

THINKING AND ACTING LIKE A SCIENTIST

TEACHER'S GUIDE

Animals in Groups

How do animals work together in groups to help them survive?

GRADE 3

Life Science





Animals in Groups

Grade Level/ Content	3/Life Science
Lesson Summary	In this lesson, students will investigate how animals work together in groups to help them survive.
Estimated Time	1, 45-minute class period
Materials	Animals in groups trade books (see list below), chart paper, markers, scissors, glue/tape, Observation Form , journal
Secondary Resources	YouTube: Animal Groups Animals that Live in Groups by Kelsi Turner Tjernagel Animal Armies: Wolf Packs by Richard and Louise Spilsbury Animal Armies: Dolphin and Whale Pods by Richard and Louise Spilsbury Animal Armies: Lion Prides by Richard and Louise Spilsbury Animal Armies: Ant Colonies by Richard and Louise Spilsbury Animal Armies: Chimpanzee Troops by Richard and Louise Spilsbury Animal Armies: Dog Packs by Richard and Louise Spilsbury Why Live in Groups Why do animals do what they do?
NGSS Connection	3-LS2-1 Construct an argument that some animals form groups that help members survive.
Learning Objectives	<ul style="list-style-type: none"> Students identify types of animals that form or live in groups of varying sizes. Students construct an explanation (claim, evidence, and reasoning) describing how animals work together to help group members survive.
Cross-Curricular Project Connections	Picnic Time!, Safari Adventure

How do animals work together in groups to help them survive?

Kids are naturally drawn to animals. From very early ages, they show signs of wanting to play with, learn about, and take care of animals. Some of these animals live in groups. There are many different animal group names, and depending on the source, different names are given for the same group of animals. A herd, school, colony, litter, and pack are some more familiar group names. However, there are many, many more animal group names that are much less well-known such as a shrewdness (apes), congregation (alligators), gang (buffalos), coalition (cheetahs), business (ferrets), etc. In this investigation, students will be researching a chosen animal group to determine how living in a group helps individuals survive.

Investigation is based on the Van Andel Education Institute (VAEI) Instructional Model for Inquiry-Based Science.

In all investigations:



Students don't know the "answer" they are supposed to get.



Students play a driving role in determining the process for learning.



Teachers and students construct meaning together by journaling.



Students are working as hard as the teacher.

Part 1

INVESTIGATION SETUP

- Trade books such as:
 - *Animals that Live in Groups* by Kelsi Turner Tjernagel
 - *Animal Armies: Wolf Packs* by Richard and Louise Spilsbury
 - *Animal Armies: Dolphin and Whale Pods* by Richard and Louise Spilsbury
 - *Animal Armies: Lion Prides* by Richard and Louise Spilsbury
 - *Animal Armies: Ant Colonies* by Richard and Louise Spilsbury
 - *Animal Armies: Chimpanzee Troops* by Richard and Louise Spilsbury
 - *Animal Armies: Dog Packs* by Richard and Louise Spilsbury
- Chart paper
- Markers
- Scissors
- Glue/tape
- [Observation Form](#)
- Journal

Part 2

INVESTIGATION FACILITATION



Personal Knowledge

Students capture what they know about animal groups and how animals interact within their groups.

- Have students think about and share what they know about animal groups and how individuals interact within their groups.
- Students record their personal knowledge in their journals and share their ideas with the class.
- Generate a class list. (List may include: *help each other, find food together, fight with each other, play with each other, etc.*)

STUDENT ENGAGEMENT

Ask students to think about why they are put in groups to do work at school. Have students discuss with a partner and then discuss as a class. From that discussion, have students think about animal groups and why they are important.

DISCOURSE

Make a T-chart without column names to record student responses. Without informing the students, organize their responses as *Advantages* or *Disadvantages* of animals living in groups. Then, ask students what they think the names of the two columns are. Add column names and continue adding student responses, having the students decide if the response is an advantage or disadvantage.



Secondary Knowledge

Students view a video to help identify the group names for various animals.

