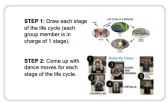
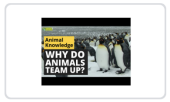
Unit of Inquiry Name: Loving Life	~130 minutes	**Lesson # 3**
Learning Event 3: Students make sense of patterns and relationships in observations and data through representation, analysis, and interpretation.		
NGSS 3 Dimensional Lesson Concept: Construct an argument with evidence that being part of a group helps animals obtain food, defend themselves and cope with changes. Cause/effect relationship between forming groups and survival.		
SEP 3-LS2-1 Engaging in Argument from Evidence. Construct an argument with evidence. **DCI 3-LS2-1: Social Interactions and Group Behavior.** 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. **CCC 3-LS2-1, 3-LS4-4: Cause and Effect.** Cause and effect relationships are routinely identified and used to explain change.	**Success Criteria:** ● I can find evidence in text and video. ● I can make observations and construct an argument with evidence. ● I can identify patterns.	
Anchor Phenomenon: Plants and animals have unique life cycles and inherited traits that help them survive and thrive. **(**Life Cycle of a Butterfly) **Lesson Investigative Phenomenon:** Inside a Monarch Swarm - monarch butterflies migrate and hibernate in swarms		
ELD Language Target: Exchanging information and ideas with others through oral collaborative discussions on a range of social and academic topics (SL.3.1, 6; L.3.1, 3, 6), Connecting and condensing ideas (W.3.1-3, 5; SL.3.4, 6; L.3.1, 3, 6) - Making inferences based on observations and evidence		
Key Vocabulary: gratitude, groups, survival, thriving, claim, evidence and phenomenon		
Habits of Mind #12 & 15: (12) Responding with Wonderment and Awe (15) Thinking Interdependently: Working together! Teamwork!		

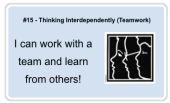
Materials Needed	Prepare
● Resource Slides: Lesson 3 ● Students will need nature journals	● Ask students to come to class with nature journals. ● Share Resource Slides: Lesson 3 on the screen with students. ● Assign groups of four students who feel comfortable sharing with each other. Depending on your class, you might want to keep these groups consistent throughout the project. ● Review Phenomenon Wall before starting the lesson to review the goals of the lesson. All other resources are linked directly for students to view on the Resource Slides.

Stage	Teacher Does **Learning Experience…** **Strategies/activities**	Student Does
Lesson 3 Launch/ Engage  40 min. 	***Third grade scientists, it is time for Loving Life! Let's start with the land acknowledgement we created as a class.*** Share slide of Land Acknowledgement and read together as a class. ***Pair Share: What are we thankful about the land that our school is on?*** ***Last lesson, we observed our chosen plants and animals on the schoolyard and decided what stage of the life cycle we were observing - birth, growth, reproduction or death.*** ***In your groups of four, you are each going to be in charge of one of the stages of your plant or animal's life cycle: birth, growth, reproduction or death. You will be drawing a group model of the life cycle. If you are in charge of birth, you will be drawing a picture related to the birth stage. If you're in charge of growth, you'll be drawing the growth stage. If you're in charge of reproduction, you'll draw the reproduction stage and if you're in charge of death, you'll draw the death stage. Once you've drawn your picture, you will come up with a dance move to show that stage. Here is an example of what you'd be creating as the butterfly group.***  Share the slide of the butterfly life cycle. ***You can see that you'll need to work together to choose the four pictures that you'll draw, because it's not as simple as birth, growth, reproduction and death fitting into each circle.*** ***You have 10 minutes to come up with a first draft of the life cycle of your plant or animal. You'll each be in charge of one drawing and one dance move. What questions do we have before we start?*** This should be a busy work time full of talking and working together. Students will have questions and 	Students read the Land Acknowledgement. (1 minute) Students share gratitude about the land and their chosen plants and animals. Students ask questions before getting started on group work.

	might need to do more research. They can learn from each other if another plant or animal has a similar life cycle.	Students work together in groups to draw their life cycle and come up with dance moves.
	Great work, scientists, now you have an additional 10 minutes in your groups to practice how you will show your life cycle dance or cheer to the group. Remember to shout out or sing out the stages you're showing. You can perform your dance for the group or ask for group participation. What questions do we have before we get started?	Students ask questions.
	We'll form a giant circle and have a life cycle dance off in 10 minutes! Go team!	Students prepare their cheer or dance to perform to the class.
	Great work, dancing scientists! As we show off the first drafts of our plant or animal's life cycle dance, we're going to make sure we support each other and celebrate as each group performs their first draft in the center of the circle. Let's come up with a group cheer to celebrate each group after each group performs.	Students agree on a way to celebrate each other.
	All groups perform their dances/ cheers and the whole class cheers after each one.	Students perform their dances and cheer each other on.
	**CCC1 - Patterns** ***Great work, dancing scientists! Those dances and cheers were amazing! What patterns did we notice between those dances?***	Students share the patterns they recognized - certain repeated dance moves or shoutouts.
	Great work noticing those patterns and making questions between life cycles! Let's spend the next 5 minutes looking over our life cycle sketches and making any revisions or changes based on what we learned from other life cycles.	Students revise their life cycle models in their groups.

