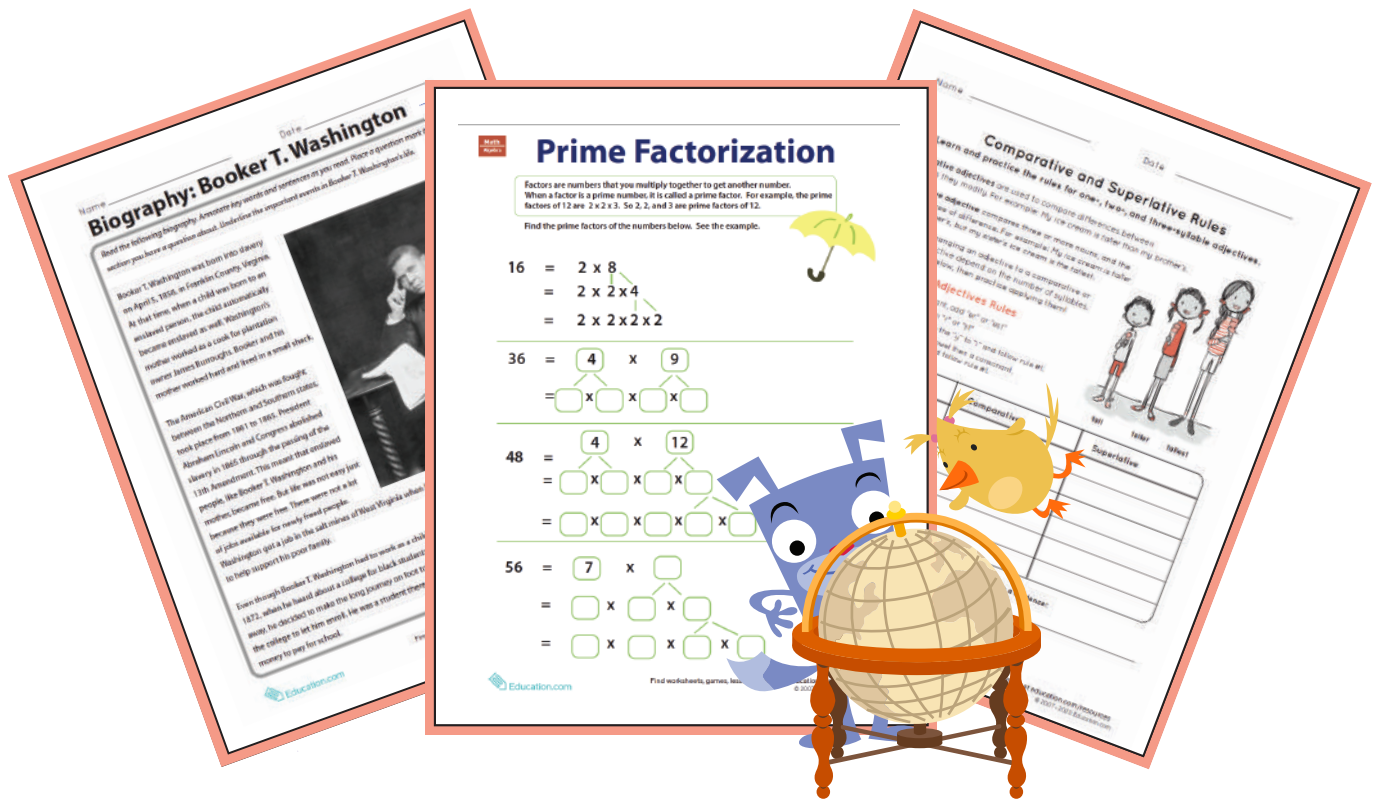


# Week 4

# 4<sup>th</sup> Grade

# Independent Study Packet

 Education.com

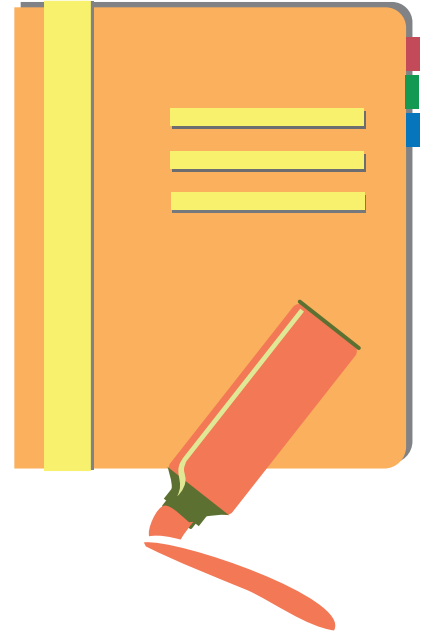


**5 MORE Days of  
Independent Activities in  
Reading, Writing,  
Math, Science, and Social Studies**

# Helpful Hints for Students and Families

## Materials You Will Need:

- Pencils
- Extra paper or a notebook/journal  
(You may put everything into one notebook if you like.)
- Colored pencils, markers, or crayons for some of the activities
- Internet access to conduct research for some activities
- You will need different materials for the optional Design Challenges
- Dice



## Directions & Tips

- There is a schedule for each day.
- You may complete the activities in any order.
- Make sure to plan your time so that you don't let things pile up at the end.
- Read the directions carefully before completing each activity.
- Check off each of the activities when you finish them on the menu.
- Make sure an adult signs the activity menu before you bring it back to school.

# Activity Menu

	Day 1	Day 2	Day 3	Day 4	Day 5
<b>Reading</b> 	Read for 20 minutes and complete the daily reading activity.				
	Write a Letter to the Author	Act Out a Commercial	Make a Mind Map	Make a Movie Trailer	Make a Found Poem
	Biography: Booker T. Washington	Who Was Sor Juana Inés de la Cruz?	Feelings Word Search	Perseverance in Challenging Times	Who Was Junko Tabei?
<b>Writing</b> 	Write a Letter to a Service Worker	Emotions Haiku	The Sound of Silence at Home	Reflection: Seeing Things from Another Angle	What does Peace Mean to You?
<b>Grammar Practice</b> 	Sentence Makeover 1	Synonyms for Happy	Sentence Makeover 2	Superlative Rule Followers	Practice with Prepositional Phrases
<b>Math</b> 	Number Riddles	Subtraction Riddles	Which Numbers are Prime?  Prime Factorization	Practice Ordering Decimals	Division Riddles
<b>Social Studies</b>	<b>Learn some music history!</b>	History of Jazz History of Hip Hop Music	Jazz Greats: John Coltrane Jazz Greats: Etta James		
<b>Science</b>	<b>Discover food chains!</b>	Introduction to Food Chains Introduction to Food Webs Food Chain Game			
<b>Optional</b>	Design Challenge: Marble Labyrinths Nature Appreciation Walk: Showing Our Gratitude Towards Nature				

Parent/Guardian Signature: \_\_\_\_\_

# Day 1

<b>Independent Reading Activity</b>	Choose a book you love and write the author a letter about why. Be sure to use evidence from the book. You can even research the publisher of your book and email the author your letter. (Only if you have adult permission!)
<b>Reading</b>	Read a biography about an important figure in U.S. history.
<b>Writing</b>	Serving others is a way to support the broader community. Write a letter to a service member in your community.
<b>Grammar Practice</b>	Give these sentences a makeover by making them flow better.
<b>Math</b>	Activate your math brain with these number riddles!



