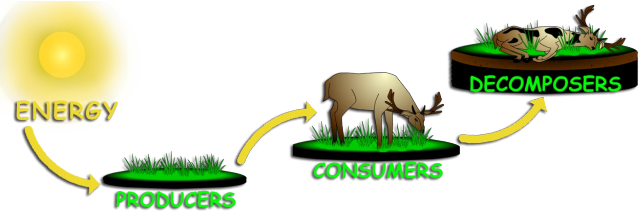



# Lesson 4: Consumers Get Energy From Other Living Things

Students explore how animals obtain and store energy, and draw conclusions about the interconnectedness of living things in the flow of energy.

**Main Lesson Concept:** All animals, including humans, are consumers that obtain food by eating other organisms. When organisms eat plants, their bodies break down the plant structures to produce the materials and energy they need to survive. Then they are consumed by other organisms.

**Scientific Question:** How do animals get their energy?

| Objectives | Standards |
|---|---|
| • Students will categorize living things based on subjective categories they feel are important.<br>• Students will make and analyze observations of their own energy levels and possible factors that cause changes in these levels.<br>• Students will diagram and explain an energy flow that includes humans and will describe the role of photosynthesis and aerobic respiration in this flow.<br>• Students will explain why other living things are important to human survival. | **Partially meets**:<br>2061: 5E (6-8) #1<br>NSES: C (5-8) 4.2<br><br>**Addresses**:<br>NSES: C (5-8) 4.3 |

| Assessment | Abstract of Lesson |
|---|---|
| Classifying Living Things categories, Energy Level observations and Flow of Energy diagram and explanation in Astro Journal. | Students categorize living things into subjective categories of their choice and then into categories based on how living things get their food. They investigate how animals get energy by observing their own energy levels over 24 hours and drawing conclusions about what might have affected changes in their energy levels. Students discuss how animals get and store energy and the chemical equation of aerobic respiration used in this process. Finally, students diagram and explain an energy flow that includes humans. |

| Prerequisite Concepts | Major Concepts |
|---|---|
| • Plants use the energy in light to make sugars out of carbon dioxide and water. Oxygen is released in this process. (Biology Lesson 3)<br><br>• One of the most general distinctions among organisms is between plants, which use sunlight to make their own food, and animals, which consume energy-rich foods. (2061: 5A (6-8) #1) | • All animals must eat other living things to get their energy and building materials, since they cannot produce their own food, as plants (and other producers) do.<br>• Animals eat plants or other animals to get this energy.<br>• Animals and plants use oxygen to release energy from sugars.<br>• Water and carbon dioxide are by-products of this chemical reaction, called aerobic respiration.<br>• Animals are themselves consumed by other living things, continuing the flow of energy.<br>• Sugars provide immediate fuel to move and to grow. Sugars are also used as chemical building materials for living things. Sugars can be stored in the body for later use. |

## Suggested Timeline (45-minute periods):

Day 1: Engage and Explore sections
Day 2: Explain and Extend Part 1 sections
Day 3: Extend Part 2 and Evaluate sections

## Materials and Equipment:

- A class set of Astro Journal Lesson 4
- Biology Training Nature Picture (as an overhead transparency or printout) or other picture of a nature scene containing a variety of living organisms
- Energy Flow Diagram (as an overhead transparency or printout)
- 1 small mirror for each group
- Chart paper

## Preparation:

- Duplicate a class set of Astro Journals.
- Print out or make overhead transparencies of the Biology Training Nature Picture and Biology Training Energy Flow Diagram.
- Prepare chart paper with major concept of the lesson to post at the end of the lesson.

## Differentiation:

### Accommodations

For students who may have special needs:

- Have them work with a partner on the Astro Journal writing or report orally to the teacher.
- Provide students with cutouts of different living things to put into categories and to make their flow of energy.

### Advanced Extensions

Have students conduct research on the categories of consumers. Then have the students categorize animals based on the new information they learned.

