

# OH, THE TANGLED WEB WE WEAVE!

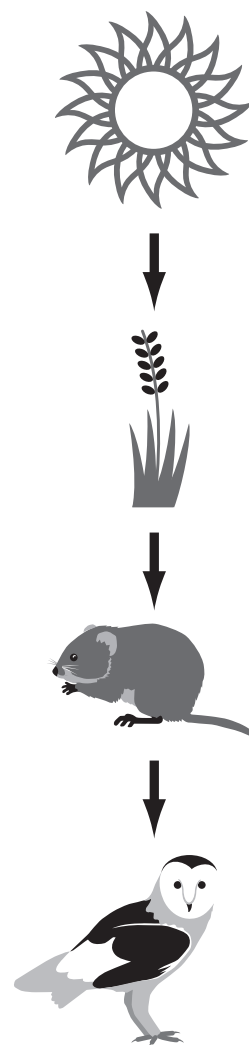
## Background Information for Activity Leaders

### Overview

Children will explore how living things depend on sunlight and each other to survive. Children will connect more than one food chain to form a food web.

### Key Concepts

- Food chains are part of the ecosystems formed by dynamic interactions between plants, animals, and microorganisms and their environment.
- Food chains describe a single path. For example, the Sun provides energy for plants like grasses. Seeds from grasses are eaten by mice and mice are eaten by owls.
- Most living things are part of more than one food chain.
- Animals may be herbivores (plant eaters), carnivores (meat eaters), or omnivores (both plant and meat eaters).
- When many food chains in an area are combined, or linked, they form a food web.
- Plants can be food for more than one herbivore and animals can be prey for various predators. For example, trees produce acorns which are eaten by mice and insects. Mice are eaten by weasels, snakes, and raccoons. The insects are also eaten by birds, skunks and opossums. The skunks, opossums, weasels and mice are eaten by hawks, foxes and owls.
- There are however, certain animals that are restricted to one food source. For example, the panda bear feeds almost exclusively on bamboo.

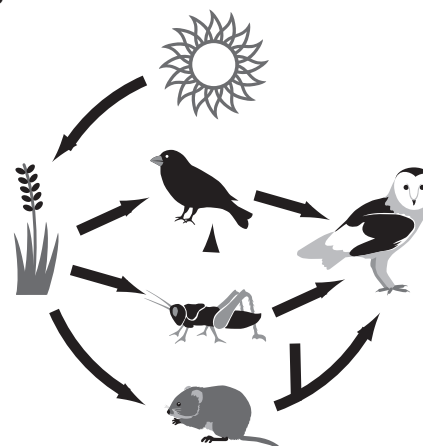


**Food chain**

# OH, THE TANGLED WEB WE WEAVE!

## Background Information for Activity Leaders

- Food webs show how organisms are interconnected by different paths.
- Although a food web is not really connected like a spiderweb, food webs are drawn in a diagram similar to a spiderweb. The connecting arrows are the webbing that show how the energy moves. The organism the arrow is pointing to is eaten by the organism the arrow originates from. For example the field mouse is eaten by the owl. The owl is not eaten by the field mouse.



**Food web**

### What to Expect

- Children will use role cards to investigate how various living things are connected. Some children will be producers or consumers and one child will be the Sun.
- It is important to remind children that when drawing a food chain or food web the direction of the arrows is very important. The arrow indicates the flow of energy.

### Common Misconceptions

- *Children may think: "Food chains and food webs are only found on land, not in the water."*

Food chains and food webs exist wherever life is found. Very complex food webs can be found within oceans, seas, lakes, rivers and even ponds.

- *Children may think: "There are more animals than plants in the world."*

All animals depend on producers, such as plants. Only about 10% of the energy and living matter in plants is passed to the next level in a food chain. This means that, for example, it takes 1,000 kg of plants to feed 100g of grasshoppers. Imagine that in a world wide scale.