# Biography: Booker T. Washington

*Read the following biography. Annotate key words and sentences as you read. Place a question mark by a section you have a question about. Underline the important events in Booker T. Washington's life.*

Booker T. Washington was born into slavery on April 5, 1856, in Franklin County, Virginia. At that time, when a child was born to an enslaved person, the child automatically became enslaved as well. Washington's mother worked as a cook for plantation owner James Burroughs. Booker and his mother worked hard and lived in a small shack.

The American Civil War, which was fought between the Northern and Southern states, took place from 1861 to 1865. President Abraham Lincoln and Congress abolished slavery in 1865 through the passing of the 13th Amendment. This meant that enslaved people, like Booker T. Washington and his mother, became free. But life was not easy just because they were free. There were not a lot of jobs available for newly freed people.

Washington got a job in the salt mines of West Virginia when he was nine years old because he needed to help support his poor family.

Even though Booker T. Washington had to work as a child, he found a way to learn to read and write. In 1872, when he heard about a college for black students called Hampton Institute located 500 miles away, he decided to make the long journey on foot to attend. Upon arrival, he convinced the head of the college to let him enroll. He was a student there, but he also worked as a sanitation worker to earn money to pay for school.



# Biography: Booker T. Washington

After graduating from Hampton Institute, Washington started teaching and soon became renowned for being a talented teacher. In 1881, Booker T. Washington helped open a new college for African American students, called the Tuskegee Institute, in Tuskegee, Alabama. This school is still open today and is now known as Tuskegee University. Washington remained the head of Tuskegee Institute until his death on November 14, 1915, at the age of 59.

After the Civil War ended and slavery was abolished, several U.S. presidents enlisted Booker T. Washington as an advisor, especially on matters of racial equality. Washington wanted a good education for all African Americans, and he worked his whole life to achieve this goal. He was famous for speaking about education and civil rights.

*After reading and annotating Booker T. Washington's biography, answer the following questions, using the text as evidence.*

1. What is the main idea of this text?
2. What does the term abolished mean in this sentence: "President Abraham Lincoln and Congress abolished slavery in 1865 through the passing of the 13th Amendment"?
3. Why was life hard for Booker T. Washington even after slavery ended?
4. Choose one of the lines you underlined in the text and explain why it is an important event in Washington's life.
5. Write a question or an "I wonder..." statement about the biography.

Name \_\_\_\_\_

Date \_\_\_\_\_

# Letter to a Service Worker

**Directions:** Choose one service worker in your school or local community to send a thank you letter to (fireman/woman, lunch staff, nurse, etc.). Write a letter thanking them for their service. Then draw a picture for them on the back.

Who would you like to write a letter to? \_\_\_\_\_



Dear \_\_\_\_\_,



Sincerely,

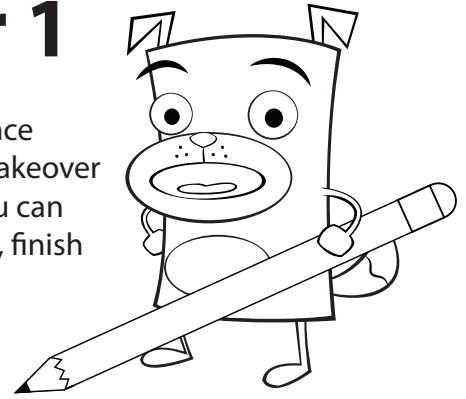
\_\_\_\_\_

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

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

# Sentence Makeover 1

Read the short paragraph below aloud and pay attention to the sentence structure. You will notice it sounds very choppy. Give the sentence a makeover by creating more rhythmic and spicy sentences. Think about where you can combine sentences with conjunctions and adverb phrases. If you want, finish the story on another piece of paper.



## BEFORE

Gallando was a typical wizard. He spent his days reading spellbooks. Gallando made potions. Gallando also enjoyed waving his wand at unlucky toads. He ate lunch. He went to the wizard library. He found a heavy book of potions and spells that looked like it might make for an interesting afternoon. Gallando was feeling great excitement. Gallando checked out the book. He hurried home. His home was down the road.

## AFTER

---

---

---

---

---

---

---

---

Draw a picture that goes with this scene.

A large empty rectangular box for drawing.



# What's My Number?

Follow the clues below to figure out the number. Use the number grid to help you along the way. Cross out any numbers the clues eliminate.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. My number has two digits.
2. I am greater than 30.
3. I am less than 90.
4. My second digit is greater than 3.
5. My first digit is divisible by 2.
6. Both of my digits add up to either 11 or 12.
7. I am the smallest number of the five numbers that are left.

# Day 2

<b>Independent Reading Activity</b>	Write a commercial to sell your book. Act it out for someone at home and maybe even get it on video!
<b>Reading</b>	Read a biography about a 17th century writer and poet.
<b>Writing</b>	Consider your emotions in the present moment as you write a haiku.
<b>Grammar Practice</b>	Explore the many synonyms for the adjective "happy".
<b>Math</b>	Review your 4-digit subtraction skills as you solve this riddle.



# Who Was Sor Juana Inés de la Cruz?



Sor Juana Inés de la Cruz was a 17th century writer, poet, and philosopher. She was born on November 12, 1651 in Nepantla, Mexico. At that time, Mexico was colonized, or ruled, by Spain. It was not common for girls to go to school during this time, but Sor Juana showed an interest in learning at an early age.

Sor Juana was self-taught. She did not attend school. Instead, at the age of three, she learned on her own how to read and write in Latin (an ancient language no longer in use). By the age of five, she knew complex math, and at the age of eight, she was writing poetry. She also learned to write in Nahuatl, an Aztec language, that is still spoken in some parts of Mexico.

As a child, Sor Juana begged her mother to disguise her as a boy so that she could attend school. Her mother didn't allow her to do this, but she realized how smart her daughter was, and hired a tutor to teach her. At the age of 17, Sor Juana became a lady in waiting in the Viceregal Court, where the viceroy and his wife realized how unusually intelligent she was. (A *viceroy* is a ruler who represents the king or queen in a colony, which Mexico was at the time.) Impressed by her knowledge of science, mathematics, philosophy, and literature, the Court funded her continued studies. Sor Juana's brilliance became famous in the region.

When she became an adult, Sor Juana joined a convent and became a nun so that she could focus on studying. As a nun, she had the time and space to read, write, and gain more knowledge. Soon, her room became a library full of books, as well as musical instruments and medical tools. She received some offers of marriage, but turned them all down because she wanted to focus her time on learning.

She wrote many incredible poems, plays, and stories. A lot of her writing emphasized the importance of knowledge, and specifically how important it was for women to have access to knowledge. Some people criticized Sor Juana for writing about this topic because it was not considered proper behavior for a woman to write this way. They wanted her to focus on religious texts instead of women's rights. She responded that women should absolutely have the right to learn and study. For this reason, Sor Juana Inés de la Cruz is considered one of the first feminist writers. *Feminism* is the movement for women to have equal rights.

In 1695, Sor Juana Inés de la Cruz died of the plague, an illness that was highly contagious. Sor Juana is honored as one of Latin America's greatest writers. She is considered an icon of Mexican national identity. Her face appears on Mexican coins and paper currency.