## Engage (approximately 30 minutes)

**1. Introduce students to the Classifying Living Things Activity.**

- Draw on students' prior knowledge of how living things might be categorized.
- Show students a picture of a nature scene that contains a variety of living organisms.
  Note to Teacher: Use the Biology Training Nature Picture included at the end of this lesson, or you can use a picture/poster you have in your classroom.

- Ask the students to carefully observe the picture.

- In their Astro-Journals, have the students record the names or descriptions of all the living things that they see in the picture.

- Have the students share and discuss their observations with a partner.

- Question: What living things did you observe in this picture?
- *Answer: (Allow students to share their answers. Record student responses on the board and be sure to point out or have a student point out each living organism that is identified or described. Encourage students to add to their list of living things as they listen to other students in the class share their observations.)*

- Ask the students to work with their partner to categorize their list of living things in their Astro Journals. Discuss with the students that they should use categories that are not opinion-based. For example, "cute animals" or "ugly animals" are categories based on opinion. "Large living things" and "small living things" are also based on opinion. If students want to classify by size, guide them to define the categories by approximate measurements, such as "less than 1 meter long," "1 to 2 meters long," and "over 2 meters long."

**2. Have the students share how they categorized the living things on their list.**

- Question: Do you think that each pair of students in the class used the same categories? Explain your answer.
- *Answer: No, each pair of students developed their own categories based on the properties that they thought were important.*

- Question: What important properties did you use for your categories?
- *Answer: (Allow students to share their ideas. Student responses may include properties such as whether the living thing was a plant or animal, what the living thing ate, where the living thing lived, how the living thing moved, or what role the living thing had in the environment.)*

**MISCONCEPTION:** Students hold more restricted meanings than biologists. Usually they classify animals by vertebrate, number of legs, body covering, etc. Discuss with students other ways that they could categorize animals based on life functions such as what they eat, how they give birth, or where they live. Help students understand why it might be helpful for scientists to categorize animals in these ways.

- Question: How would you categorize the living things on the list if you were asked to place them in groups based on how they get their energy?

- Have the students discuss with their partner how they would categorize the living things on the list based on how they get their energy. Have students record these ideas in their Astro Journals.

- Have the students share their ideas on how they would categorize the list based on how the living things get their energy. Students will most likely respond that the living things can be grouped into animals and plants.

  Note to Teacher: There may be other living things represented in the picture besides just plants and animals. If fungi or bacteria are represented, you could ask students to research how these living things get energy. Most fungi are decomposers, but some fungi, like yeast, are consumers. Bacteria can be consumers, producers, or decomposers.

**3. Review photosynthesis information from Biology Lesson 3.**

- Question: How are plants different from animals?
- *Answer: Plants are different from animals because plants use the energy in sunlight to make food, while animals eat food.*

- Question: What other things, besides energy from sunlight, do plants need to make food?
- *Answer: Plants also need water and carbon dioxide to make food.*

- Question: What do plants produce as they go through the process of making food?
- *Answer: Plants produce sugars and oxygen.*

- Question: What do plants do with the sugars?
- *Answer: Plants use sugar to function (i.e., to grow and reproduce). They also store the sugars for later use.*

- Question: What do plants do with the oxygen?
- *Answer: Plants release oxygen into the atmosphere. Then the oxygen is used by the plants and other organisms for survival.*

**4. Introduce the purpose of the lesson and the scientific question.**

- Say: In Biology Lesson 3, we learned how plants make their own food. We know that animals cannot make their own food, so in this lesson our focus will be to understand how animals and other consumers get their energy from eating other living things.

- Say: The scientific question we will be exploring is:
  - How do animals get their energy?

## Explore (approximately 15 minutes)

**1. Introduce students to the Energy Level Activity.**

- Question: How would you describe your energy level right now?
- *Answer: (Allow students to share their responses.)*

- Question: What types of activities affect your energy level?
- *Answer: (Accept all reasonable answers. Students may respond that their energy level is affected by how much sleep they have had, by how much physical activity they have done, and by the foods they have eaten.)*

- Say: Over the next 24 hours, you are going to record any changes in your energy level and what may have affected your change in energy level.

