



Grade 3 Science - Unit 3 - Survival of Organisms

Unit Focus

In this engaging and hands-on science unit, third-grade students will explore the compelling question: What helps organisms survive in their environments? Using ants as the anchoring phenomenon, students will begin by generating observations and wonderings about what makes ants so successful as a species. The unit unfolds across four major conceptual understandings: life cycles, traits and environmental influences, survival through group behaviors, and adaptations to changing environments. Through a blend of Mystery Science lessons, interactive simulations, scientific modeling, and project-based tasks, students will develop a foundational understanding of how organisms grow, change, and adapt in order to survive. Key science concepts such as inheritance of traits, metamorphosis, and natural selection are explored in developmentally appropriate ways that encourage curiosity, collaboration, and critical thinking.

Throughout the unit, students will participate in meaningful activities that allow them to apply their learning in authentic contexts. They will explore life cycles with crafts, try a pollination experiment, study traits passed down in animals, and play games like Camouflage Mouse to learn how the environment affects survival. The unit culminates in a project-based learning task where students research an animal from a chosen biome and explain how its structural and behavioral adaptations help it survive. By the end of the unit, students will be able to make connections between an organism's traits, its environment, and its survival, laying the groundwork for future studies in ecology and biology.

Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
Next Generation Science Standards Cross Cutting Concepts: 3 - Cause and effect relationships are routinely identified and used to explain change. (3- LS2- 1),(3-LS4-3) (3.IRE.CC.1.1) - A system can be described in terms of its components and their interactions. (3-LS4-4) (3.IRE.CC.3.1) - Knowledge of relevant scientific concepts and research findings is important in engineering. (3-LS4-4) (3.IRE.CC.4.1) - Patterns of change can be used to make predictions. (3-LS1-1) (3.IVT.CC.1.2) - Cause and effect relationships are routinely identified and used to explain change. (3- LS3-2),(3-LS4-2) (3.IVT.SEP.2.1) Disciplinary Core Ideas: 3 - When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4) (3.LS2.C.1) - Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (Note: Moved from K–2) (3-LS2-1) (3.LS2.D.1)	<i>Students will be able to independently use their learning to...</i> T1 Research and identify credible resources to expand knowledge and understanding of a topic or issue.	
	Meaning	
	Understanding(s)	Essential Question(s)
	<i>Students will understand that...</i> U1 Organisms have unique life cycles, but all share common stages. U2 Some animals form groups that improve their chances of survival. U3 Traits are passed from parents to offspring, but variations exist within species. U4 Environmental factors can influence the traits of living things. U5 Fossils provide evidence of past life and the environments they lived in. U6 Differences in traits can provide advantages in survival, reproduction, and competition for resources.	<i>Students will keep considering...</i> Q1 How do different organisms grow and change throughout their life cycles? Q2 Why do some animals live in groups, and how does that help them survive? Q3 How are traits passed from parents to offspring, and why do some individuals look different from each other? Q4 How can an organism's traits be influenced by its environment? Q5 How do differences in traits help organisms survive? Q6 Why do some organisms thrive in a habitat while others struggle or disappear?

Stage 1: Desired Results - Key Understandings

- For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) (3.LS4.C.1)
- Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4) (3.LS4.D.1)
- Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1) (3.LS1.B.1)
- Many characteristics of organisms are inherited from their parents. (3-LS3-1) (3.LS3.A.1)
- Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. (3-LS3-2) (3.LS3.A.2)
- Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) (3.LS3.B.1)
- The environment also affects the traits that an organism develops. (3-LS3-2) (3.LS3.B.2)
- Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) (3.LS4.B.1)

Performance Expectations: 3

- Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. (3-LS1-1)
- Construct an argument that some animals form groups that help members survive. (3-LS2-1)
- 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. (3-LS3-1)
- Use evidence to support the explanation that traits can be influenced by the environment. (3-LS3-2)
- 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. (3-LS4-2)
- 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. (3-LS4-3)
- Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. (3-LS4-4)

Science and Engineering Practices: 3

U7 Changes in habitats affect the survival of organisms.
U8 Solutions can be developed to address challenges caused by environmental changes.

Q7 How can humans address problems caused by environmental changes?

Acquisition of Knowledge and Skill

Knowledge

Students will know...

K1 The stages of life cycles in different plants and animals.
K2 The role of inherited traits and environmental influences in shaping organisms.
K3 The benefits of animals forming groups for survival.
K4 How variations in traits impact an organism's ability to survive and reproduce.
K5 The relationship between environmental changes and the survival of species.
K6 How to develop arguments and explanations using evidence.
K7 Vocabulary: Birth, Larva, Growth, Death, Life Cycle, Life Stages, Fruit, Pollen, Pollination, Seed, Inherit, Trait, Offspring, Social Behavior, Variation, Generation, Survive, Environment, Behavioral Adaptation, Structural Adaption, Species, Habitat.

Skill(s)

Students will be skilled at...

S1 Develop models to describe the life cycles of different organisms.
S2 Analyze and interpret data to identify patterns in inherited traits.
S3 Construct arguments about the survival benefits of group behavior in animals.
S4 Use evidence to explain how traits are influenced by the environment.
S5 Construct explanations for how trait variations help organisms survive.
S6 Make claims about environmental changes and their effects on living things.

Stage 1: Desired Results - Key Understandings

- Construct an argument with evidence, data, and/or a model. (3-LS2-1) (3.IRE.SEP.2.1)
- Construct an argument with evidence. (3- LS4-3) (3.IRE.SEP.2.2)
- Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-LS4-4) (3.IRE.SEP.2.3)
- Develop models to describe phenomena. (3-LS1-1) (3.IVT.SEP.1.1)
- Analyze and interpret data to make sense of phenomena using logical reasoning. (3- LS3-1) (3.IVT.SEP.2.1)
- Use evidence (e.g., observations, patterns) to support an explanation. (3-LS3-2) (3.IVT.SEP.3.1)
- Use evidence (e.g., observations, patterns) to construct an explanation. (3-LS4-2) (3.IVT.SEP.3.2)
- Science findings are based on recognizing patterns. (3-LS1-1) (3.IVT.SEP.4.1)

Madison Public Schools Profile of a Graduate

- Product Creation: Effectively use a medium to communicate important information. (POG.3.2)