Name \_\_\_\_\_

Date \_\_\_\_\_

# Who Was Sor Juana Inés de la Cruz?

**Directions:** Answer the questions below. Use text evidence to support your answers.

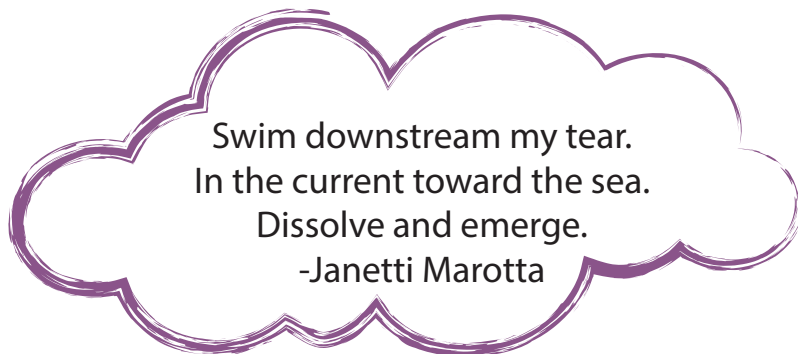
1. Sor Juana Inés de la Cruz was born when \_\_\_\_\_ was ruled by \_\_\_\_\_.
2. Find evidence from the text to support the following statement: "Sor Juana Inés de la Cruz was an exceptionally smart person who learned in untraditional ways."
3. What was one struggle that Sor Juana Inés de la Cruz faced, and how did she respond or solve the problem?
4. Why is Sor Juana Inés de la Cruz considered one of the greatest writers, poets, and feminists of her time?
5. If you could ask Sor Juana one question, what would you ask? Why?

Name \_\_\_\_\_

Date \_\_\_\_\_

## Emotions Haiku

Write your own haiku poem about how to welcome all emotions. Start by reading this sample haiku:



Every haiku has 5 syllables in the first line, 7 syllables in the second line, and 5 syllables in the last line. Brainstorm what you might write about, then write a draft of your haiku using the template below.

### Brainstorm

Write down as many words as you can think of that are connected to the topic of emotions and welcoming emotions.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

After brainstorming, write a first draft of your haiku below. You can use the words from your brainstorm list above.

Title: \_\_\_\_\_

Line 1 (5 syllables)

\_\_\_\_\_

Line 2 (7 syllables)

\_\_\_\_\_

Line 3 (5 syllables)

\_\_\_\_\_

# Vocabulary Builder: Adjectives

Adjectives are used to describe nouns (a person, place, or thing).

Using colorful, vivid, and descriptive words makes your writing more interesting and accurate.

Complete the sentences by using these synonyms for the word **happy**.

Synonyms are words that have the same, or nearly the same, meaning as other words.

satisfied	delighted	gleeful	pleased
blissful	ecstatic	gratified	overjoyed
cheerful	elated	jolly	peaceful
chipper	exultant	joyful	peppy
upbeat	gay	joyous	thrilled
content	glad	jubilant	perky

1. "Thank you!" exclaimed the girl. "I am \_\_\_\_\_ that you invited me!"
2. The child was \_\_\_\_\_ as he unwrapped his Christmas gifts.
3. "I am \_\_\_\_\_ to see you here," said my friend.
4. After the the picnic and swimming, I went home feeling \_\_\_\_\_.
5. The boy was \_\_\_\_\_ to have been chosen for the baseball team.
6. She had a \_\_\_\_\_ personality, and was always smiling.

**Write two sentences using words from the box above.**

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

# Solve the Riddle!

Solve these subtraction problems to find the number that goes with each letter. Then enter the letter in the space provided below. The words will spell out the answer to the riddle!

**Riddle: What kind of music do stones listen to?**

$$\begin{array}{r} \text{C. } 1,621 \\ - 1,389 \\ \hline \end{array}$$

$$\begin{array}{r} \text{R. } 1,283 \\ - 406 \\ \hline \end{array}$$

$$\begin{array}{r} \text{U. } 6,000 \\ - 4,592 \\ \hline \end{array}$$

$$\begin{array}{r} \text{O. } 1,115 \\ - 162 \\ \hline \end{array}$$

$$\begin{array}{r} \text{C. } 4,213 \\ - 3,981 \\ \hline \end{array}$$



$$\begin{array}{r} \text{K. } 1,079 \\ - 780 \\ \hline \end{array}$$

$$\begin{array}{r} \text{S. } 1,970 \\ - 1,573 \\ \hline \end{array}$$

$$\begin{array}{r} \text{M. } 2,935 \\ - 1,333 \\ \hline \end{array}$$

$$\begin{array}{r} \text{I. } 2,802 \\ - 1,774 \\ \hline \end{array}$$

**Answer:**

“ 877: 

953: 

232: 

299: 

” 1,028: 

1,602: 

1,408: 

397: 

232: 



# Day 3

<b>Independent Reading Activity</b>	Make a Mind Map for your book or for a character. Put your book's title (or character name) in the middle and use words and images to tell as much detail as you can. Don't forget to give examples!
<b>Reading</b>	Emotions are in us and all around us! Create your own word search using emotion words.
<b>Writing</b>	Experience the beauty of silence with this writing activity.
<b>Grammar Practice</b>	Practice your revising skills as you give this paragraph a makeover!
<b>Math</b>	Review the concept of prime numbers and prime factorization.





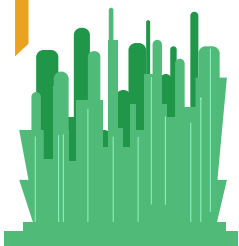
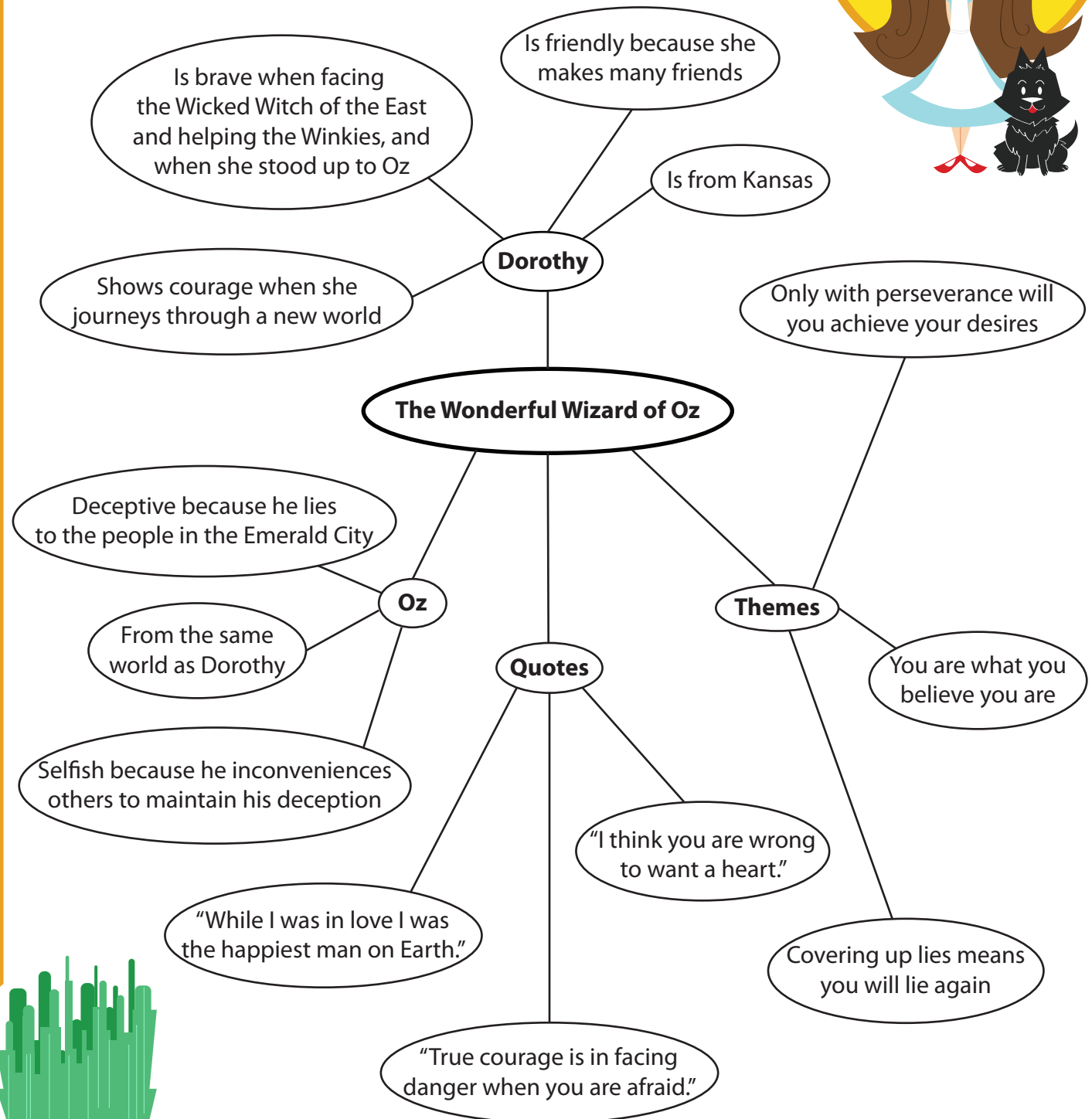
Name \_\_\_\_\_

