

THINKING AND ACTING
LIKE A
SCIENTIST

TEACHER'S GUIDE

What Animals Need

What do different animals need to live and grow?

GRADE K

Life Science





What Animals Need

Grade Level/ Content	K/Life Science
Lesson Summary	In this lesson, students will discover what different animals eat and categorize animals into herbivores, carnivores, and omnivores.
Estimated Time	1, 45-minute class period
Materials	Markers, chart paper, Fact Cards , Observation Form , journal
Secondary Resources	<ul style="list-style-type: none">• PBS What Do Animals Eat (1:10)• What do Black Bears Eat (1:33)• What Animals Eat, by Cheryl Ryan• Herbivore, Carnivore, Omnivore Song (4:13)
NGSS Connection	K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.
Learning Objectives	<ul style="list-style-type: none">• Students will make observations to determine that all animals need food and water to live and grow.• Students will analyze data to determine that some animals eat plants, some animals eat other animals, and some animals eat both plants and animals.
Cross-Curricular Project Connections	Zoo for You, No More Bananas!

What do different animals need to live and grow?

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. It's important for students to understand that all animals need food and water to survive so they can take an active part in caring for not only household pets, but for the larger world of animals that share the planet with us.

Students will learn a variety of ways to classify animals, but they'll start with thinking about what animals eat. In this lesson, they select animals they are interested in, learn what those animals eat, and then classify them into groups that eat plants only, animals only, and both. This establishes a basic understanding that all living things need energy to survive and that we get that energy from food.

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

You will need the following for this investigation:

- Markers
- Chart paper
- [Fact Cards](#)
- [Observation Form](#)
- Journal

Part 2

INVESTIGATION FACILITATION



Question

Introduce the investigation question.

What do different animals need to live and grow?

STUDENT ENGAGEMENT

Try to bring an animal into the classroom for a feeding. Put out two different types of food and have students observe which food the animal eats. For example, you could offer a frog a carrot and a cricket. Ask students to think about all the different kinds of animals there are and whether or not they eat the same types of foods. Show the [PBS What Do Animals Eat?](#) video. Then, introduce the investigation question.



Personal Knowledge

Students capture what they already know about what animals need.

- Find out what students already know about what animals need.
- Write “What Animals Need to Live and Grow” on the board.
- Ask students to think about what animals need in order to live and grow. They can draw or write their ideas on a sticky note and put the sticky notes up on the board.
- Review the ideas shared. (Hopefully, several students listed “food” and “water” as something animals need. If not, guide them by asking what we as humans need in order to survive.)
- Affirm that all animals need food and water to live and grow, but ask whether all animals eat the same things. Explain that in this lesson, they will discover what different animals eat.

OPENNESS TO NEW IDEAS

Students may list many things they think animals need in order to live and grow. Encourage them to distinguish between what an animal might want and what it needs.

Investigation Plan

Students conduct an investigation to discover what specific animals eat.

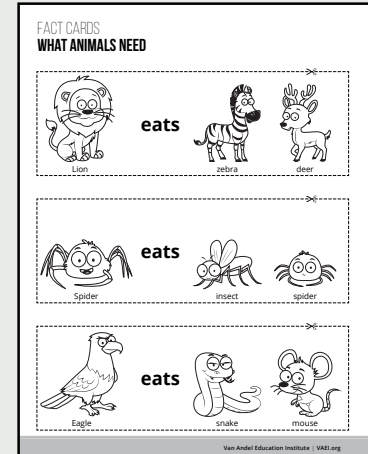
- Divide the class into groups based on their interest in one of these nine animals (or another animal of your choice if using your own fact cards/resources): lion, spider, eagle, deer, giraffe, panda, black bear, monkey, human.
- Give each group the **Fact Card** for their chosen animal and an **Observation Form**.
- Also give the group any books or other resources about the animal they are studying.
- Students should look at their fact card and decide if the things their animal eats are plants or animals.

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.

INTEGRITY

Each group is conducting its own research by studying the fact card and other resources. Explain that scientists collect data by observation when possible, and by research when observation is not possible.



