

## NGSS & Common Core 5E Lesson Plan

Grade: 3	Topic: The Secret World of Ants	Time Allotted: vary	# Lessons: 3
<b>Brief Lesson Description:</b> Students will make observations on (and act out) how ants communicate to construct an argument about the structure and importance of social interactions in a colony.			
<b>Performance Expectation(s): 3-LS2 Ecosystems: Interactions, Energy and Dynamics</b> Students who demonstrate understanding can 3-LS2-1 Construct an argument that some animals form groups that help members survive.			
<b>Specific Learning Objectives:</b> Students will construct an argument that ants communicate and share food with each other in order for the colony to be successful.			
<b>Prior Student Knowledge:</b> Students have knowledge about ecosystems and interactions between species. They understand how plants and animals are dependent on each other and compete for resources.			
<b>Essential Features of Classroom Inquiry within Lesson:</b> Students will collect and observe ants passing colored sugar water. With support, students will be able to use the evidence to make a claim about how and why ants socialize.			
<b>Adaptations/Accommodations for Diverse Learners:</b> Supporting language development during the lessons with sentence frames and opportunities to talk with peers. (Example of a sentence frames include: If ____, then ____, because _____.) Visual support of videos and graphs. Hands-on activity allows for all students to participate. The game allows for students to act out and make personal connections the lesson.			
<b>Common Core Standards Addressed:</b> ELA/Literacy – RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS2-1) 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. (3-LS2-1) W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS2-1) Mathematics – MP.4 Model with mathematics. (3-LS2-1) 3.NBT Number and Operations in Base Ten (3-LS2-1)			
<b>Science &amp; Engineering Practices:</b> <b>Engaging in Argument from Evidence</b> Construct an argument with evidence, data, and/or a model	<b>Disciplinary Core Ideas:</b> <b>Social Interactions and Group Behavior</b> Being part of a group helps animals obtain food, defend themselves, and cope with changes.	<b>Crosscutting Concepts:</b> <b>Cause and Effect</b> Cause and effect relationships are routinely identified and used to explain change.	
<b>Possible Preconceptions/Misconceptions:</b> There is one “bossy ant” or queen ant that gives orders for the other ants to follow. Ants are not social and they don’t communicate.			
LESSON PLAN - 5E Model (6E Extend)			
Teacher does		Student does	
<b>ENGAGE:</b> “What do we know about ants?” Record answers on a chart. Support language with academic vocabulary. <b>Vocabulary:</b> Insects, colony, queen, workers, female, male, nest, tunnels, swarm, marching, head, thorax, abdomen, antenna, brood, eggs, larva,		<b>ENGAGE:</b> Students brainstorm ideas about ants.	



Food coloring (three colors)  
Magnifying glasses (optional)

Social Animal Game:  
Letter cards  
Square  
Circle

**Resources:**

*CSET Investigating Ant Colony*

<https://cset.stanford.edu/media/news/investigating-ant-colony-searching-link-citizen-science-project>

Fluon: <https://www.bioquip.com/search/default.asp>

Aspirator: <https://www.bioquip.com/search/DispProduct.asp?pid=1135A>