Date \_\_\_\_\_

# Book or Character Mind Map

**Directions:** Look at this example of a book mind map. Then fill in your own mind map about a character or book you read.

## *The Wonderful Wizard of Oz*



Name \_\_\_\_\_

Date \_\_\_\_\_

# Book or Character Mind Map

**Directions:** Create your own mind map. Write the book title or character name in the oval, then draw your own circles as you create your mind map using words or drawings. For example, you can write about conflicts, character traits, settings, or things you loved about the book or character.



Name \_\_\_\_\_

Date \_\_\_\_\_

# Feelings Word Search

In each moment we may feel a variety of feelings, or emotions. Feelings come and go, and talking and writing about them can help us to see that feelings and emotions are visitors, like passing clouds on a sunny day. From the list below, circle ten descriptive emotion words to write about.

## Emotions

amazed	disgusted	insecure	proud
angry	energetic	irritated	relieved
annoyed	eager	jealous	sad
anxious	embarrassed	joyful	satisfied
ashamed	envious	lost	scared
bored	excited	lonely	self-conscious
comfortable	furious	loving	silly
confused	foolish	miserable	terrified
content	frustrated	motivated	uncomfortable
determined	hopeful	overwhelmed	worried
depressed	hurt	peaceful	

Name \_\_\_\_\_

Date \_\_\_\_\_

# Feelings Word Search

After choosing your words, write in the clouds below when you have felt this emotion. Explain to a family member or caring adult how you felt and where you felt the emotion in your body.



A cloud-shaped writing area with a blue outline and 10 horizontal purple lines for text.



A cloud-shaped writing area with a blue outline and 10 horizontal purple lines for text.



A cloud-shaped writing area with a blue outline and 10 horizontal purple lines for text.



A cloud-shaped writing area with a blue outline and 10 horizontal purple lines for text.



A cloud-shaped writing area with a blue outline and 10 horizontal purple lines for text.

Name \_\_\_\_\_

Date \_\_\_\_\_

# Feelings

After choosing your words, write in the clouds below when you have felt this emotion. Explain to a family member or caring adult how you felt and where you felt the emotion in your body.



A cloud-shaped writing area with a blue outline and eight horizontal purple lines for writing.



A cloud-shaped writing area with a blue outline and eight horizontal purple lines for writing.



A cloud-shaped writing area with a blue outline and eight horizontal purple lines for writing.



A cloud-shaped writing area with a blue outline and eight horizontal purple lines for writing.



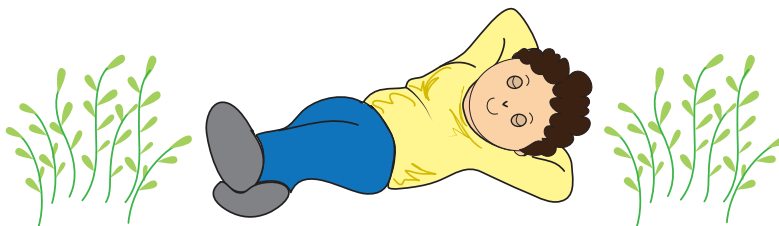
A cloud-shaped writing area with a blue outline and eight horizontal purple lines for writing.

Date \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

# The Sound of Silence at Home



Take some time outside. Bring your body to stillness, close your eyes or lower your gaze and listen to the sounds around you. Now take some time to listen to the silence in between the sounds around you. Draw and/or write your answers to the questions below.

1. What was your experience like listening to **sounds** outside? What did you hear, what did you notice?

---

---

---

---

2. What was your experience like listening to **silence** outside? What did you notice?

---

---

---

Name \_\_\_\_\_

Date \_\_\_\_\_

## **The Sound of Silence at Home**

3. How can silence or space be important? Do you notice anything about your connection to nature?

---

---

---

---

4. Discuss with each other the following quote: "Without silence, sound would be meaningless"  
—Katrina Goldsaito, *The Sound of Silence*

---

---

---

---



Name \_\_\_\_\_

Date \_\_\_\_\_

## **The Sound of Silence at Home**

5. Draw your favorite sounds at home and explain why they are your favorite sounds.

---

---

---

---

6. Write a poem about silence and draw a picture of yourself outside in stillness and silence.

---

---

---

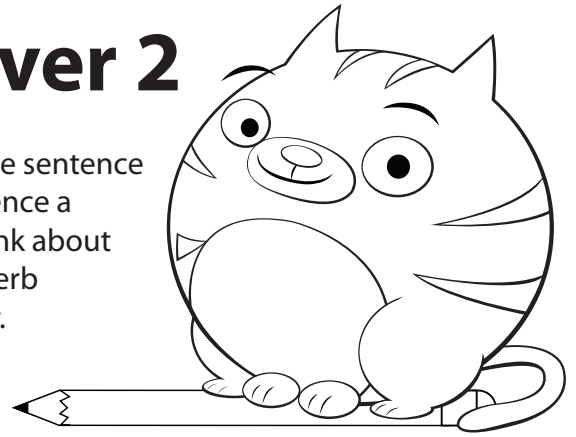
---

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

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

# Sentence Makeover 2

Read the short paragraph below aloud and pay attention to the sentence structure. You will notice it sounds very choppy. Give the sentence a makeover by creating more rhythmic and spicy sentences. Think about where you can combine sentences with conjunctions and adverb phrases. If you want, finish the story on another piece of paper.



## BEFORE

Superheroes go through a training period. They have to expect the unexpected. That's what Lucas learned. It was his first day of training. He was with his superhero mentor, Hatman. They were tracking down Hatman's nemesis, the Mathemagician. The Mathemagician had left behind a series of clues for them to decipher. Lucas wanted to find some clues. Lucas stared nervously. He looked at a line of numbers written on the wall. He also looked at the symbols written on the wall.