**2. Explain the instructions for the Energy Level Activity.**

- Have students look at the data chart in their Astro Journal.

- Question: Do we have an instrument in the classroom to measure your energy level? Explain your answer.
- *Answer: No. We do not have an instrument in the classroom to measure energy level.*

- Question: If we do not have a way to measure your energy level, what information will we record in the data chart in your Astro Journal?
- *Answer: (Allow students to share their ideas. Students may respond that you can record observations about your energy level.)*

- Question: What types of observations could you make about your energy level?
- *Answer: (Student answers will vary. Observations may include that you have a high amount of energy, that you are tired, or that you feel like you have an average amount of energy.)*

- Have students note the date and current time in the first column in the chart.

- In the second column of the data chart, have students record if their energy level is high, average, or low. Encourage students to add in additional descriptions about their energy levels.

- Have the students record information on activities that may have affected their energy level in the "Activities" column. Activities that may have an effect on energy level are eating a meal or snack, recent physical activity, or any change in the student's environment (e.g., changing classes, completing a group activity instead of sitting and taking notes, not having homework that night, or finding out they have a test the next day).

- Say: Over the next 24 hours, I would like you to record any change in your energy level on this data chart. Be sure to note the time, a description of your energy level, and what you were doing at the time that may have caused this change in your energy level.
  Note to Teacher: If you are in a self-contained class, you may want to start this activity in the morning and provide times throughout the day when students can observe their energy level and record it.

## Explain (approximately 30 minutes)

1. **Have students complete the Results and Conclusions section in their Astro Journal.**

2. **Discuss with students their conclusions from the Energy Level Activity.**
   - Say: Look over the data you gathered during the past 24 hours.

   - Question: What conclusions can you draw from the data?
   - *Answer: (Allow students to share their ideas.)*

   - Question: When was your energy level the highest?
   - *Answer: (Accept all reasonable answers. Students may respond that their energy level was highest in the morning or after eating lunch or dinner.)*

   - Question: When was your energy level the lowest?
   - *Answer: (Accept all reasonable answers. Students may respond that their energy was lowest near the end of the school day or at night.)*

   - Question: After completing this activity, do you think that certain activities raise your energy level? Do you think that certain activities lower your energy level?
   - *Answer: Yes, certain activities do raise your energy level, while other activities lower your energy level.*

   - Question: What type of activities raised your energy level? Or when was your energy level the highest?
   - *Answer: (Accept all reasonable answers. Students may respond that eating a meal or snack raised their energy level and that getting a good night's sleep made their energy level feel high in the morning.)*

   - Question: What type of activities lowered your energy level? Or when was your energy level the lowest?
   - *Answer: (Accept all reasonable answers. Students may respond that their energy level was the lowest right before they ate a meal or after physical activity.)*

3. **Use students' knowledge from the Energy Level Activity to explain how humans get energy.**
   - Say: Many of you found that food had an effect on your energy level. Look at your data chart and notice your energy level after eating a meal or snack.

   - Question: What type of effect did food have on your energy level?
   - *Answer: (Accept all reasonable answers. Student answers will vary. Many students may have noticed that they have more energy after eating a meal. Some students may respond that they feel tired shortly after eating a meal. If this response is shared, discuss with the students why they think is so. The sleepiness we feel after a meal is associated with a hormone that is released into the bloodstream to aid in digestion.)*

   - Question: Why do you think you have more energy after eating food?
   - *Answer: We get energy from food. Our bodies take in food and then break it down to produce energy.*

- Question: What types of food do you think give you the most energy?
- *Answer: (Accept all reasonable ideas. Student responses may vary on this question. Some students may respond that healthy foods such as vegetables or fruits supply our bodies with the most energy, while other students may respond that candy or beverages with caffeine supply our bodies with energy because they feel energized.)*
  Note to Teacher: If students respond that candy and beverages with caffeine supply energy, discuss with students how long this feeling of energy lasts. Students probably have experienced the feeling that they have a lot of energy shortly after eating these foods, but their energy level drops quickly not too long after.

