

SCIENCE 3D

RAINFOREST LIFE

SCIENCE PERFORMANCE EXPECTATIONS AND DISCIPLINARY CORE IDEAS

In the Elementary School Mission (NGSS Grade 3), students will address the general topics below. For a complete list of NGSS standards covered in each segment of the mission, continue reading after the general standards. *Note: Be sure to complete the **Mission Reader** and **Mission Research** before viewing the full **Mission Video**. Explore [How to Use Science 3D](#) to get suggestions on how to pace the mission and options for the order of activities. Math and Language Arts standards will be added shortly.*

- In the **Mission Reader**, *Rainforest Life*, students will learn about biodiversity, classification of plants and animals, structure and function, life cycles, and the flow of energy and matter. They will also explore animal behavior and threats to rainforests.
- During **Mission Research**, students will apply their knowledge to classify plants and animals based on their characteristics.
- In the **Science Mission**, students will explore why some animals live in groups. They will use data to make graphs and answer questions about biodiversity and the function of different animal and plant structures.
- In the **STEM Project**, students will explore gravity and balanced and unbalanced forces in the rainforest. They will use this knowledge to create their own designs for getting equipment into the rainforest canopy.
- The **Explore Your Backyard** activity has students explore a local ecosystem to document the biodiversity and classify the plants and animals they observe.

SCIENCE/ENGINEERING AND DESIGN DISCIPLINARY CORE IDEAS AND PERFORMANCE EXPECTATIONS

MISSION READER

3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth reproduction, and death.
LS1.B	Growth and development of organisms.
3-LS1-2	Construct an argument that some animals form groups that help members survive.
LS2.D	Social interactions and group behavior.
3-LS1-3	Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation in these traits exists in a group of similar organisms.
LS3.A	Inheritance of traits: many characteristics are inherited from their parents.
3-LS1-4	Use evidence to support the explanation that traits can be influenced by the environment.
3-LS4-4	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 might change.
LS2.C	Ecosystem dynamics, functioning and resilience.
LS4.D	Biodiversity and humans.

MISSION RESEARCH

3-LS1-4	Use evidence to support the explanation that traits can be influenced by the environment.
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SCIENCE MISSION

3-LS1-2	Construct an argument that some animals form groups that help members survive.
LS2.D	Social interactions and group behavior.
3-LS1-4	Use evidence to support the explanation that traits can be influenced by the environment.
LS3.B	Variation of traits: the environment also affects that traits that an organism develops.
3-LS4-3	Construct an argument with evidence in a particular habitat some organism can survive well, some can survive less well, and some cannot survive at all.
LS4.C	Adaptation.
LS2.C	Ecosystem dynamics, functioning and resilience.

STEM PROJECT

3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
PS2.A	Forces and motion: each force on a particular object has strength and direction.
PS2.A	Forces and motion: patterns can be observed and measured.
PS2.B	Types of interaction: objects in contact exert force on one another.
3-5 ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
ETS1.B	Developing possible solutions: communicating with peers about proposed solutions is important and can improve design.
ETS1.C	Optimizing the design solution.

EXPLORE YOUR BACKYARD

3-LS1-4	Use evidence to support the explanation that traits can be influenced by the environment.
3-LS4-3	Construct an argument with evidence in a particular habitat some organism can survive well, some can survive less well, and some cannot survive at all.
LS4.C	Adaptation.

CROSS CUTTING CONCEPTS

Patterns: [Reader](#), [Science Mission](#), [Explore Your Backyard](#)

Cause & effect/Mechanisms & predictions: [Reader](#), [Science Mission](#), [STEM Project](#)

Scale proportion and quantity: [Science Mission](#), [STEM Project](#)

System and system models: [Reader](#), [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Energy and matter (flows, cycles and conservation): [Reader](#), [Mission Research](#), [Science Mission](#)

Structure and function: [Reader](#), [Mission Research](#), [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Stability and change: [Reader](#), [Science Mission](#)

CONNECTION TO ENGINEERING, TECHNOLOGY AND APPLICATIONS OF SCIENCE

Interdependence of Science, Engineering and Technology: [Reader](#), [STEM Project](#)

Influence of Science, Engineering and Technology on Society and the Natural World: [Reader](#)

CONNECTION TO NATURE OF SCIENCE

Scientific investigations use a variety of methods: [Reader](#), [Science Mission](#)

Scientific knowledge is based on empirical evidence: [Science Mission](#), [Explore Your Backyard](#)

Scientific knowledge is open to revision in light of new evidence: [Reader](#), [Science Mission](#)

Science models, laws, mechanisms and theories explain natural phenomena: [Science Mission](#), [STEM Project](#)

Science is a way of knowing: [Reader](#), [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Scientific knowledge assumes an order and consistency in natural systems: [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Science addresses questions about the natural and material world: [Reader](#), [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

SCIENCE AND ENGINEERING PRACTICES

Asking questions and defining problems: [Reader](#), [Science Mission](#)

Developing and using models: [Science Mission](#), [STEM Project](#)

Planning and carrying out investigations: [Science Mission](#), [Explore Your Backyard](#)

Analyzing and interpreting data: [Science Mission](#)

Using mathematics and computational thinking: [Science Mission](#), [STEM Project](#)

Constructing explanations and designing solutions: [Mission Research](#), [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Engaging in argument from evidence: [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)

Obtaining, evaluating and communicating information: [Science Mission](#), [STEM Project](#), [Explore Your Backyard](#)