

Patterns of Change in Living Things

Investigation Information and Standards Alignment

Subject
Science

Discipline
Life Science

Grade band
3-5

Task

Students figure out which events in the life cycles of different animals and plants are the same and which events make the life cycles different.

Core Idea(s)

ELS3: Growth and Development of Organisms

Practices

SEP1: Asking questions and defining problems

SEP3: Planning and carrying out investigations

SEP4: Analyzing and interpreting data

SEP7: Engaging in argument from evidence

SEP8: Obtaining, evaluating, and communicating information

Crosscutting Concepts

CC1: Patterns

CC7: Stability and change

Alignment with Academic Standards for Science

Teachers can use this investigation to help students reach any of the performance expectations for science that are listed in the table below.

Source	Code	Standard
NGSS	3-LS1-1	Develop models to describe that organism have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
Alabama		
Arizona	1.L.1U1.6	Observe, describe, and predict life cycles of animals and plants.
Arkansas	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.
Colorado	3-LS2-1	Organisms have unique and diverse life cycles.
Florida	SC.4.L.16.4	Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants.
Georgia	S2L1	Obtain, evaluate, and communicate information about the life cycles of different living organisms.
Indiana	1.LS.1	Develop representations to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

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Minnesota	1.4.3.1.1	Demonstrate an understanding that animals pass through life cycles that include a beginning, development into adults, reproduction and eventually death.
Mississippi	L.2.2	Students will demonstrate an understanding of how living things change in form as they go through the general stages of a life cycles.
Missouri	3.LS1.B.1	Develop a model to compare and contrast observations on the life cycle of different plants and animals.
Montana	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.
Nebraska	SC.3.9.3.A	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
North Carolina	3.L.2.3	Summarize the distinct stages of the life cycle of seed plants.
Ohio	3.LS.3	Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.
South Carolina	4.L5A.	Develop and use models to compare the stages of growth and development in various animals.
Texas	4.10C	Explore, illustrate, and compare life cycles in living organisms such as beetles, crickets, radishes or lima beans.
Utah	3.2.1	Develop and use models to describe changes that organisms go through during their life cycles. Emphasize that organisms have unique and diverse life cycles but follow a pattern of birth, growth, reproduction, and death. Examples of changes in life cycles could include how some plants and animals look different at different stages of life or how other plants and animals only appear to change size in their life
Virginia	2.4	The student will investigate and understand that plants and animals undergo a series of orderly changes as they grow and develop. Key ideas include a) animals have life cycles; and b) plants have life cycles.
Wyoming	3-LS3-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Alignment with Common Core State Standards for English Language Arts

Teachers can use this investigation to help students reach any of the performance expectations for reading, writing, or speaking and listening that are listed in the table below.

Strand	Code	Standard
Reading	RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
	RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.

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	RI.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.
	RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a <i>grade 3 topic</i> .
	RI.3.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
	RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
	RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
	RI.3.10	Read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.
Writing	W.3.2.A	Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
	W.3.2.B	Develop the topic with facts, definitions, and details.
	W.3.2.C	Use linking words and phrases to connect ideas within categories of information.
	W.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.
	W.3.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
	W.3.6	With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.
Speaking and Listening	SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 3 topics and texts</i> , building on others' ideas and expressing their own clearly.
	SL.3.1.A	Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
	SL.3.1.B	Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
	SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
	SL.3.1.D	Explain their own ideas and understanding in light of the discussion.
	SL.3.3	Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
	SL.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.
	SL.3.6	Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

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Alignment with English Language Proficiency Standards

Teachers can use this investigation to help emerging multilingual students reach the performance expectations for English language proficiency listed in the table below.

Modality	Code	Standard
Receptive	ELP 1	Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.
	ELP 8	Determine the meaning of words and phrases in oral presentations and literary and informational text.
Productive	ELP 3	Speak and write about grade-appropriate complex literary and informational texts and topics.
	ELP 4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.
	ELP 7	Adapt language choices to purpose, task, and audience when speaking and writing.
	ELP 9	Create clear and coherent grade-appropriate speech and text.
	ELP 10	Make accurate use of standard English to communicate in grade-appropriate speech and writing.
Interactive	ELP 2	Participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
	ELP 5	Conduct research and evaluate and communicate findings to answer questions or solve problems.
	ELP 6	Analyze and critique the arguments of others orally and in writing.