## AFTER

---

---

---

---

---

---

---

---

Draw a picture that goes with this scene:

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

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



# Which Numbers Are Prime?



Circle the prime numbers and add them together. Remember: A Prime Number is a number that is divisible only by one and itself.

17      21      13      7      1      3  
 5      9      11      14      18      2      17

TOTAL \_\_\_\_  
Is the total a prime number? \_\_\_\_\_

Solve the equations and circle the answers that are prime.

1 $14 + 5 =$	2 $6 \times 7 =$	3 $30 \div 2 =$
4 $37 - 28 =$	5 $54 \div 9 =$	6 $8 + 19 =$
7 $12 \times 4 =$	8 $11 + 56 =$	9 $25 - 8 =$
10 $49 \div 7 =$	11 $19 \times 3 =$	12 $102 - 5 =$
13 $15 + 23 =$	14 $60 - 17 =$	15 $128 \div 4 =$

# Prime Factorization

Factors are numbers that you multiply together to get another number. When a factor is a prime number, it is called a prime factor. For example, the prime factors of 12 are  $2 \times 2 \times 3$ . So 2, 2, and 3 are prime factors of 12.

Find the prime factors of the numbers below. See the example.



$$\begin{aligned} 16 &= 2 \times 8 \\ &= 2 \times 2 \times 4 \\ &= 2 \times 2 \times 2 \times 2 \end{aligned}$$

$$\begin{aligned} 36 &= \boxed{4} \times \boxed{9} \\ &= \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \end{aligned}$$

$$\begin{aligned} 48 &= \boxed{4} \times \boxed{12} \\ &= \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \\ &= \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \end{aligned}$$

$$\begin{aligned} 56 &= \boxed{7} \times \boxed{\phantom{00}} \\ &= \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \\ &= \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \times \boxed{\phantom{00}} \end{aligned}$$

# Day 4

<b>Independent Reading Activity</b>	Choose a book that has not already been made into a movie. Use the storyboard to plot out a movie trailer for your book.
<b>Reading</b>	Dive into the crucial life skill of perseverance with this activity.
<b>Writing</b>	We all go through conflicts sometimes. Do this writing exercise to see a conflict you experienced from a different perspective.
<b>Grammar Practice</b>	Practice changing an adjective into its comparative and superlative versions.
<b>Math</b>	Consider these decimals as you place them in order from largest to smallest.



Name \_\_\_\_\_

Date \_\_\_\_\_

# Storyboard



Draw pictures and write about what you draw in this graphic organizer.

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

A large, empty rectangular box with a black border, intended for drawing a picture.

---

---

---

---

## Perseverance in Challenging Times



1. Research and define “*perseverance*”:

---

---

---

2. Research or reflect on one person who has persevered (this could be someone you know, a famous person, or a historical figure).

Name of person who has persevered: \_\_\_\_\_

3. Answer the following questions about your chosen person:

- What challenges did this person face?
  
  
  
  
- How did they overcome these obstacles and persevere?
  
  
  
  
- How can you take what they have done and use these tools in your own life?

**Create a slideshow or poster on “perseverance”**

- ☐ Create a title slide or poster title related to perseverance.
- ☐ Design at least 4 slides or include 4 parts to your poster that share your understanding.
- ☐ Include the definition of perseverance.
- ☐ Include an inspirational quote.
- ☐ Describe your role model of perseverance (the person you listed above).
- ☐ Use your questions and answers above to illustrate perseverance.

**Present your slideshow or poster to a friend or caring adult.  
Remember to go back to your slideshow or hang up your poster as a reminder  
to stay motivated and to persevere!**

Name \_\_\_\_\_

Date \_\_\_\_\_

## Seeing Things From Another Angle

Reflect on a time when you were in an argument or had a conflict with someone, who you then made amends with in your life.

What happened?

---

---

---

---

---

How do you think the other person felt?

---

---

---

---

---

How did you feel?

---

---

---

---

---

How were things resolved, if they were?

---

---

---

---

---

How could you use conflict resolution skills the next time there is a conflict?

---

---

---

---

---

With your parent, make an agreement about how you can handle conflict in your home.

---

---

---

---

---



# Comparative and Superlative Rules

Learn and practice the rules for one-, two-, and three-syllable adjectives.

**Comparative adjectives** are used to compare differences between two nouns they modify. For example: *My ice cream is taller than my brother's.*

A **superlative adjective** compares three or more nouns, and the highest degree of difference. For example: *My ice cream is taller than my brother's, but my sister's ice cream is the tallest.*

The rules for changing an adjective to a comparative or superlative adjective depend on the number of syllables. Learn the rules below, then practice applying them!

## One-Syllable Adjectives Rules

1. If it ends in a consonant, add "er" or "est"
2. If it ends in "e", add an "r" or "st"
3. If it ends in "y", change the "y" to "i" and follow rule #1.
4. If it ends with a single vowel then a consonant, double the consonant and follow rule #1.



tall

taller

tallest

Adjective	Comparative	Superlative
large		
brown		
fine		
dry		
few		
big		

Choose one adjective and use its comparative or superlative form in a sentence:

---

## Two-Syllable Adjectives Rules

1. With most two syllable words, simply add “more” before the word for comparative adjectives.
2. For superlative adjectives, add “most” before the word.
3. Common exception: If it ends in “y” or “e”, use the same rule as one syllable words.

Adjective	Comparative	Superlative
little		
fancy		
ugly		
tender		
clever		
itchy		

Choose one adjective and use its comparative or superlative form in a sentence:

---

## Three or More Syllables Adjectives Rule

Add “more” or “most” before the word.

Adjective	Comparative	Superlative
magnificent		
inexpensive		
victorious		
nutritious		
chocolatey		
generous		