Fact Cards

The image shows an observation form titled 'OBSERVATION FORM WHAT ANIMALS NEED'. It has a header with 'NAME' and 'DATE' fields. Below the header, it says 'My animal: _____ eats...'. The form is divided into two sections: 'Plants' and 'Animals', each with a large empty box for recording data. At the bottom right, there is a small logo for Van Andel Education Institute.

Observation Form



Observation

Students record their observations as they decide whether their animal eats plants, animals, or both.

- Once students decide if the things their animal eats are plants or animals, they should record this as data on the **Observation Form**.
- For example, if they are studying a black bear, they should put the berries under the "Plant" section of the **Observation Form** and the insect under the "Animal" section.
- You may have them cut and paste from their **Fact Card** or draw on the **Observation Form**.

CONSTRUCTION OF MEANING

If students aren't sure if something is a plant or an animal, encourage them to discuss as a group. Remind them that plants get energy directly from the sun. Animals have to eat to get their energy.



Data Analysis

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

As a class, **organize** the data from the different groups to determine which animals eat plants, which eat other animals, and which eat both. You may wish to use the [Data Analysis](#) prompt as a guide.

- Create a class chart with three sections: Plants, Animals, and Both.
- Ask each group to share what their animal eats and whether it eats plants, animals, or both.
- After each group shares, record the animal (name and illustration) in the appropriate section on the class chart to **represent** the data visually.
- Help students **interpret** their data. Ask students: *If your animal eats plants only, please stand.* Keep asking questions until students understand which animals eat plants, which eat animals, and which eat both. Encourage students to look at the class chart (the data) to confirm their answers.
- Ensure students have enough data that it can be used as evidence to support a claim.

RICH LANGUAGE

You may want to introduce the science terms for the kinds of animals that eat plants only (herbivores), animals only (carnivores), and both (omnivores).



Secondary Knowledge

Students learn that all animals need food and water to survive and that some animals eat plants, some eat animals, and others eat both.

- Use these resources to help students understand that all animals need food and water to live and grow and that some animals eat plants, some eat animals, and some eat both plants and animals.
 - [PBS What Do Animals Eat](#) (1:10)
 - [What do Black Bears Eat](#) (1:33)
 - [What Animals Eat](#), by Cheryl Ryan
 - [Herbivore, Carnivore, Omnivore Song](#) (4:13)

CURIOSITY

Encourage students to remain curious about what animals eat. Create a *Wonder Wall* in your classroom and write questions students are still curious about. Surrounding students with unanswered questions gives them practice at being curious. Save time at the end of the year by having students choose questions from the Wonder Wall that they would like to investigate.



Explanation

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

- Have students use what they've discovered from the analyzed data to develop an explanation that answers their investigation question. You may wish to use the [Explanation](#) prompt as a guide. Create the explanation as a Shared Writing activity.
- Have students review the investigation question: What do different animals need to live and grow?
- Develop a **Claim** to answer the investigation question.
- Then, have them provide 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

All animals need food and water to live and grow. Some animals eat plants. Some animals eat other animals. Some animals eat both plants and animals.

Evidence

We studied 6 animals. We learned what they eat.

The lion eats zebra and deer.

The spider eats insects and other spiders.

The deer eats grass and berries.

The panda eats leaves and bark.

The black bear eats insects and berries.

The human eats vegetables and meat.

Some of these foods are plants and some are animals.

Reasoning

Investigation: Our group studied a specific animal. Then, we shared what we learned with the class. We organized our data so we could see what each of our animals ate.

Science: The video and books explained that all animals need food and water to survive. They also showed that some animals eat plants (herbivores), some eat other animals (carnivores), and some eat both (omnivores).



Evaluation

Students reflect on the investigation.

Ask students:

- What other animals would you like to study?
- What surprised you in this investigation?

Part 4

INVESTIGATION ASSESSMENT AND EXTENSION



Application

Students demonstrate understanding of what animals need to live and grow.

- Purchase an animal for the class to take care of for the remainder of the year. Determine a feeding, watering, and cleaning schedule where all students participate in the care of the animal.

