fates of Traits Lesson 1 Assessment
- Mystery Science Fates of Traits Lesson 2 Assessment
- Mystery Science Fates of Traits Lesson 3 Assessment
- Mystery Science Fates of Traits Lesson 4 Assessment
- Mystery Science Fates of Traits Lesson 5 Assessment
- Teacher Observation
- Student projects/models
- Exit Tickets

Summative Assessments

- Tests/Quizzes
- Mystery Science Fates of Traits Performance Task
- [Mystery Science Fates of Traits Unit Assessment](#)

- [Grade 3 Science Benchmark #2](#) (given after Unit 5)

Spiraling for Mastery

Content or Skill for this Unit	Spiral Focus from Previous Unit	Instructional Activity
Many characteristics of organisms and that they are inherited from their parents.	<p>Grade 1: Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.</p> <p>Grade 1: Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.</p>	1-LS1-2 Activities

Key Resources

[Mystery Science](#)

[Student Interactives](#)

Career Readiness, Life Literacies, & Key Skills

PFL.9.1.5.CR.1	Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
WRK.9.2.5.CAP.1	Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
WRK.9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
WRK.9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
TECH.9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about

	possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
TECH.9.4.5.CI.2	Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
TECH.9.4.5.DC.4	Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
TECH.9.4.5.DC.8	Propose ways local and global communities can engage digitally to participate in and promote climate action (e.g., 6.3.5.GeoHE.1).
TECH.9.4.5.TL.2	Sort and filter data in a spreadsheet to analyze findings.
TECH.9.4.5.TL.3	Format a document using a word processing application to enhance text, change page formatting, and include appropriate images graphics, or symbols.
TECH.9.4.5.IML.2	Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
TECH.9.4.5.IML.3	Represent the same data in multiple visual formats in order to tell a story about the data.

Interdisciplinary Connections

NJSLS ELA

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers. (3-LS4-2, 3-LS4-3)

RI.CI.3.2. Recount in oral and written form the key details from a multi-paragraph informational text and explain how they support the main idea. (3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

W.AW.3.1. Write opinion texts to present an idea with reasons and information. (3-LS4-3)

A. Introduce an opinion clearly.

B. Support the opinion with facts, definitions, reasons, text evidence, or other information and examples related to the topic.

C. Link ideas within sections of information using transition words and phrases (e.g., then, because, also, therefore, since, for example) to connect opinion and reasons.

D. Provide a conclusion related to the opinion presented.

W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

(3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

A. Introduce a topic clearly.

B. Develop the topic with facts, definitions, and concrete details, text evidence, or other information and examples related to the topic.

C. Include text features (e.g.: illustrations, diagrams, captions) when useful to support comprehension.

D. Link ideas within sections of information using transition words and phrases (e.g., then, because, also, another, therefore).

E. Provide a conclusion related to the information or explanation presented.

SL.PI.3.4. Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

NJSLS Mathematics

MP.2 Reason abstractly and quantitatively. (3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

MP.4 Model with mathematics. (3-LS3-1, 3-LS3-2, 3-LS4-2, 3-LS4-3)

3.DL.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets. (3-LS4-2, 3-LS4-3)

3.DL.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS3-1, 3-LS3-2)