- Question: Do we have to eat constantly to have energy all the time?
- *Answer: No, we do not have to eat constantly to have energy all the time.*

- Question: How long can you go without food?
- *Answer: (Allow students to share their responses.)*

- Say: Our bodies must have a way to store energy.

- Question: Where might our bodies store energy?
- *Answer: (Allow students to share their ideas. Some students may understand that energy can be stored as fat or sugars.)*

- Say: Our bodies are able to store energy from the food we eat as sugar in our liver and blood and also as fat for later use. This is why you have energy throughout the day.

**4. Discuss with students how animals get energy.**

- Say: We have focused our attention on ourselves—the animal we are most familiar with. Lets broaden our look and think about all animals.

- Say: Think back to the picture that we observed at the beginning of this lesson.

- Question: What animals were in the picture?
- *Answer: (Accept all correct answers.)*

- Explain to students that as a class they are going to trace the energy source through a food chain for a few different animals in the picture.

- Choose one animal from the picture to begin this activity with. Draw this animal or write the animal's name on the board.

- Question: What food does this animal eat?
- *Answer: (Accept all correct answers.)*

- Draw the food or write the name of the food that the animal eats on the board. Then draw an arrow from the food to the animal.

- Say: This arrow represents the energy that the animal gets from the food.

- Question: Where did the energy in the food come from?
- *Answer: (If the food is a plant, then the energy came from the sun. If the food is an animal, then the energy came from the food that the animal ate.)*

- Add to the diagram where the energy in the food came from. This will either be the sun or what the animal ate.
- Continue this diagram until you have reached the sun for energy.
- Repeat the steps above for a variety of living things in the picture.
- Question: What types of foods do animals eat?
- *Answer: (Accept all correct answers. Student responses should include that animals eat plants, animals, or both plants and animals.)*
- Question: Can you give an example of an animal that eats both plants and animals? Explain your answer.
- *Answer: Yes, humans are an example of an animal that eats both plants and animals. (Accept any correct answer.)*
- Question: Why do animals need to eat food?
- *Answer: Animals need to eat food to get energy for daily survival.*
- Question: What part of the food gives animals energy?
- *Answer: Sugar gives animals energy.*
- Question: Where did the sugars come from?
- *Answer: Plants made sugars from sunlight through photosynthesis. The animals got the sugars from the food they ate.*
- Question: Is sugar the only thing animals get from their food?
- *Answer: No, animals also get vitamins, proteins, and minerals that the body needs to make bones, tissues, etc.*

## Extend/Apply Part 1 - (approximately 15 minutes)

**1. Discuss with students photosynthesis and how it applies to consumers.**

- Say: Imagine that you have a salad for dinner.
- Question: Would the items in your salad be considered plant or animal?
- *Answer: The items in my salad would be considered plants.*
- Question: If the salad is made up of plants, what process do we know these plants went through?
- *Answer: We know that the plants went through photosynthesis.*
- Question: What substances do we know that plants produce during photosynthesis?
- *Answer: We know that plants produce sugars and oxygen.*
- Question: Where are the sugars that are produced during photosynthesis?
- *Answer: The sugars are in the plant.*
- Question: What happens to the oxygen that is produced during photosynthesis? Where does it go?
- *Answer: The oxygen is released into the atmosphere.*

- Question: When an animal eats plants, what is it eating?
- *Answer: (Accept all reasonable answers. Student responses may include that the animal is eating sugars, minerals, proteins, and vitamins.)*

- Question: What do you think an animal is eating when it eats other animals?
- *Answer: (Allow students to share their ideas. Students may respond that the animal is also eating sugars, minerals, proteins, and vitamins when it eats other animals.)*

- Question: What gas must animals breathe in?
- *Answer: Animals must breathe in oxygen.*

**2. Connect information from this lesson with photosynthesis information from Biology Lesson 3.**

- Question: In Biology Lesson 3, you learned the equation for photosynthesis. What is this equation?
- *Answer: The equation for photosynthesis in words is:*

  *water + carbon dioxide + solar energy → sugars + oxygen*

  *and in chemical symbols:*

  $6H_2O + 6CO_2 + \text{solar energy} \rightarrow C_6H_{12}O_6 + 6O_2$

  Note to Teacher: Write the photosynthesis equation on the board in words and in chemical symbols.