Lesson 3 Explore/ Explain (Inside) 40 minutes	***Our community of scientists did such great work working together in groups. By working in a group of four, we each only had to draw one stage of the life cycle instead of all four. By performing our dances together, we learned from each other's moves and models and made our work collectively stronger. Humans are not the only animals that form groups to survive and thrive.***	Students watch the video and think about what they notice and wonder.
	***Today, we are going to learn more about butterflies, specifically the monarch butterfly and actually get to observe inside a hibernating and migrating swarm of monarch butterflies. After we watch this amazing clip inside a swarm of monarch butterflies, we'll share what we notice and wonder. Are you ready to jump into a swarm of monarch butterflies?*** Play video: *Inside a Monarch's Swarm.*	
	***What did you notice and wonder about the monarch butterfly swarm?***	Students share what they noticed and wonder about the swarm of monarch butterflies.
	DCI 3-LS2-1: Social Interactions and Group Behavior. ***Why do you think monarch butterflies migrate and hibernate in swarms?***	Students share thoughts they have about why butterflies hibernate and migrate in swarms.
	**DCI 3-LS2-1: Social Interactions and Group Behavior.** ***Great work, scientists! I am so impressed by your noticings and wonderings! You have some great ideas about why monarch butterflies might migrate and hibernate in swarms. Now, we're going to get to explore other examples of animals who live in groups in order to survive and thrive.***	
	***Let's start by observing ants.*** Play ant video. ***In this first clip, what group behavior do you see that is helping these ants survive and thrive?***	Students share out ideas about why they think these ants are working together to thrive and why they can do more in a group than individually.
	***Great observations and ideas, scientists! Let's look at another example of ants working together in groups.*** Play second ant video of ants forming a bridge.	

	***What group behavior is helping these ants to survive and thrive in this situation?*** ***What evidence can you use from these two clips showing ants working together in groups that would support the claim that: Ants form groups to help members survive and thrive. First, pair share your ideas and then we'll share out ideas with the whole class.*** ***Which scientists would like to share their claim or their partner's claim?*** ***Great work using evidence for your claims, scientists! In just a moment, we are going to get the opportunity to work in groups, animal groups, to come up with claims about how different animals form groups to help members survive and thrive.***	Students share how they see ants working in a group to make a bridge. **SEP 3-LS2-1 Engaging in Argument from Evidence.** Students fill in the blank as they pair share: Observing ants _____ is evidence that some ants form groups that help members survive. Students share out with the class.
	***Before we go into our groups, you and your group will be assigned a specific animal to focus on.*** Assign groups a specific animal group to focus on - geese, fish, bees, elephants, penguins or meerkats. Some of these animals are highlighted in the video before group work time.	Students form groups of geese, fish, bees, elephants, penguins or meerkats.
	**SEP 3-LS2-1 Engaging in Argument from Evidence.** ***We are going to watch a short video as research and examples of why some animals form groups for survival. You may see your animal featured or get ideas from examples of similar animals.*** ***What were some reasons why the animals in the video form groups for survival?*** Teacher records students' ideas to help get groups started.	Students watch 'Why Do Animals Team Up?' video. Students share out a few ideas before moving into group work.
	***Great work, scientists! We can use the checklist from the video to help us come up with reasons why we think our animals form groups to survive and thrive. The reasons on the checklist are to:***	

	☐ ***Survive icy temperatures*** ☐ ***Defend against predators*** ☐ ***Search for food*** ☐ ***Search for mates*** ☐ ***Bring up the offspring*** ☐ ***Learn from each other***	
	***Remember, our goal for group work is to keep working on teamwork - working with and learning from others.***	
	***Let's review our animals before we jump into work time.***	
	After working as a group, you'll be sharing out: ***We are the ____ (gaggle of geese, school of fish, swarm of bees, herd of elephants, colony of penguins or mob of meerkats) and we form groups to _____.***	Students work in groups to come up with ideas about why their animals form groups to survive and thrive.
	Work time.	
	Let's here from each group why your animals form group to survive and thrive.	Students share out their claims about why their animals form groups in order to survive and thrive.
	CCC 3-LS2-1, 3-LS4-4: Cause and Effect. ***Can we make any connections between these animal groups? Do any of these animals form groups for similar reasons?***	Students make connections between animal groups.
	***We often think of animals forming groups, but have you ever thought of how plants might form groups for survival, also? There is some really interesting research out there from scientists who study plants about how plants form groups and communicate for survival and thriving. Let's watch this short clip about 'How Trees Secretly Talk to Each Other'.***	