- *Children may think: "Organisms higher in a food web eat everything that is lower in the food web."*

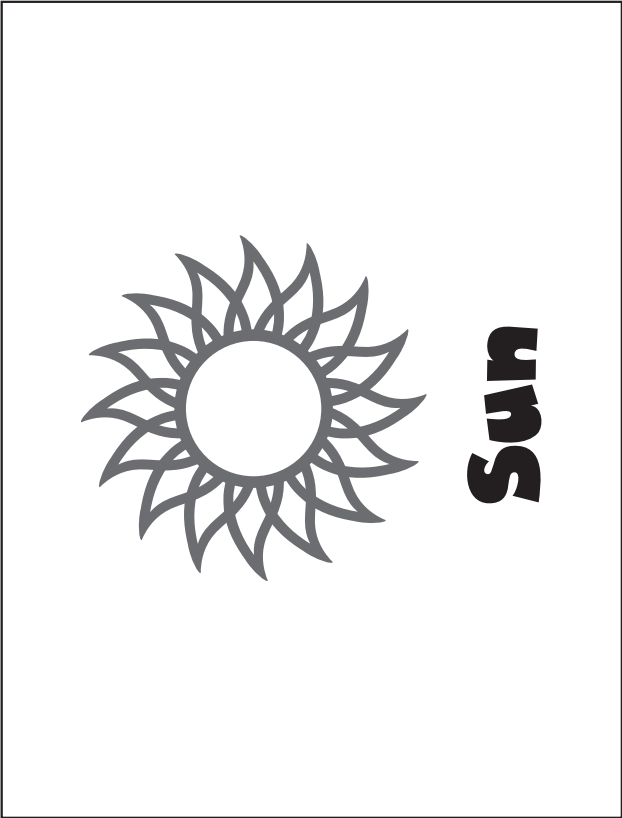
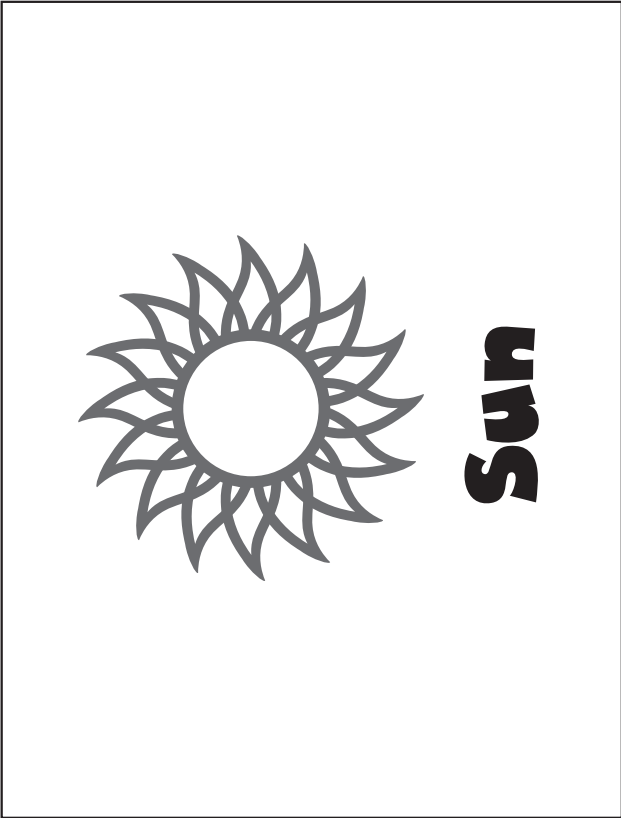
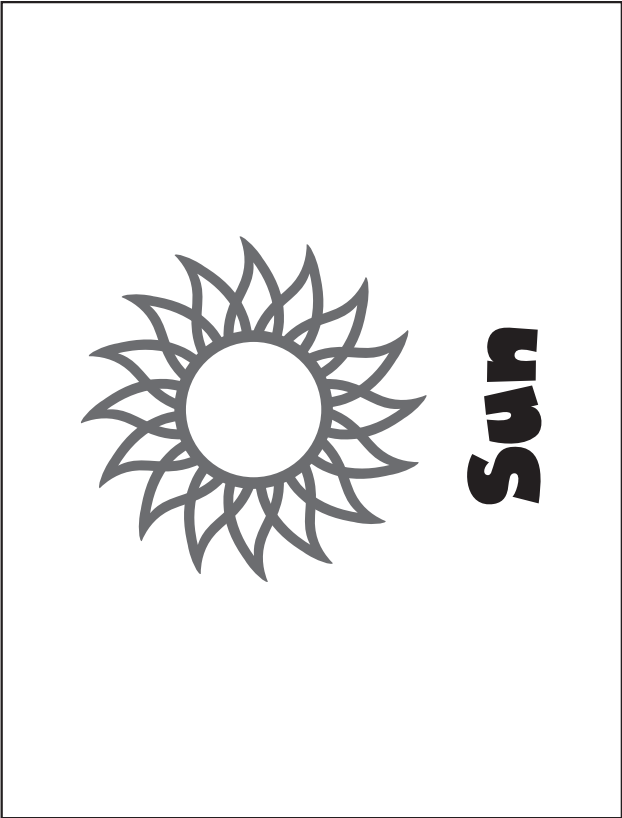