- Have students watch the video [Animal Groups](#).
- Discuss the terms used to identify groups of different animals.
- Inform students that they will research one of the following animal groups:
 - Wolf Pack
 - Ant Colony
 - Dolphin Pod
 - Lion Pride
 - Dog Pack
 - Chimpanzee Troop

CREATIVE THINKING

Before watching the video, have students participate in a *Word Splash*. Display the following terms: *pack*, *colony*, *pod*, *pride*, and *troop*. Students write in their journals what they believe those words mean and how they relate to each other. Then, show the video [Animal Groups](#).



Question

Introduce the investigation question.

How does living together in a _____ help _____ survive?

Example: *How does living together in a colony help ants survive?*

STUDENT CHOICE

Group students by animals they are interested in. Offering students choice within parameters lets them take a leadership role in their learning without losing focus of your learning objectives.



Secondary Knowledge

Students read a book together as a class to create a class chart on animal groups.

- Model for students how to record information from secondary sources. Use the book, [Animals that Live in Groups](#) by Kelsi Turner Tjernagel, to identify the group name, group size, and advantages to living in the group.
- Once the information has been recorded, have a discussion about any disadvantages to living together in groups. Record ideas in a “Disadvantages” column.

Animal	Group Name	Group Size	Advantages Data from our book	Disadvantages What we like
Elephant	Herd	up to 30	stand a warning	could be heavy on others
Monkey			form a circle to protect each other	in a circle you can't see what's behind you
			find food together	have to share
			take care of each other	might not all do it the same
			keep info from predators	

Class Data Table Example

Part 3

INVESTIGATION ANALYSIS AND DEVELOPMENT OF CLAIM



Secondary Knowledge

Students organize the data from their class example.

- Model for students how to organize their data. Using the class chart created from the book, *Animals that Live in Groups* by Kelsi Turner Tjernagel, have students identify common groups/ categories to sort the advantages within. Examples could include food, reproduction, protection, habitat, etc.
- Then, have students analyze their data within their groups.

Animal	Group Name	Group Size	Advantages Data from our Book	Disadvantages What are they?
Elephant	herd	a few to a million	Several together can defend against predators, work together to find food, and help each other when in trouble.	
Wolf	pack	10-20	Wolves work together to hunt and protect their young.	
Starling	flock	hundreds	Some starlings to find a safe nesting place.	
Meerkat	clan	10-20	Meerkats work together to find food and protect their young.	
Ant	colony	thousands	Ants work together to find food and protect their young.	

Key to Colors Used to Sort Data

Color	Category
Blue	Food
Green	Protection
Yellow	Habitat
Orange	Reproduction
Pink	Other

Organized Data Example



Data Analysis

Students make sense of their data by organizing it and representing it visually.

Have students analyze their data. They may wish to use the [Data Analysis](#) prompt as a guide.

- Have students **evaluate** their data for trustworthiness. Ask students: *Are you confident in your data? Is there any data you wonder about?*
- Then, have them analyze their data to find patterns and trends. Have students **organize** the data similar to the class example (food, protection, habitat, reproduction, etc.). Students can highlight and sort within their data table or they may choose to cut out their data in strips and organize on chart paper.
- Students may also choose to **represent** their data using a bar chart or line graph.
- Have students **interpret** what the identified patterns or trends mean.
- Ensure they have enough data that it can be used as evidence to support a claim.



Secondary Knowledge

Students use secondary sources to help understand why some animals live in groups.

Provide resources for your students that include additional information on how the advantages of some animals living in groups outweigh the disadvantages. Possible resources include:

[Why Live in Groups](#)

[Why do animals do what they do?](#)



Explanation

Students write a claim and provide evidence and reasoning to support it.

- Have students use what they've discovered from their analyzed data to write an explanation that answers their investigation question. Students may wish to use the [Explanation](#) prompt as a guide. Have them write their explanation in their journal.
- Have students develop a **Claim** to answer the question: How does living together in a _____ help _____ survive?
- Then, have them add **Evidence** (the analyzed data) to support their claim.
- Finally, have them add **Reasoning** to their claim. Reasoning should include the information obtained from this investigation as well as science principles they have learned.

Claim

We claim that living in a colony helps ants survive because colonies provide greater protection from predators and assist in the collection of food.