- Say: Just as we explored the chemical equation that plants use to make energy, we are going to explore the equation the animals and plants use to release and use that energy.

- Question: From where do animals get energy?
- *Answer: Animals get their energy from eating food.*

- Question: What did we learn that food is made of whether it is animal-based or plant-based food?
- *Answer: Food is made up of sugars.*

  Note to Teacher: Write the word "sugars" on the board.

- Question: What gas must animals breathe in?
- *Answer: Animals must breathe in oxygen.*

  Note to Teacher: Write "+ oxygen" next to where you wrote "sugars,"

- Question: When animals breathe out, what gas do they release?
- *Answer: Animals release carbon dioxide when they breathe out.*

  Note to Teacher: Draw an arrow after oxygen, and write "carbon dioxide" after the arrow.

- Give each group of students a small mirror. Ask students to place the mirror in front of their mouth and to breathe out with their mouth opened.

  Note to Teacher: If you do not have multiple small mirrors, the students can use their hands for this activity.

- Question: When you breathed out, what did you see on the mirror?
- *Answer: (Accept all reasonable answers. Students may respond that they saw moisture or water on the mirror.)*

- Question: How many of you have seen your breath when it is cold outside?
- *Answer: (Allow students to share their responses.)*

- Say: The reason you see your breath when it is cold outside is because you release a small amount of water when you breathe out.

  Note to Teacher: Write " + water" next to carbon dioxide.

- Question: What is released when an animal's body breaks down the sugars in food?
- *Answer: When the sugars in food are broken down, energy is released.*
  Note to Teacher: Write "+ energy" next to water.

- Question: Do you recall any of the chemical symbols for the substances written on the board?
- *Answer: (Allow students to share the chemical symbols that they recall. If students do not recall any of the symbols, provide them with this information. Sugar is $C_6H_{12}O_6$, oxygen is $O_2$, carbon dioxide is $CO_2$, and water is $H_2O$. Write the chemical symbols below each substance.)*

- Say: The reaction that animals and most other livings use to release and use energy is now written on the board. This reaction is called "aerobic respiration."

**MISCONCEPTION:** Students may look at the equation for photosynthesis and aerobic respiration and think that they are opposites or are reversible; however this is not the case. There are very complex chemical processes that are involved with each, and these steps are not reversible. Also, energy is lost during these processes. This could be explained to students using the metaphor of one-way streets. You might start at point A and travel to point B using one route, but are unable to go from Point B to point A using the reverse route, because the one-way streets are traveling in the wrong direction.

- Question: What is a by-product of the photosynthesis reaction?
- *Answer: Oxygen is a by-product of the photosynthesis reaction.*

- Question: What is the importance of oxygen in the aerobic respiration reaction?
- *Answer: Oxygen is used to release energy from sugars.*

- Question: Are there any by-products of the aerobic respiration reaction? If so, what are they?
- *Answer: Water and carbon dioxide are by-products of this reaction.*

- Question: Are water and carbon dioxide important to the process of photosynthesis? Explain your answer.
- *Answer: Yes, plants use water and carbon dioxide along with solar energy to make food.*

- Question: We've been talking about how animals use this process of aerobic respiration to release energy from food, but how do plants release energy from food, when they need to use it?
- *Answers: (Students may infer that plants use the same process to release energy from food.)*

- Say: Plants use the same process of aerobic respiration to release energy from the sugars they've produced, when they need energy to grow or move. They take in oxygen from the air for this purpose.