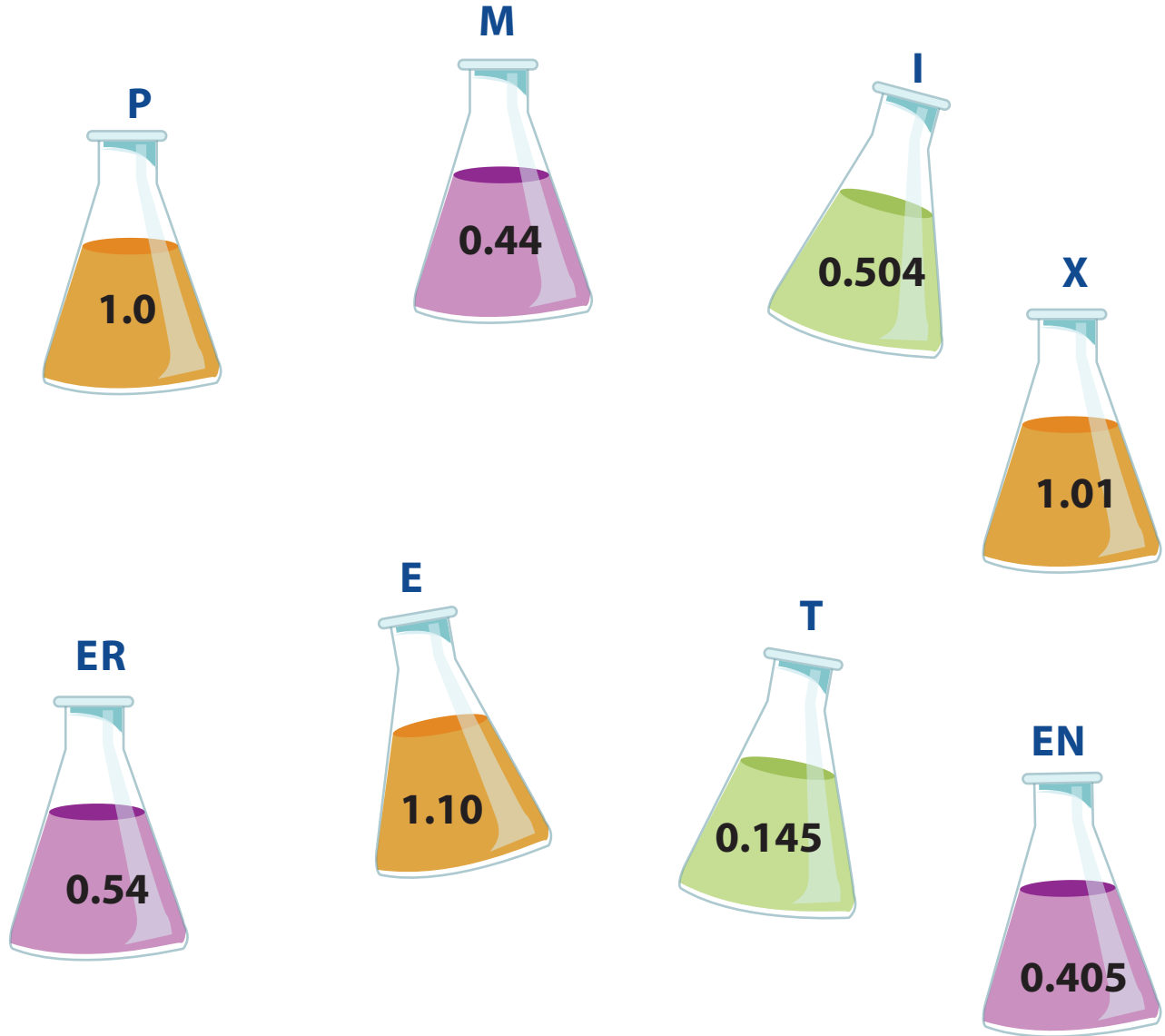
Choose one adjective and use its comparative or superlative form in a sentence:

---

4th  
Grade

# Beaker Puzzle: Practice Ordering Decimals

Order the decimal numbers on the beakers from largest to smallest, then use the letters to answer the question below.



**What do scientists do?**

---

# Day 5

<b>Independent Reading Activity</b>	Go through your book and make a found poem with words from your book. Choose phrases and pieces of dialogue that are unique to your book and put them together into a poem.
<b>Reading</b>	Learn about the first woman to climb the seven highest mountains in the world with this nonfiction reading comprehension text.
<b>Writing</b>	Explore what peace means to you and then write an acrostic poem.
<b>Grammar Practice</b>	Practice your prepositional phrases!
<b>Math</b>	Hone your division skills as you solve this riddle.



# Who Was Junko Tabei?



Junko Tabei was the first woman to climb Mount Everest, the highest mountain in the world. The summit, or peak, sits at almost 30,000 feet high, and lies on the international border between Nepal and China. Junko Tabei was also the first woman to climb all of the Seven Summits, the seven highest mountains in the world, one on each continent. A pioneer mountaineer, Tabei started the first women's climbing club in Japan at a time when no such group existed.

Junko Tabei was born on September 22, 1939, in Fukushima, Japan. She was the fifth of seven children in her family. As a child, she was considered small and fragile. In 1949, when she was 10 years old, she went on a class field trip to climb Mount Jaso in Japan. This excursion, her first exposure to mountain climbing, sparked her interest in mountaineering. However, it was an expensive activity, and her family was poor, so she was not able to do much climbing in high school.

She went to university and studied English literature. During college and after graduation, she joined several mountain climbing clubs, which consisted mostly of men. It was not common for women to become mountaineers at this time. Later, in 1969, she would start her own climbing group specifically for women, called the Ladies Climbing Club. Their motto was "Let's go on an overseas expedition by ourselves." Alongside the other members of this club, Tabei scaled many of the world's highest mountains.

Junko Tabei met and married a man who was also an avid mountaineer. The couple had two children. Many people in Japan at this time believed that women should focus on raising their children, not on dangerous activities such as mountaineering. Nonetheless, Tabei couldn't imagine a life without climbing, and continued on with her hobby with the support of her family.

In 1975, after many months of training, she led an expedition to climb Mount Everest. Halfway through the climb, an avalanche hit the group and completely covered them in snow. They were caught under the snow for a while, but managed to get out. After spending a few extra days recovering from the avalanche, the group continued on, and made it to the summit. Junko Tabei made it to the summit on May 16, 1975. She hit another record in 1992, when she became the first woman to climb all of the Seven Summits.

Later in her life, Tabei became concerned about the environmental effects of mountaineering. She had witnessed how the mountains were impacted by the waste left behind by climbing groups. She decided to return to university to study environmental science in 2000. Due to her interest in ecological matters, she became the director of the Himalayan Adventure Trust of Japan, which campaigned to protect and preserve mountain environments around the world.

Junko Tabei was a strong and determined woman, who defied all odds to devote her life to scaling peaks and protecting our highest mountains. She continued to summit many mountains even in the last decade of her life. She died in 2016, at the age of 77.

Name \_\_\_\_\_

Date \_\_\_\_\_

# Who Was Junko Tabei?

**Directions:** Answer the questions below. Use text evidence to support your answers.

1. Junko Tabei was the first woman to \_\_\_\_\_

\_\_\_\_\_.

2. Complete the timeline of Junko Tabei's life using the line below. Include key events and dates.

\_\_\_\_\_

3. What is Junko Tabei famous for? Why do you think it's important to learn about her?

4. Reread the sentence, "Junko Tabei was a strong and determined woman, who defied all odds to devote her life to scaling peaks and protecting our highest mountains." Explain the meaning of the phrase *defied all odds*. Use quotes from the text to support your explanation.

Name \_\_\_\_\_

Date \_\_\_\_\_

# Who Was Junko Tabei?

5. Complete the table with evidence from the text that supports or refutes the statements.

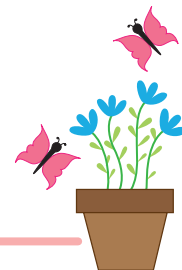
Evidence to Support (FOR)	Statement	Evidence to Refute (AGAINST)
	It was easy for Junko Tabei to become a mountaineer.	
	Junko Tabei was a courageous person.	
	Junko Tabei was a leader and a pioneer in mountaineering.	

Name \_\_\_\_\_

Date \_\_\_\_\_

# What Does P-E-A-C-E Mean to You?

Peace is a word you may have heard thousands of times in books and movies, but what does peace mean to you? Take some time to reflect and brainstorm your ideas here.



After brainstorming, write an acrostic poem below by writing one word connected to peace on each line.  
Each word will begin with the letters P, E, A, C, and E.

P \_\_\_\_\_

E \_\_\_\_\_

A \_\_\_\_\_

C \_\_\_\_\_

E \_\_\_\_\_

Draw a picture or symbol below of what peace means to you:



## Practice with Prepositional Phrases

A **prepositional phrase** is a modifying phrase consisting of a preposition and its object. These phrases usually add details about "where" or "when."

**Preposition + Its Object = Prepositional Phrase**

example

**under + the bridge = under the bridge**

Directions: Use this method to record the parts of each prepositional phrase below.