	What do you notice or wonder about this video and the idea that trees form groups and communicate?	Students share what they notice or wonder about trees communicating and forming groups to survive and thrive.
Lesson 3 Explore/ Explain (Outside) 40 min.   	***We talked about the Haudenosaunee (Hoe-dee-no-SHOW-nee) practice of a Thanksgiving address every time they gather as a group and close a gathering. Another tradition we can learn from the Iroquois or Haudenosaunee people is the traditional planting of the Three Sisters Garden. The Three Sisters Garden is a gardening practice that puts plants together to survive and thrive as a group.*** ***Let's watch the Legend of the Three Sisters together.*** Play the Legend of the Three Sisters. ***Pair Share: What do you notice and wonder about the Three Sisters Garden - the corn, beans and squash? Why do you think they help each other survive and thrive?*** Show students the handout about the Three Sister's Garden and the different planting methods. The Iriquois method (mound style of planting) is the one most schools would most likely be able to have room for. The first step is sprouting the corn seeds to reach about 4 inches before planting in the ground at the well of the mound. See this handout for more specific directions to go through with the students if you are able to plant a Three Sister's Garden at your school. ***Let's sprout our corn seeds - the first of the three sisters. What do plants need to survive and thrive?*** ***How can we help our corn seeds in our classroom or at our school survive and thrive?*** Plant corn seeds with students. If they have different ideas, try planting the corn in differen places - inside and outside, in the	Students share what they notice and wonder about the Three Sisters Garden. Students share out that plants need soil, water and sun. Students brainstorm where to sprout the corn seeds and how to care for them.

	window, in the center of the classroom, etc. Make observations about how they grow in different environments. ***Great work helping our corn seeds survive and thrive, biologists! Let's check in on our caterpillars and see how they are surviving and thriving in our classroom. Do they need any help? How are they doing? Let's observe.*** ***What questions do we have about our caterpillars?*** Teacher records questions.	Students observe the caterpillars and attend to their needs. Students ask questions.
	***Great work coming up with questions, scientists! We're going to take our questions out the schoolyard again to continue our observations of our plants and animals. First, we're going to get another Nature Jouranling lesson with John Muir Laws.*** Play the John Muir Laws: Asking Questions video until 10:53. Go over the three different types of questions: ☐ Let's See ☐ Could It Be? ☐ Leave it Be	
		
	Students go out and observe their plants and animals and return to share their questions.	Students go out to the playground and record questions about their plans and animals. Students share their questions and circle at least one 'Let's See' question they're interested in observing the answer to outside during the next nature journaling session.
	***Let's all circle at least one 'Let's See' question in our nature journals that we can set up an experiment to observe the answer to during our next nature journaling session. Your group can all choose the same question or different questions.***	

Lesson 3
Reflect/
Evaluate

10 min.

Great work, scientists! Together, we explored why monarch butterflies migrate and hibernate in swarms. We looked at group behaviors of ants, geese, fish, bees, elephants, penguins, meerkats and trees. We learned about how some plants communicate and form groups, or are planted in groups in order to survive and thrive. We also explored our plants and animals in the schoolyard to see how they form groups to survive and thrive. You came up with great claims and evidence about why animals form groups to survive and thrive. Let's get all of our great ideas and learning down on our Loving Life phenomenon wall!

DCI 3-LS2-1: Social Interactions and Group Behavior.
CCC 3-LS2-1, 3-LS4-4: Cause and Effect.

Phenomena Wall: ANCHOR: Life Cycle of a Butterfly

INVESTIGATIVE Phenomena: The Life Cycles of a butterfly, frog, chicken and red pepper
Essential Question: How can we help life survive and thrive at our school?

Question to Investigate	What We Did	What We Figured Out	Connection to Phenomenon	Questions We Have Now
Why do animals form groups to survive and thrive?	We explored why monarch butterflies migrate and hibernate in swarms. We also looked at group behaviors of ants, geese, fish, bees, elephants, penguins, meerkats and trees.	Some animals travel in large groups for survival as a behavioral adaptation. For example, the monarch butterflies hibernate in swarms to stay warmer. Ants work as a team to be much stronger than they would be individually. Plants communicate and compliment each other.	Monarch butterflies migrate and hibernate in swarms as an adaptation for survival during their growth and reproduction. They return to the habitat where they were born.	

Students share 'What We Figured Out' about why different animals (and even trees) form groups to survive and thrive.

Students make a 'Connection to the Phenomenon' about why monarch butterflies form groups for survival and how groups help them survive, grow and reproduce.

Students share the questions 'Questions We Have Now' to continue to explore about life cycles and why animals form groups.

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Please join the Loving Life Curriculum Discussion at https://forms.gle/FJ5QPpDxW87CkaT76 to provide feedback on this lesson.