### 3. Discuss producers' impact on the atmosphere.

- Question: So, we've discussed that producers are important, because they are the only living things that can make food from sunlight. In this process of photosynthesis, what impact do producers have on the atmosphere?
- *Answer: They release oxygen, and they take in carbon dioxide.*

- Question: What do we know about the properties of carbon dioxide from the Atmospheric Science unit?
- *Answer: Carbon dioxide is a greenhouse gas. The sun's energy warms the Earth's surface. Then, carbon dioxide absorbs the energy radiated from Earth's surface and releases some of it back towards the Earth, increasing the surface temperature.*

- Question: So what effect might producers have on the Earth's surface temperature?
- *Answer: Because producers take in carbon dioxide, they help to regulate the amount of carbon dioxide in the atmosphere, helping to maintain a moderate temperature for human survival.*

## Extend/Apply Part 2 - (approximately 30 minutes)

1. **Lead students in the Flow of Energy Activity.**
   - Say: Today, you have learned how animals get their energy. In this activity, you are going to look at where the energy in the foods you eat comes from.
     Note to Teacher: Students will be drawing an energy flow diagram. It may be helpful to show them the Biology Training Energy Flow Diagram located at the end of this lesson.
   - Have students turn to this activity in their Astro Journals.
   - Say: Draw a picture of yourself in the center of the page. Draw the sun at the top of the page.
   - Say: Write or draw your favorite breakfast, lunch, or dinner food above where you drew yourself.
     Note to Teacher: Be sure students choose a food that is eaten for a meal. Otherwise, some students may choose candy as their favorite food.
   - Draw an arrow from the food to "you." This arrow represents energy because your body makes energy from this food.
     Note to Teacher: Help students understand why the arrow needs to be drawn from the food to them. Students often want to draw the arrow to the food. Explain to students that we are studying the flow of energy, and we need to focus on where the energy is coming from to determine where the arrow begins. In this case, the energy is coming from the food.
   - Have students discuss as a class or in small groups where the energy in their favorite food came from. Ask questions to help students with this discussion.
     Questions to help with the discussion:
     - Is your favorite food made from plants or animals, or both?
     - Where do plants get their energy?
     - Where do animals get their energy?
   - Have students add in drawings and arrows to represent where the energy for their favorite food came from.
     Note to Teacher: If time allows, have students add other foods that they like to eat to their energy flow diagram. Have the students repeat the steps above for each of the foods they add.
   - Have students add another animal besides a human to their drawing. Students should complete the flow of energy for this animal.
     Note to Teacher: It would be a good idea to suggest an animal that eats one of the foods already listed on the students' flow of energy diagram. This would allow students to see that energy flows in a web, not a chain.
   - Have students complete the Flow of Energy Activity questions in their Astro Journals.
     Note to Teacher: In Biology Lesson 5, students will add decomposers to the drawing from this activity.

## Evaluate (approximately 15 minutes)

1. **Discuss students' responses in their Astro Journals to ensure they have mastered the major concepts.**
   - Question: Where does the flow of energy start for each of the foods?
   - *Answer: The flow of energy starts with the sun.*