1. Sarah sprinted down the hill.

Preposition = down Object = the hill

down + the hill = down the hill

2. I cleaned during the commercials.

Preposition = \_\_\_\_\_ Object = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

3. I have homework on the weekends.

Preposition = \_\_\_\_\_ Object = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

4. My mom is cheerful in the morning.

Preposition = \_\_\_\_\_ Object = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Directions: Complete each sentence with a prepositional phrase. Underline the preposition and circle the object. You may choose to select prepositions from the word bank or use your own.

Preposition Word Bank

in on at during around before over off for by to

5. The princess lives \_\_\_\_\_.

6. Mr. Roberts, the math teacher, offers chapter review sessions \_\_\_\_\_.

7. My sister has a dental appointment \_\_\_\_\_.

8. The annual Springfield parade takes place \_\_\_\_\_.

9. We take turns saying what we're thankful for \_\_\_\_\_.

10. We traveled \_\_\_\_\_.

11. We veered right to turn \_\_\_\_\_.

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

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



# Division Riddle



Solve each division problem. Then use the remainders for each problem to solve the riddle.

Hint: You will not use all the letters to solve the riddle.

***What goes up and  
doesn't go back down?***



Example:

$$\begin{array}{r} 170 \text{ r}2 \\ 3 \overline{) 512} \\ \underline{- 3} \phantom{0} \\ 21 \\ \underline{- 21} \\ 02 \end{array}$$

G $7 \overline{) 410}$	B $8 \overline{) 839}$	R $3 \overline{) 1551}$
O $5 \overline{) 671}$	Y $6 \overline{) 3299}$	U $9 \overline{) 258}$
N $9 \overline{) 341}$	E $8 \overline{) 594}$	A $4 \overline{) 1239}$

***What goes up and doesn't go back down?***

\_\_\_\_\_

5      1      6      0                      3      4      2

# Social Studies

Learn about the history of some important types of music.

History of Jazz

History of Hip Hop Music

Jazz Greats: John Coltrane

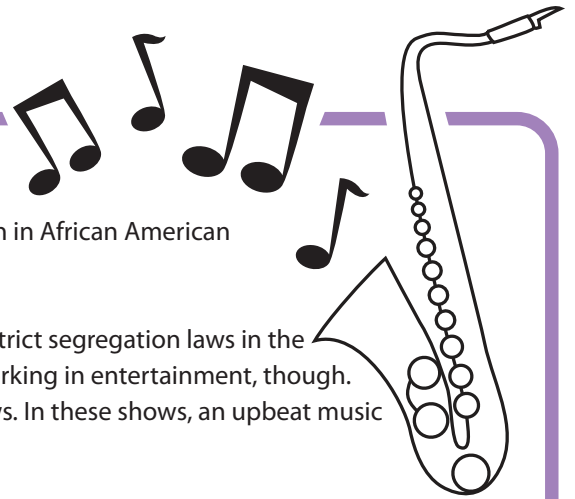
Jazz Greats: Etta James



Name \_\_\_\_\_

Date \_\_\_\_\_

# The History of Jazz



**Directions:** Read the passage below and answer the questions that follow.

Did you know that jazz music has been around since the late 1800s? It began in African American communities in the South. Since then, jazz has taken the world by storm.

After the abolishment of slavery, many freed slaves tried to find work. With strict segregation laws in the South, former slaves had trouble finding jobs. Most laws did not apply to working in entertainment, though. African Americans got jobs performing music in vaudeville and variety shows. In these shows, an upbeat music called ragtime was popular.

The specific birthplace of jazz is New Orleans, Louisiana. It is in this city that ragtime music transformed into jazz music. People from all over the world came by boat every day to the port city of New Orleans. They brought musical traditions from their home countries to New Orleans. The nightclubs and entertainment venues blended the different styles of music. Spanish music, blues, gospel music, and African music were mixed. It then became the lively style known as jazz.

The sounds of jazz spread like wildfire in the 1920s. The United States was changing. Women gained the right to vote. Prohibition came to an end. Wild jazz music became the perfect background music to the turbulent times. Young people of all backgrounds began to take an interest in jazz. This period of time became known as "The Jazz Age".

Louis Armstrong and Duke Ellington are two famous African American musicians. These talented songwriters and performers added excitement to the genre. The Jazz Age included some famous women jazz artists, too. Ella Fitzgerald and Billie Holiday are two beloved performers. These musicians brought their unique talents to the genre. Their influences continue to impact the music world today.

Jazz grew and changed through the years. Many new forms of music were created. Jazz's influence reaches almost every form of popular music today.

1. How is jazz related to other types of music?

---

---

2. When did jazz become popular?

---

---

3. What is significant about "The Jazz Age"?

---

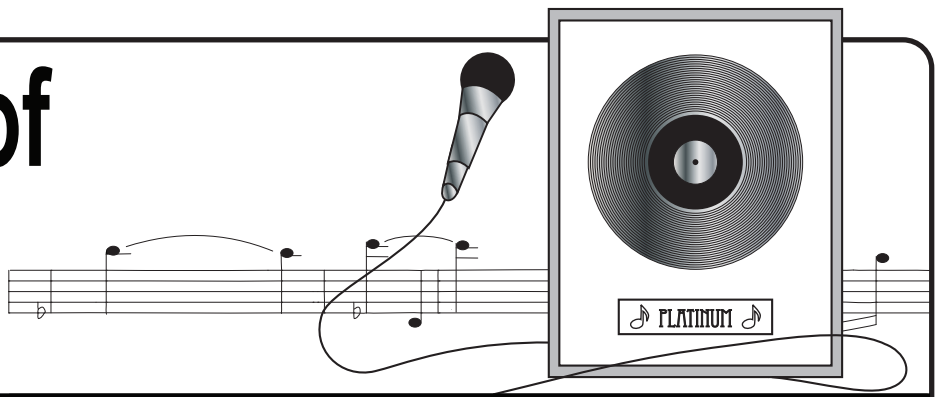
---

4. Why did musical styles from other countries influence jazz?

---

---

# The History of Hip Hop



**Directions:** Read the passage below and answer the questions that follow.

It is said that hip hop music was born at a birthday party in the Bronx, NY. This popular genre of music started out as party music in the 1970s. It was played by local DJs in the city neighborhoods.

DJs put different pieces of music together. They did this to make new sounds. Then, rapping was added. Rapping is a way of talking over the music with words that rhyme. DJs arranged the beats so that rappers could find a rhythm. Then, the rappers would speak in time with the beat. Rappers often wrote lyrics, or the words of a song, about their own lives.

At first, hip hop served as a response to disco. Disco was a dance music craze in the 1970s. Disco was all about wealth and status. Hip hop emphasized reality and community. Hip hop music and culture became helpful to musicians and listeners. It was a way for them to deal with the difficult things about city life.

Hip hop quickly became an artistic outlet for African Americans. It was a new way to tell stories. From there, hip hop evolved from just a type of music to an entire lifestyle.

Hip hop is an art form that continues to evolve and impact communities today. New artists and new sounds are brought into the genre. The new styles continue to become popular. Hip hop is a genre that is heard and enjoyed all over the world.