Evidence

We found that ants work to protect each other in groups by defending their homes from attackers, swarming to protect the nest, blocking the entrance to the nest from intruders, and using smells and sounds to warn of danger. We also found that ants work together to collect food by catching prey in teams and leaving a scent trail for food.

Reasoning

Investigation: We followed the investigation plan carefully. We used the book provided and compared our data with data from a group studying a different animal.

Science: We learned from our class discussions and readings that although there are disadvantages to living in groups (greater competition for food, mates, water, shelter, etc.), there are advantages for some animals to live in groups. Some of the advantages for animals living in groups are working together to gather food, sleeping together to keep warm, sharing information, and protection from predators.

- Once the explanation is written, have students discuss their results using a [Present and Defend](#).

DISCOURSE

Have students conduct a [Present and Defend](#) to develop presentation skills as well as audience participation. Research teams present a summary of their investigation to the class. The class analyzes the information presented and asks clarifying questions, challenges and/or supports the arguments made, and even presents alternative explanations as appropriate. Research teams defend their explanation with evidence and reasoning.



Evaluation

Students reflect on the investigation.

Ask students:

- Were there any animals that surprised you?
- What question would you like to investigate next?

Part 4

INVESTIGATION ASSESSMENT AND EXTENSION



Application

Students demonstrate understanding of the advantages of animals in groups by participating in a field trip to a local zoo.

Have students participate in a field trip (virtual or live) to a zoo. While exploring, have students identify animals that live in groups (in the wild) and how that helps them survive. Then, have students discuss why animals in groups are not usually found at the zoo.

Assessment

Evaluate how well students:

- identify types of animals that form or live in groups of varying sizes.
- construct an explanation (**claim**, **evidence**, and **reasoning**) describing how animals work together to help group members survive.

Take This Lesson Across the Curriculum

Picnic Time!

You and your family are enjoying a picnic at the park. You notice that you have set your blanket near a colony of ants. Use what you learned about animals living in groups to avoid your picnic being overrun by ants.

Reading/Language Arts	Math	Science	Social Studies
<p>Follow Me</p> <p>Write instructions for your family to avoid unwanted guests at the picnic.</p> <p>CCSS.ELA-LITERACY.W.3.2</p>	<p>Marching Ants!</p> <p>The ants heading toward your blanket are in 3 rows of 25 ants each. How many ants will be joining your picnic?</p> <p>CCSS.MATH.CONTENT.3.OA.C.7</p>	<p>Animals in Groups</p> <p>Learn how living in colonies helps ants survive.</p> <p>NGSS: 3-LS2-1</p>	<p>Dinner Out?</p> <p>Determine if skipping the picnic and having dinner at a local restaurant is a good option for your family.</p> <p>NCSS: D2.Eco.1.3-5</p>

Safari Adventure

You and your family are planning an African safari vacation. Use what you have learned about animals living in groups to help plan this adventure.

Reading/Language Arts	Math	Science	Social Studies
<p>Read for Ideas</p> <p>Share your knowledge of animal groups with your family. Show them pictures of what animal groups they will see on the safari and what these animal groups are called.</p> <p>CCSS.ELA-LITERACY.SL.3.4</p>	<p>Water Please</p> <p>You will be on the safari for 7 days and the African desert is hot. You will need to make sure your family has enough water. If everyone should drink 5 12oz water bottles a day, how many water bottles will you need?</p> <p>CCSS.MATH.CONTENT.4.NBT.A.2</p>	<p>Animals in Groups</p> <p>Learn how living in groups helps animals survive.</p> <p>NGSS: 3-LS2-1</p>	<p>Mapquest</p> <p>Construct a map of your safari adventure to share with your family.</p> <p>NCSS: D2.Geo.1.3-5</p>

For additional lessons or to customize this lesson, go to www.nexgeninquiry.org.

OBSERVATION FORM

ANIMALS IN GROUPS

NAME: _____

DATE: _____

Name of Animal _____

Name of Group _____

Number of Animals in a Group _____

Advantages (Data from book)	Disadvantages (What we infer)