

Unit 3 - Survive and Thrive: How Plants and Animals Fit into Their Worlds

Pacing Guide using Mystery Science

*Informational writing standards are now being covered in science. Please use [these resources](#) to address the informational writing standards. These lessons can be incorporated at any point during the unit.

Unit & Lesson #	Focus	Standards Addressed	Day (20-30 minutes)	Overview	Writing Activities & Additional Activities
Heredity, Survival, & Selection Anchor Phenomenon Animals Around Us	Animal Groups & Survival	3-LS4-3 3-LS2-1	1	The anchor phenomenon for this unit is one of the most successful kinds of animals on Earth: ants! How can such small creatures survive in so many places with such a huge population of individuals? During the introduction, students generate observations and questions about the phenomenon and create a list of possible explanations for the phenomenon. Students will gather clues during and after each lesson in this unit to help them improve their understanding and explanations. It is important to encourage students to recognize that even if they don't know the perfect answer yet, they are going to learn a lot throughout the unit and	Writing: Amazing Ants Writing: See-Think-Wonder Chart

				will have an opportunity to revisit the phenomenon over time.	
Heredity, Survival, & Selection Lesson 1 How do you identify a mystery fruit?	Traits & Inheritance	3-LS3-1	2	In this session, students examine plant traits and use that information as evidence to help them identify an unknown fruit.	
			3	In the hands-on activity, Fruit Market Mysteries, students look for similarities and differences in the leaves, flowers, and fruits of plants found at the grocery store to sort them into groups and identify patterns of inheritance. Wrap-up slides & teacher-led discussion.	Writing: <u>Fruit Market Mystery</u>
			4	Anchor Connection Students wonder: How are there so many different kinds of animals? Students learn: One of the reasons that ants are so successful is that they eat a wide variety of foods. This means they are likely to find something to eat, no matter where they are	Writing: <u>Science Journal Entry</u> to answer anchor connection question.

			5	<u>Lesson 1 Assessment</u> Extensions include: Mini-lessons, activities	
Heredity, Survival, & Selection Lesson 2 What do dogs and pigeons have in common?	Trait Variation, Inheritance, & Artificial Selection	3-LS3-1	6	In this session, students explore the extreme trait variation of different dog breeds -- and pet pigeon breeds!	Extension Video for Lesson: Speedy Saluki
			7	In the hands-on activity, Pigeon Pairings, students analyze trait similarities and differences among parent, offspring, and sibling pigeons. They interpret this data to discover that the variation and inheritance of traits creates a pattern that explains why we see such extreme traits in artificially selected animal breeds. Wrap-up slides & teacher-led discussion.	Writing: Pigeon Pairings Book: Traits and Attributes
			8	Anchor Connection Students wonder: Why do the same kinds of animals look and act so differently? Students learn: Even within a group of the same kind of ants, there	Writing: Science Journal Entry to answer anchor connection question.

				is huge variation between their physical and behavioral characteristics. They do different jobs to help one another within their colony, which means they are more likely to survive.	
		9		<u>Lesson 2 Assessment</u> Extensions include: Mini-lessons	
Heredity, Survival, & Selection CER #1		3-LS3-1	10		Writing: CER Activity #1 (use slides 1 & 2)
Heredity, Survival, & Selection Lesson 3 How could a lizard's toes help it survive?	Trait Variation, Natural Selection, & Survival	3-LS3-1 3-LS4-2 3-LS4-3	11	In this session, students explore how variation in the toe scales of green lizards provides some individuals with an advantage when it comes to climbing and surviving.	
			12	In the hands-on activity, Lizard Island, students participate in a simulation to explore what happens to these green lizards when a new species of brown lizards is introduced to their environment. Students gather evidence to explain how a change to the environment can cause a certain trait to become more common in a population over	

				time through the process of natural selection. Wrap-up slides & teacher-led discussion			Writing: <u>Science Journal</u> Entry to answer anchor connection question.
			13	Anchor Connection Students wonder: Why do animals work in groups? Students learn: Ants are very small, but they come in huge numbers! This means they are able to survive in the face of animals that can be hundreds of times their size.			
			14	<u>Lesson 3 Assessment</u> Extensions include: Readings and activities.			
Heredity, Survival, & Selection CER #2		3-LS4-2	15				Writing: <u>CER Activity #2</u> (use slides 5 & 6)
Heredity, Survival, & Selection Lesson 4 Why do some animals live in groups?	Animal Groups & Survival	3-LS2-1	16	In this lesson, students explore how living in a group can help animals survive. In the activity, Field Journal, students make observations of different animals that live in groups. They use their recorded observations to construct an explanation that being part of a group helps			Writing: <u>Field Journal</u> Mystery Science Hands on Activity (<u>Google Slides Activity</u>)

			animals find food, stay protected, and adjust to changes in their environment.			
		17	Wrap-up & teacher-led discussion.		Book on Epic: <u>Habitats</u>	
		18	Students wonder: How do animals change in different environments? Students learn: Ants do a huge number of different things in the face of challenges, such as building bridges or rafts out of their own bodies. These behaviors help them be successful all around the world.		Writing: <u>Science Journal</u> Entry to answer anchor connection question.	
		19	Lesson 4 Assessment Extensions include: Readings, activities, and videos.			
		20	In this session, students examine how physical traits can be influenced by the environment.			
		21	In the hands-on activity, Astronaut-in-Training, students analyze how a NASA astronaut's traits changed during his "year in space." Then they measure some of their physical traits (arm		Writing: <u>Traits in Space</u>	
				3-LS3-2		
				Traits & Environmental Variation		
				Heredity, Survival, & Selection Lesson 5 How long can people (and animals) survive in outer space?		

			strength, height, and balance) and predict how their own traits might change after living in space. Wrap-up slides & teacher-led discussion			Writing: <u>Science Journal</u> Entry to answer anchor connection question.
				22		Anchor Connection Students learn: We are still learning so much about ants. Ants have even been taken into space, just so we can learn from how they adapt to a totally new environment!
				23		<u>Lesson 5 Assessment</u> Extensions include: Readings, activities, and videos.
Heredity, Survival, & Selection CER #3		3-LS3-2		24		Writing: <u>CER Activity #3</u> (use slides 3 & 4)
Heredity, Survival, & Selection Unit Assessment				25		<u>Heredity, Survival, & Selection Unit Assessment</u>
Heredity, Survival, & Selection Performance Task Why do ants live in colonies?	Animal Groups & Survival	3-LS2-1		26		In this performance task, students will analyze data from competing ant colonies in order to construct an argument about how living in groups helps animals to survive. After a review of the
						Writing: <u>Who Won the Food?</u>

				unit, students are introduced to one of the most successful kinds of ants: Argentine ants. Students will analyze data that was gathered from observations of Argentine ant colonies competing with tufted tyrant ant colonies. Based on that analysis, students will construct an argument about how living in groups helps animals to survive.	
Unit 3 Benchmark Assessment			26	Benchmark Assessment given via LinkIt	