

THINKING AND ACTING  
LIKE A  
SCIENTIST

TEACHER'S GUIDE

**The Apple Doesn't  
Fall Far from the Tree**

How are young animals and their parents alike  
and different?

GRADE 1

Life Science





# The Apple Doesn't Fall Far from the Tree

<b>Grade Level/Content</b>	1/Life Science
<b>Lesson Summary</b>	In this lesson, students will learn how young animals are alike and different from their parents.
<b>Estimated Time</b>	2, 45-minute class periods
<b>Materials (per team)</b>	photographs of at least 4 young animals and their parents (e.g., polar bear, langur monkey, orca, kangaroo), KWL chart, <a href="#">Investigation Plan</a> , <a href="#">Observation Form</a> , journal
<b>Secondary Resources</b>	Hickman, Pamela, and Pat Stephens. <a href="#">Animals and Their Young: How Animals Produce and Care for Their Babies (Animal Behavior)</a> . Toronto: Kids Can Press, 2003. (paperback) Judge, Lita. <a href="#">Born in the Wild: Baby Mammals and Their Parents</a> . New York: Roaring Brook Press, 2014. <a href="#">Animal Parents and Kids that Look Totally Alike</a> (YouTube video for students) <a href="#">Baby Animals Who Grow Up to Look Totally Different</a> (YouTube video for students)
<b>NGSS Connection</b>	<b>1-LS3-1</b> Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>Students will understand that young animals have similarities to their parents.</li> <li>Students will provide evidence that supports the rationale that young animals are like, but not exactly like, their parents.</li> </ul>
<b>Cross-Curricular Project Connections</b>	Animal Offspring, Human Growth

## How are young animals and their parents alike and different?

Plants and animals begin as young and grow into adults. Most of the time, these young animals and plants look like their parents. In some situations, they do not; however, even when young look like their adults there are still some differences among them. In this lesson, students will observe different young animals and their parents. They will learn that young plants and animals are like, but not exactly like, their parents.

**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

Students will need the following:

- Polar bear photograph of adult and offspring
- Langur monkey photograph of adult and offspring
- Orca photograph of adult and offspring
- Kangaroo photograph of adult and offspring
- [Investigation Plan](#) (one per table)
- [Observation Form](#) (one per group for each pair of animals)
- Journal

# Part 2

## INVESTIGATION FACILITATION



### Question

*Introduce the investigation question.*

**How are young animals and their parents alike and different?**

### STUDENT ENGAGEMENT

Ask students to draw their favorite animal as parent and a baby. Ask students to think about how the baby is able to survive. Discuss some ways the young tell their parents they need something (chirping, crying, etc.). Have students role-play parent/offspring communication.



### Personal Knowledge

*Students capture what they already know about young animals and their parents.*

- Find out what students already know about young animals and their parents.
- Draw a *KWL Chart* on the board or provide one on chart paper. Have students look at the *KWL Chart*. Ask for their help with filling out the first column (what they already know).
- Next, ask students for their help filling out the second column (what they want to learn).
- Explain to students that they will revisit the chart at the end of the lesson to see if their questions have been answered.

### COLLABORATION

Arrange students in small groups at desks or tables. Have each student draw their favorite animal as an adult and a baby. Then, have them pass their drawing to the right. Students see what animal their teammate has chosen and add something about how the young of that animal and its parents are alike or different. Continue passing until the paper returns to its owner. Ask students to read what their teammates wrote. Did they learn something they did not already know? Is there something about their animal and its parent they would like to add? As students add their ideas to each animal page, point out that they are working together and sharing ideas. Collaboration provides a richer learning environment for students. They hear and learn to accept the ideas of others, making a whole that is better than each part alone.



## Secondary Knowledge

Students learn vocabulary associated with animal parents and offspring.