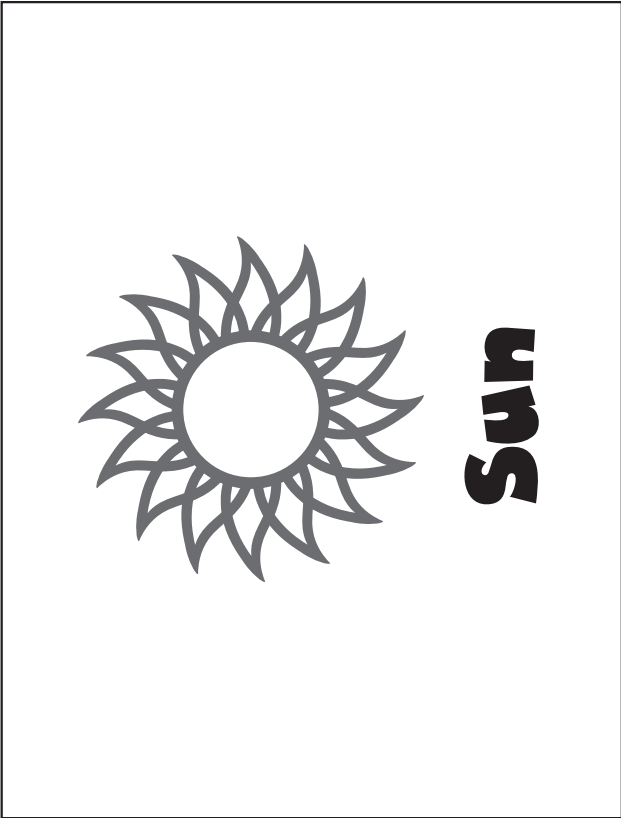
Each organism has specific nutritional needs and adaptations for getting their food. So, organisms in the top of the food chain may eat certain other organisms in the lower part of the food chain and not others.