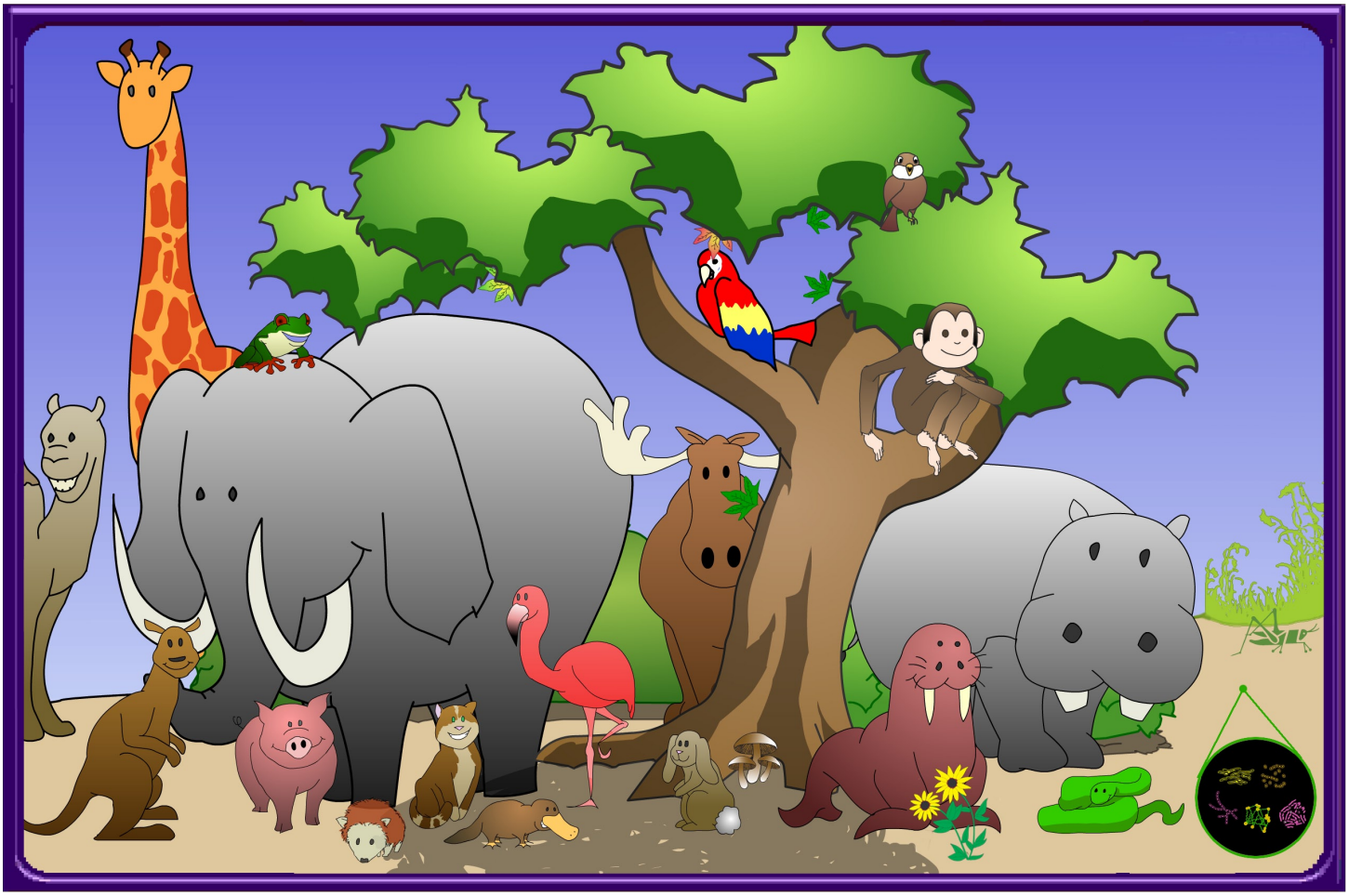
   - Question: Explain your energy flow diagram including information you have learned about photosynthesis and respiration.
   - *Answer: (Allow students to share their energy flow diagrams. Their explanations should include that producers use energy from the sun to go through the process of photosynthesis. Consumers eat plants or other animals. Through the process of aerobic respiration, the food that the consumers eat is broken down to provide them energy.)*

   - Question: How are other living things important to human survival?
   - *Answer: Living things are important to human survival because we eat plants and other animals to get energy. Producers provide sugars that we use to make energy and oxygen that we use to release the energy from sugars. They also take carbon dioxide in from the atmosphere, which keeps Earth's surface temperature comfortable for humans to live.*