- Play the YouTube video: [Animal Parents and Kids that Look Totally Alike](#) to engage students with images of animal babies and parents that look alike.
- Make sure students understand key vocabulary they will need to complete the investigation:
  - *Offspring*: a plant or animal's child or children
  - *Observe*: using your senses to notice everything you can about something
  - *Different*: not the same as something
  - *Alike*: basically the same as something
  - *Similar*: nearly the same as something
  - *Identical*: exactly the same as something

1  
2  
3

## Investigation Plan

Students observe materials to find the similarities and differences between parents and offspring.

- Display the photographs of adult animals and their young. Place pairs of photos at different tables along with the [Investigation Plan](#) and enough copies of the [Observation Form](#) for each group.
- Divide students into table groups and review the **Investigation Plan** with them. Students should observe the photos and record what is the same and different between the parent and offspring. Remind students that this is a group activity, and all group members need to be active participants. They should record their findings on the **Observation Form**.

**INVESTIGATION PLAN**  
**THE APPLE DOESN'T FALL FAR FROM THE TREE**

1. Look at the pictures of the parent animals and offspring.
2. Talk with your group:
  - a. What is alike about the parent and offspring?
  - b. What is different?
3. Write the things that are alike and different on the **Observation Form**.
4. Move to the next pair of photos and repeat steps 1-3.
5. Join with another team to share your observations.

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Investigation Plan

**OBSERVATION FORM**  
**THE APPLE DOESN'T FALL FAR FROM THE TREE**

NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_

Animal Parent and Offspring: \_\_\_\_\_

Alike	Different

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Observation Form

- Give students a few minutes to make their observations. Then, have them rotate to another table. They should use a new **Observation Form** for each pair of animals. Continue until all students have observed all the animals.
- Then, have students join with another team to compare and combine observations.

### CRITICAL THINKING

Use the [Fair Test](#) checklist to help students think critically about the investigation plan. Help them understand that a good investigation plan must include a test that is repeatable, generates quality data, and minimizes error. The more critically students think about their investigation plan, the more confident they can be in their results.



## Observation

Students record their observations about animal young and their parents.

- Using the **Observation Form**, have students observe and record the name of their animals along with their thoughts on how the animal young and its parent are the same and different.
- Guide students as they make their observations. They should notice many similarities (*size and shape of body parts, color and/or type of any hair*) and some differences (*patterns in fur*).



## 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.
- Then, have them analyze their data to find patterns and trends. They may organize the data and/or represent it visually to construct meaning. Have them use math as appropriate, for example to add the number of things that are the same and the number of things that are different.
- Have students interpret what the identified patterns mean. Are there more similarities or more differences between the parents and offspring? Are there patterns of similarity and differences in features between parents and offspring?
- Ensure students have enough data that it can be used as evidence to support a claim.



## Secondary Knowledge

*Students use secondary sources to help learn more about how young animals are alike and different from their parents.*

- Use these resources (or your own) to help develop students' understanding of how young animals are alike and different from their parents.

Hickman, Pamela, and Pat Stephens. [Animals and Their Young: How Animals Produce and Care for Their Babies \(Animal Behavior\)](#). Toronto: Kids Can Press, 2003. (paperback)

Judge, Lita. [Born in the Wild: Baby Mammals and Their Parents](#). New York: Roaring Brook Press, 2014.  
[Baby Animals Who Grow Up to Look Totally Different](#) (YouTube video for students)

After reviewing the books and videos, students should glean the idea that young animals are like, but not exactly like, their parents.

- Revisit the *KWL Chart*, and add any new learning to the chart.

### PERSEVERANCE AND CURIOSITY

Use this secondary knowledge during and after the investigation as appropriate. If students had success using their photographs to discover ways young animals are alike and different from their parents, then introduce the resources after the investigation to satisfy their curiosity about different animals. If the students struggled with using the photographs to observe how young animals are alike and different from their parents, use these resources during the investigation to encourage persistence.

### RICH LANGUAGE

Have students use specific and varied language to describe their observations. Help them learn when to use *same*, *different*, *similar*, *identical*.