For example, the Sun provides energy for plants to grow and make food. Plants like grasses and their seeds are eaten by some birds, mice and grasshoppers. Grasshoppers, mice and birds are eaten by owls.

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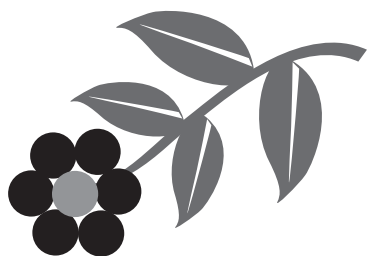
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## Sun Cards



# OH, THE TANGLED WEB WE WEAVE!

.....  
**Producer Cards - front**



**Plant**



**Plant**



**Tree**



**Plant**

# OH, THE TANGLED WEB WE WEAVE!

.....

## Producer Cards - back

**Producers**

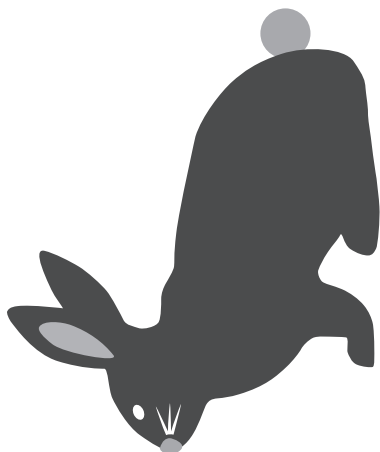
**Producers**

**Producers**

**Producers**

# OH, THE TANGLED WEB WE WEAVE!

## Herbivore Cards - front



**Rabbit**



**Grasshopper**



**Caterpillar**



**Deer**

# OH, THE TANGLED WEB WE WEAVE!

Herbivore Cards - back

**Consumer**  
**Herbivore**

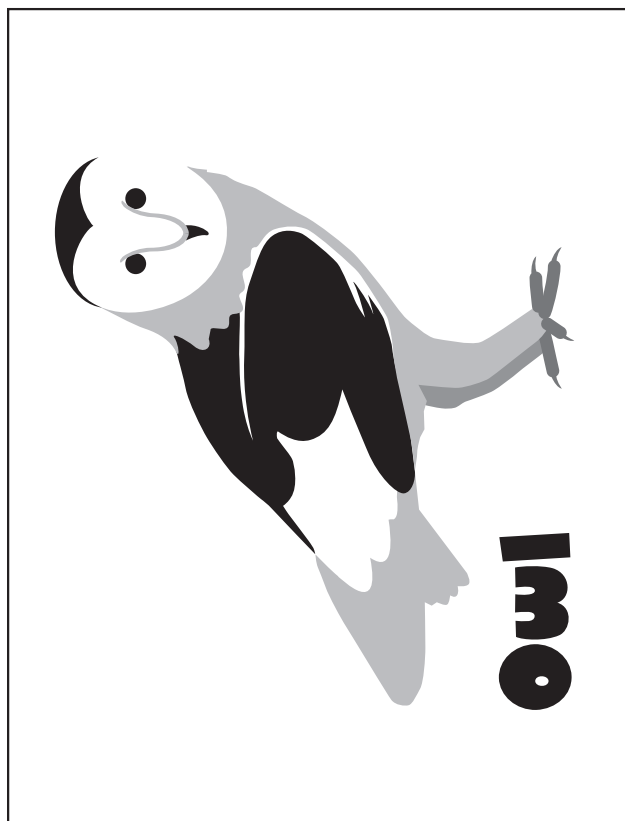
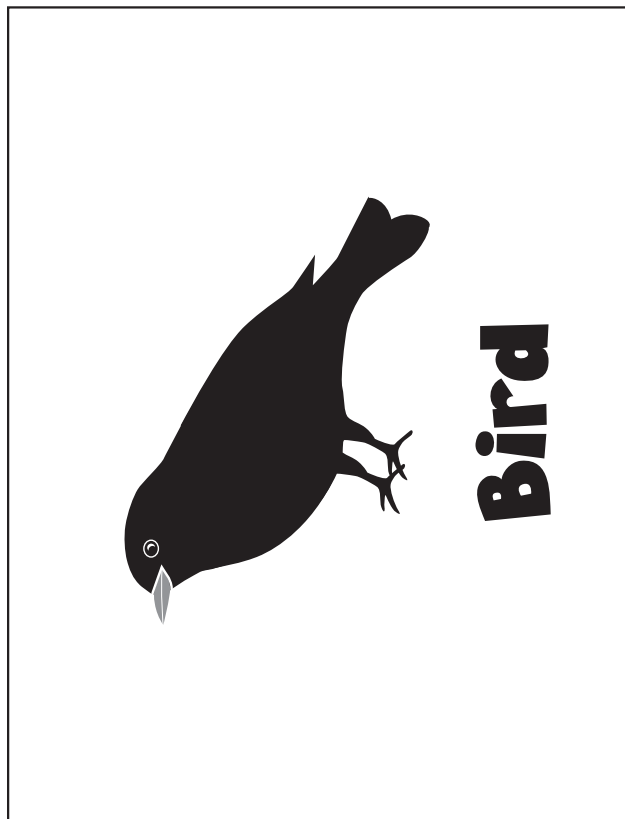
**Consumer**  
**Herbivore**

**Consumer**  
**Herbivore**

**Consumer**  
**Herbivore**

# OH, THE TANGLED WEB WE WEAVE!

## Carnivore Cards - front





# OH, THE TANGLED WEB WE WEAVE!

.....