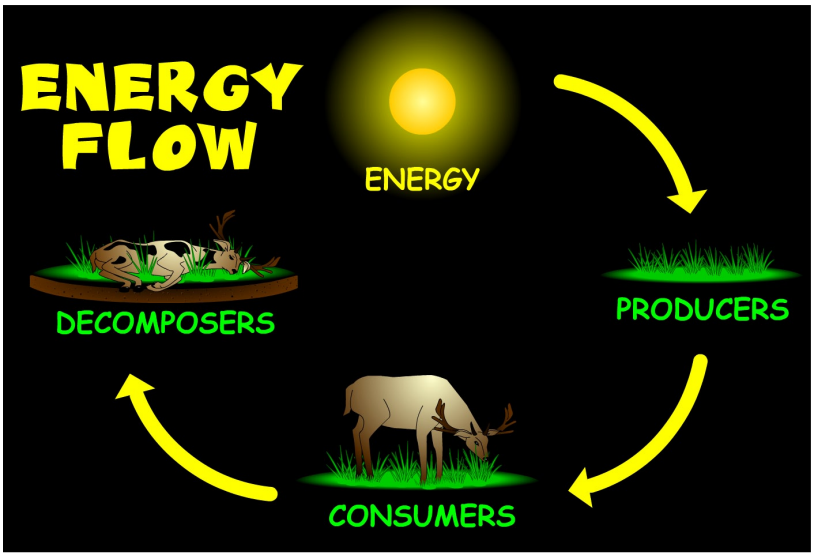
2. **Collect students' Astro Journals and evaluate them to ensure that they have mastered the major concepts:**
   - All animals must eat other living things to get their energy and building materials, since they cannot produce their own food, as plants (and other producers) do.
   - Animals eat plants or other animals to get this energy.
   - Animals and plants use oxygen to release energy from sugars.
   - Water and carbon dioxide are by-products of this chemical reaction, called aerobic respiration.
   - Animals are themselves consumed by other living things, continuing the flow of energy.
   - Sugars provide immediate fuel to move and to grow. Sugars are also used as chemical building materials for living things. Sugars can be stored in the body for later use.

3. **Bridge to next lesson.**
   - Say: Today, we learned how animals get their energy. In the next lesson, we will learn what happens to dead plants and animals.

   Note to Teacher: After each lesson, consider posting the main concept of the lesson some place in your classroom. As you move through the unit, you and the students can refer to the "conceptual flow" and reflect on the progression of the learning. This may be logistically difficult, but it is a powerful tool for building understanding.



*Biology Training Nature Picture.*




*Energy Flow Diagram.*

Astro Journal Biology Lesson 4:
Consumers Get Energy From Other LIving Things

Name:

Class/Period:

Date:

## Classifying Living Things Activity:

1. In the space below, record the names or descriptions of all the living things that you see in the picture.

2. Categorize the list of living things. Use categories that are not opinion-based.

3. Discuss with your partner how you would categorize the living things in number 1 based on how they get their energy. Record your ideas in the space below.

Astro Journal Biology Lesson 4:
Consumers Get Energy From Other LIving Things

Name:

Class/Period:

Date:

**Energy Level Activity:**

| Date and Time | Description of Energy Level | Activities |
|---|---|---|
| | | |
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| | | |

Results and Conclusions:

1. Explain what activities had an effect on your energy level.

2. Based on observations you made during this activity, where do you think you are getting your energy?

**Astro Journal Biology Lesson 4:**
**Consumers Get Energy From Other LIving Things**

**Class/Period:**

**Name:**

**Date:**

## Flow of Energy Activity:

**Directions:**

1. On a separate piece of paper, draw a picture of yourself in the center of the page. Draw the sun at the top of the page.
2. Write or draw your favorite breakfast, lunch, or dinner food above where you drew yourself. Then draw an arrow from the food to "you." This arrow represents energy because you get energy from this food.
3. Discuss with your class or group where the energy in your favorite food came from.
4. Add in drawings and arrows to represent where the energy for your favorite food came from.

1. Explain how energy flows through your diagram.

2. Use your knowledge of photosynthesis and aerobic respiration to explain how each of the parts in your energy flow diagram is important.

3. How are other living things important to human survival?