Assessment

Evaluate for how well:

- Students understand that all animals need food and water to live and grow.
- Students use evidence to explain that some animals eat plants, some animals eat other animals, and some animals eat both plants and animals.

Take This Lesson Across the Curriculum

Zoo for You!

You've been asked to design a zoo! What animals will be in your zoo? Where will they live? What will they eat?

Reading/Language Arts	Math	Science	Social Studies
<p>Rhyme Time</p> <p>Read <i>Put Me in the Zoo</i>, by Robert Lopshire. Emphasize the rhyming patterns.</p> <p>CCSS.ELA-LITERACY.RF.K.2.A</p>	<p>Animal Count</p> <p>How many of each type of animal will be in your zoo? Make a tally chart that accounts for all the animals in your zoo.</p> <p>CCSS.MATH.CONTENT.K.OA.A.1</p>	<p>What Animals Need</p> <p>Determine what food your animals will need and create a menu.</p> <p>NGSS: K-LS1-1</p>	<p>Zoo Rules</p> <p>A zoo will need rules to keep everyone safe. What are the rules for your zoo?</p> <p>NCSS: D2.Civ.12.K-2</p>

No More Bananas!

The banana-eating virus *Banana-be-gone* has taken over the rainforests! Banana trees are dying at an alarming rate. How will this affect you and your community? What can you do to prevent any long-lasting harm?

Reading/Language Arts	Math	Science	Social Studies
<p>Bananas and Me</p> <p>Conduct a dialogue as pairs about how your life would change if there were no bananas.</p> <p>CCSS.ELA-LITERACY.SL.K.1.A</p>	<p>10 Bananas</p> <p>We're down to the last 10 bananas. As you lose one more banana each day, identify how many are needed to bring it back to 10.</p> <p>CCSS.MATH.CONTENT.K.OA.A.4</p>	<p>What Animals Need</p> <p>Which animals will be affected by the banana shortage? What can they eat instead?</p> <p>NGSS: K-LS1-1</p>	<p>Who Gets Them?</p> <p>Things can get ugly when there are only a few bananas left. What is a fair way to decide who gets the last bananas?</p> <p>NCSS: D2.Eco.1.K-2</p>

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

OBSERVATION FORM
WHAT ANIMALS NEED

NAME: _____

DATE: _____

My animal: _____ eats...