## Explanation

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

- Have students use what they've discovered from the 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 review the investigation question: How are young animals and their parents alike and different?
- Have students develop a **claim** to answer the Investigation Question.
- Then, have them write down the **evidence** that supports 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

*Young animals usually look very similar to their parents. They are mostly the same, but not identical.*

### Evidence

*A polar bear looks like its parent. Both have four legs and a triangle-shaped head. They are a little bit different. The parent's eyes are a little farther apart than the offspring. A langur monkey parent and offspring are also very similar. They both have four legs and a tail. They both have the same type of hands. But they are different colors.*

### Reasoning

*Investigation: We looked at pictures of polar bears, langur monkeys, kangaroos, and orcas. We found ways the young animals were like their parents and ways they were different. There were more ways that they were alike than different.*

*Science: We learned from our readings and video that most offspring of animals look much like their parents because they have features from both parents. In the same way, I have things about me that are like my parents and different from my parents.*

- 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. If students are doing the same investigation plan, choose 1 or 2 groups to share.



## Evaluation

*Students reflect on the investigation.*

Have students discuss:

- What surprised me?
- How confident am I in my results?

# Part 4

## INVESTIGATION ASSESSMENT AND EXTENSION



### Application

*Students demonstrate understanding of how animal young and adults are alike and different by using what they have learned in multiple contexts.*

#### Assessment

Evaluate student explanations for how well they provide evidence that supports the rationale that young plants and animals are like, but not exactly like, their parents.

#### Extension

- Have students compare things about them that are alike and different from each parent.
- Explain that plants can have offspring, too. Repeat this investigation with photographs of young plants and their parent plants.

## Take This Lesson Across the Curriculum

### Animal Offspring

Students show an understanding of how parents help their offspring.

Reading/Language Arts	Math	Science	Social Studies
<p><b>Follow Me</b></p> <p>Read <i>National Geographic Readers: Follow Me (National Geographic Kids: Level 1)</i> and discuss how parents help their offspring.</p> <p>ELA-LITERACY.R.L.1.</p>	<p><b>Count the Ways</b></p> <p>Students will use ordinal numbers for steps as they create a written account of their investigation.</p> <p>CCSS.MATH.CONTENT.1.NBT.B.2</p>	<p><b>Animal Concept Map</b></p> <p>Students use their knowledge of how adult animals help their offspring by creating a concept map on a chosen animal.</p> <p>NGSS: 1-LS1-1</p>	<p><b>Globe Trotting</b></p> <p>Students will make a two-dimensional globe to identify the places the student's chosen animals live and grow.</p> <p>NCSS: D2.Geo.2.K-2</p>

### Human Growth

Students will identify how human babies are alike and different from adults.

Reading/Language Arts	Math	Science	Social Studies
<p><b>How Humans Change</b></p> <p>Students write a short summary of how human babies are alike and different from adults.</p> <p>CCSS.ELA-LITERACY.W.1.2</p>	<p><b>Measuring Height</b></p> <p>Students will help create a data chart of various human heights by measuring the height of classmates and teachers.</p> <p>CCSS.MATH.CONTENT.1.MD.A.2</p>	<p><b>Animal Parts</b></p> <p>Students use their knowledge of human growth and development to complete a Venn diagram on young and adults. Students should include aspects such as personalities, appearance, etc.</p> <p>NGSS: 1-LS1-1</p>	<p><b>Where Are We From?</b></p> <p>Students use a map to help locate where they each were born.</p> <p>NCSS: D2.Geo.2.K-2</p>

For additional lessons or to customize this lesson, go to [www.nexgeninquiry.org](http://www.nexgeninquiry.org).



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## INVESTIGATION PLAN

# THE APPLE DOESN'T FALL FAR FROM THE TREE

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2. Talk with your group:
  - a. What is alike about the parent and offspring?
  - b. What is different?
3. Write the things that are alike and different on the **Observation Form**.
4. Move to the next pair of photos and repeat steps 1–3.
5. Join with another team to share your observations.

OBSERVATION FORM

**THE APPLE DOESN'T FALL  
FAR FROM THE TREE**

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

Animal Parent and Offspring: \_\_\_\_\_

<b>Alike</b>	<b>Different</b>