## Carnivore Cards - back

**Consumer**  
**Carnivore**

**Consumer**  
**Carnivore**

**Consumer**  
**Carnivore**

**Consumer**  
**Carnivore**

# OH, WHAT A TANGLED WEB WE WEAVE!

## Data Collection Sheet

Name: \_\_\_\_\_

Date: \_\_\_\_\_

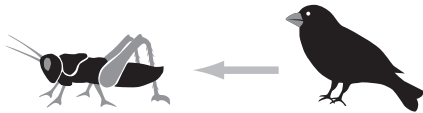
**WONDER** What are some ways living things in an ecosystem depend on the Sun and each other?

**RECORD** Draw how you connected the cards. Use arrows to show who gets eaten.

For example, in this drawing the grasshopper is food for the bird.



If you draw the arrow pointing in the other direction it would mean: the bird is food for the grasshopper.



### Data Table

**CONCLUDE** Write about or draw what you notice when you look at your representation of the food web.

Are some living things food for more than one living thing?

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What happens when a link in the food web is broken?

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## Set Up the Expedition

### Materials

#### For the activity leader:

- *Oh, the Tangled Web We Weave!* Learning Cards
- Sample Food Chains
- APEX Science CD: *Sounds of the Jungle*
- (1) CD player
- (2) skeins of yarn

#### For each group:

- (1) set of *Oh, the Tangled Web We Weave!* cards
- (3) sheets of letter-sized laminating film pockets
- (1) box of crayons
- (1) tape or bottle of glue

#### For each child:

- (1) *Oh, the Tangled Web We Weave!* Data Collection sheet
- (1) popsicle stick
- (1) piece of card stock paper

#### Prepare the demonstration:

1. Find a place to plug in the CD player or use a battery powered CD player.
2. Play the *Sounds of the Jungle*.

#### Prepare the exploration:

1. Make 5 sets of the lacing cards, laminate them and use a hole punch to make three holes on both the left and on the right side of each card.
2. Place the laminated sets of cards in separate envelopes to keep them together.
3. Cut twenty 15 cm segments of yarn per group.
4. Use print or digital resources to gather information about various kinds of food chains for the EXPAND section of the Learning Card.



# OH, THE TANGLED WEB WE WEAVE!

## Activity Leader's Guide

**Group Size:** 4 children

**Time:** 45 minutes

## Engage

1

Gather the children together, and play the sounds on the APEX Science CD.

### Ask:

***"Listen to the sounds. What do you hear? Where do you think these sounds are made?"*** Allow children time to share with the group the different kinds of sounds they hear. The sounds the children hear are the sounds of the jungle. Allow children time share with the group the different kinds of sounds they hear.

### Say:

***"The monkeys, birds, plants, and other living things that live in the jungle are part of an ecosystem. An ecosystem is made up of living things and non-living things that depend on each other."***

### Ask:

***"What are some of the things that living things need to survive?"*** Children will probably start by mentioning food, one of the basic needs of all living things. Encourage them to think of other things, as well, such as water and shelter.

2

### Say:

***One part of an ecosystem is called a food chain. A food chain always starts with energy from the Sun being captured by plants. Herbivores (plant eaters) eat the plants. Carnivores (meat eaters) eat animals. When one animal eats two different kinds of animals, it's part of two different food chains, the two food chains connect to form a food web. Animals may also be omnivores. Omnivores eat both plants and animals."***

# OH, THE TANGLED WEB WE WEAVE!

## Activity Leader's Guide

### Explore

- 3** If you are working with more than 4-6 children, divide the children into groups. Distribute the Data Collection Sheets and Learning Cards.

**Say:**

***“Follow the directions on the Learning Card to investigate how different living things depend on the Sun and on each other to survive.”***

If the children are having a difficult time getting started, ask them to look on the back of their cards for clues.

Allow children enough time to complete the WONDER, EXPLORE, RECORD and CONCLUDE sections of their Learning Card.

### Conclude

- 4** Gather the children together and ask the following questions:

***“How are living things connected?”*** Living things form a web where they depend on each other.

***“What might happen if the plants of an ecosystem were destroyed because of a drought?”*** When one part of the food web is affected, many other living things are affected also.