Plants

Animals

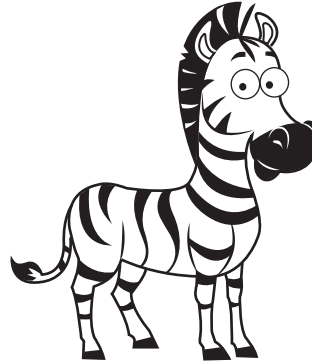
FACT CARDS

WHAT ANIMALS NEED

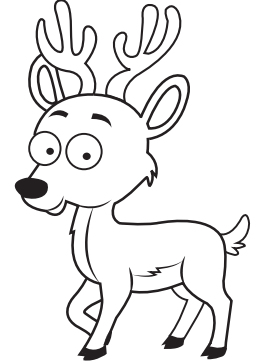


Lion

eats



zebra

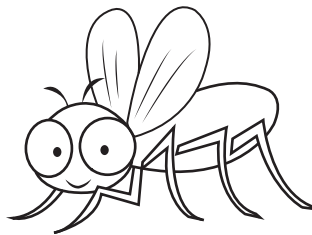


deer

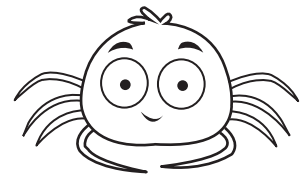


Spider

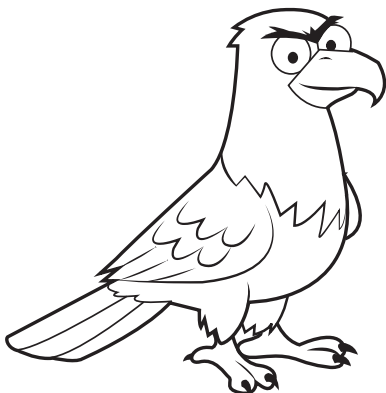
eats



insect



spider



Eagle

eats



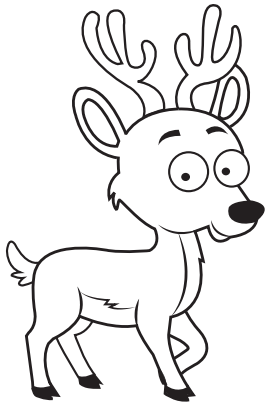
snake



mouse

FACT CARDS

WHAT ANIMALS NEED

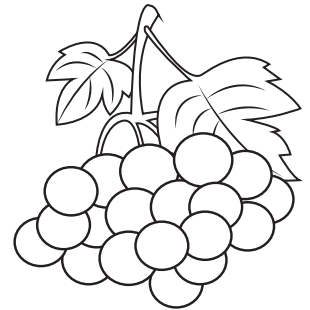


Deer

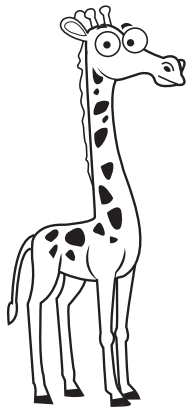
eats



grass

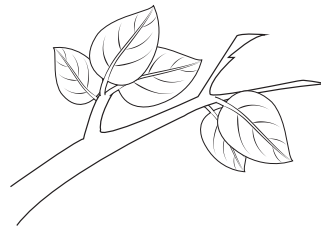


berries



giraffe

eats



leaf



grass

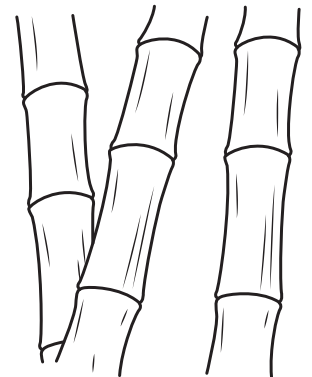


panda

eats



leaf



bark

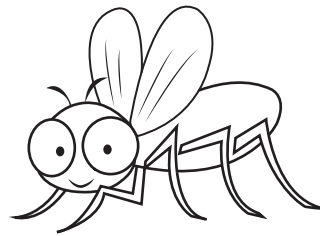
FACT CARDS

WHAT ANIMALS NEED

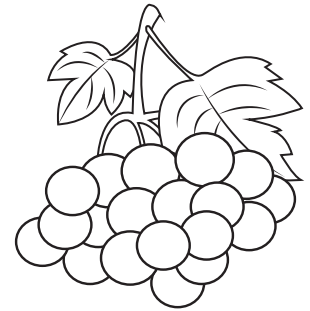


black bear

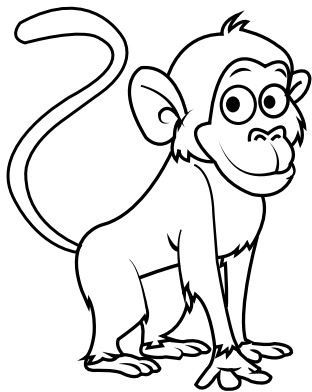
eats



insect

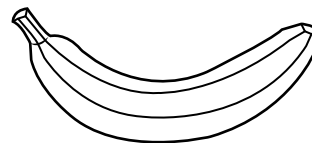


berries

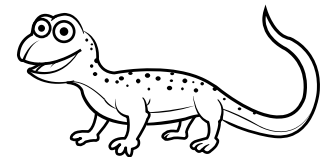


monkey

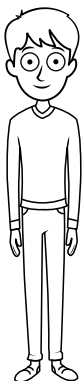
eats



fruit

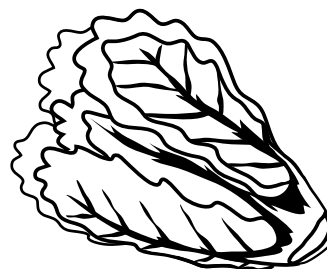


lizard



human

eats



vegetables



meat