***“Let’s pretend there is no water, and the plants die. Cut the strings of the plant card to show that it’s dead. All animals that eat the plants will also die, so you would also need to cut their strings.”***

**Ask:**

***“What would happen if we continue cutting the connections until all animals are dead or left without an energy source.”*** Ask children to contribute their ideas.

### Expand

- 5** If time allows, ask the children to follow the EXPAND instructions on their Learning Card.

**Say:**

***Not all food webs are found in a forest ecosystem. Let’s find out about other kinds of food webs.”***

Assign a food chain to each group. Each group will prepare a puppet show about their food chain. To prepare the puppet show, each child in the group will draw a member of the food chain on cardstock, cut it out, and attach it to a popsicle stick. As each group presents its food chain, children should notice a connection to the next chain. When all the puppet shows are completed, point out to children that all the groups together form a food web.

**Say:**

- 6** ***“Congratulations! You have earned your ‘Ask Me About Food Chains’ stamp. You are ready to tell people about food chains.”***

# OH, THE TANGLED WEB WE WEAVE!

## Expedition Learning Card

? How are food webs created?

 **food chain**  
**food web**  
**ecosystem**

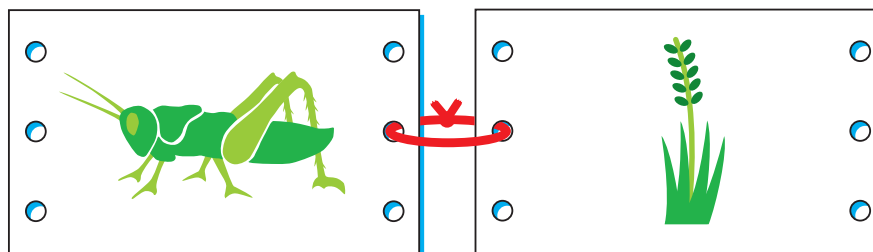
 Explore how living things depend on the sun and each other for food.

**1 WONDER** How are living things connected to each other?

 Write down or draw your ideas on your Data Collection Sheet.

**2 EXPLORE** Find out how living things in an ecosystem are connected to each other.


- Lace a piece of yarn through each living thing that gets its food or energy from the other. For example, a plant gives energy to a grasshopper, so use yarn to tie the plant card to the grasshopper card.
- Many living things have more than one connection to each other. How many connections can you find? For example, the grasshopper eats plants. Is there another organism that eats plants? Tie that card to the plant card, too.



# OH, THE TANGLED WEB WE WEAVE!

## Expedition Learning Card

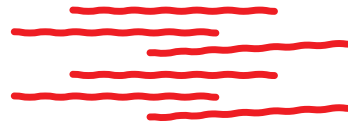
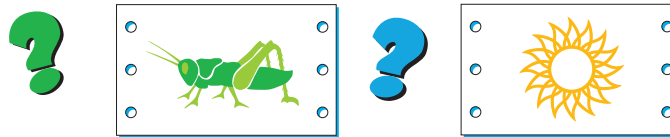
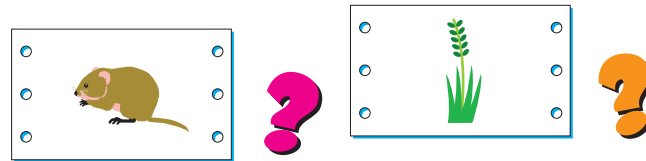
**3 RECORD** Notice which living things are connected.

 Record on your Data Table how you connected the cards.

**4 CONCLUDE** Consider all the connections made when you tied the cards together.

 Write about or draw what you notice.

**5 EXPAND** Your group will be assigned a food chain which is part of a much larger food web. Make a puppet show about your assigned food web. Draw a member of a food chain on cardboard paper, cut it out, and attach it to a popsicle stick. Each group forms a food chain. Find the connections between food chains and form a food web.



## Discovery

### Why did we do that?

- Ecosystems are composed of living things, and they depend on the sun and each other.
- Living things have an impact on each other in an ecosystem.

## Congratulations!

You have earned your "Ask Me About Food Chains" stamp! Now you are ready to tell people about food chains!