1. How are hip hop and disco related? \_\_\_\_\_

\_\_\_\_\_

2. Why do you think hip hop is an important music genre for African Americans? \_\_\_\_\_

\_\_\_\_\_

3. What are two things that make hip hop unique? \_\_\_\_\_

\_\_\_\_\_

4. What is one notable fact about how hip hop music was created? \_\_\_\_\_

\_\_\_\_\_

5. In your own words, write a definition for *rapping*. \_\_\_\_\_

\_\_\_\_\_



# Jazz Greats: John Coltrane



**John Coltrane** was born in 1926 in Hamlet, North Carolina. Inspired by his father, who played many different instruments, young John began studying the E-flat horn and clarinet. As a teen, influenced by musicians such as Lester Young, John switched to the alto saxophone, the instrument he would become famous for playing.

John served in the military during World War II, and he made his first recordings during that time. After the war, he joined the band led by jazz and blues great Eddie Vinson, which exposed him to new ways of playing the saxophone. In 1960, Coltrane recorded the album *Giant Steps*, made up of his own compositions. In the same year, he formed his first quartet. Their first recording together was also his debut playing soprano saxophone.



As his style developed and changed, Coltrane began to receive criticism from some audiences and jazz critics. Coltrane and Eric Dolphy, the second horn player in his quartet at the time, were harshly criticized as “Anti-Jazz” for their unusual sound. Perhaps because of this, Coltrane played more conservatively in his studio recordings of 1962 and 1963. In 1965, however, with the formation of his second quartet, his playing took on a more harmonious sound. He played with this band, which included his wife, Alice, on piano, until his death in 1967.

Coltrane continued to win awards even after death. Among others, he was awarded a Grammy for “Best Jazz Solo Performance” in 1982, and a Grammy Lifetime Achievement Award in 1997.

**Directions:** Answer the questions below. Use text evidence to support your answers.

1. What is the main idea of Jazz Greats: John Coltrane? Write it in your own words.

---

---

Name \_\_\_\_\_

Date \_\_\_\_\_

# Jazz Greats: John Coltrane



2. Choose a quote from the text that supports the following statement, and record it on the lines below.

John Coltrane was an award-winning musician.

---

---

3. What can you infer about the fact that Coltrane continued to win awards even after he died?

---

---

4. Describe what the author means when the text says, "...Coltrane began to receive criticism from some audience and jazz critics."

---

---

5. How did playing in the band led by Eddie Vinson benefit John Coltrane?

---

---

6. What did John Coltrane do after serving in the military during World War II?

---

---

7. Who or what influenced John Coltrane as a musician? Include two pieces of evidence from the passage.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_

# Jazz Greats: Etta James



**Etta James** was born Jamesetta Hawkins in 1938 in Los Angeles, California.

Her great musical gift first showed itself when, as a child, she sang in the St. Paul Baptist Church choir. The first few years of her life were not easy ones. Her mother abandoned her, and she never knew her father. Her mother's landlady, Lulu Rogers, took the baby in. Lulu took over the task of raising Jamesetta, bringing her to the the Baptist Church. Jamesetta's talent was immediately clear, and, by the age of 5, she was singing on gospel radio shows. She attracted an audience from all around L.A. who came to hear her sing.



Lulu Rogers passed away when Jamesetta was 12 years old, and Jamesetta went to live with relatives in San Francisco. She formed the singing group The Creolettes, who became The Peaches when they went on tour. It was during this period that she took the name Etta James. In the 1950s, Etta toured with famous rock 'n' roller Little Richard. Then, she sang backup on records by Marvin Gaye, Chuck Berry, and other rock and soul sensations.

Etta moved to Chicago and began to work under the Chess Records label. By 1963, she had rocketed from poverty up to the big time, having made ten chart-making hits in only three years. In 1974, James fell ill and fell on hard times. She spent months in the hospital, then barely worked for the next ten years. In 1988, however, she made *The Seven Year Itch*, her first album in seven years. She had finally gained the fame she deserved, and she kept it for the rest of her life. She continues to influence a wide range of singers, from Diana Ross to Christina Aguilera.

**Directions:** Answer the questions below. Use text evidence to support your answers.

1. What is the main idea of Jazz Greats: Etta James? Write it in your own words.

---

---



Name \_\_\_\_\_

Date \_\_\_\_\_

# Jazz Greats: Etta James



2. Choose a quote from the text that supports the following statement, and record it on the lines below.

Etta James had a musical gift that helped her become very successful.

---

---

3. What can you infer about Etta James after learning about her childhood?

---

---

4. Describe what the author means when the text says, "By 1963, she had rocketed from poverty up to the big time, having made ten chart-making hits in only three years."

---

---

5. How does Etta James's legacy continue in the music community today?

---

---

6. How did sickness affect Etta James's career?

---

---

7. What are some examples of Etta James's success during her lifetime? Include two pieces of evidence from the passage.

- a. \_\_\_\_\_
- \_\_\_\_\_
- b. \_\_\_\_\_
- \_\_\_\_\_

# Science

**Discover food chains!**

Introduction to Food Chains

Introduction to Food Webs

Food Chain Game

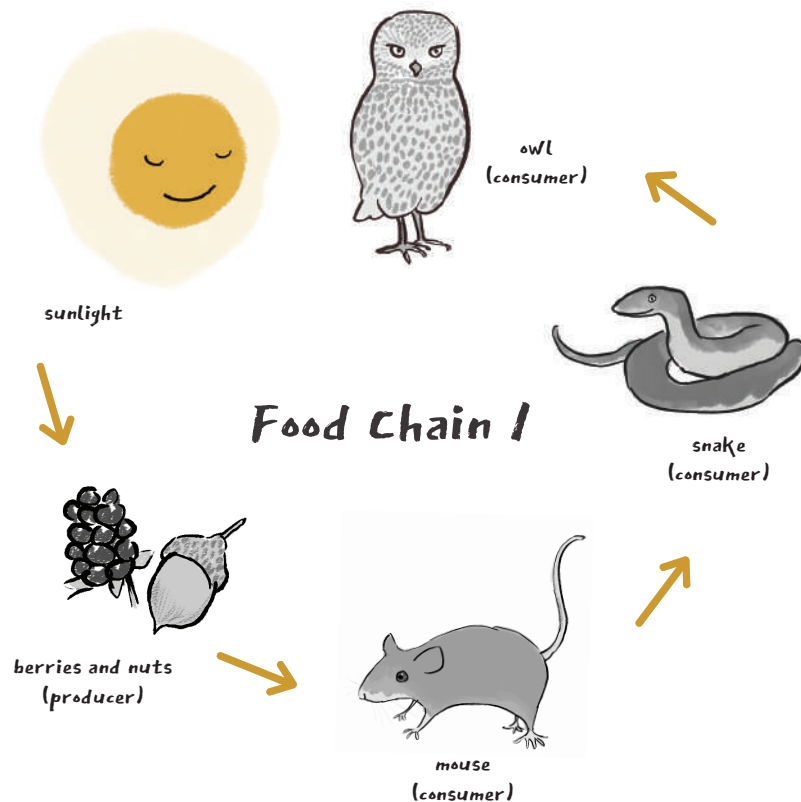


# An Introduction to Food Chains

When learning about food chains, it's useful to keep the following facts in mind:

- The sun provides food for the producer, which uses light from the sun to produce its own food.
- A food chain describes the hierarchy whereby one organism depends on the next as a food source.
- There exist a wide variety of food chains, depending on the ecosystem.
- A food chain typically begins with plants, which exist at the bottom of a food chain.

Look at the food chains pictured below, then answer the accompanying questions.



## Food Chain 1

1. What do the arrows depict?

.....

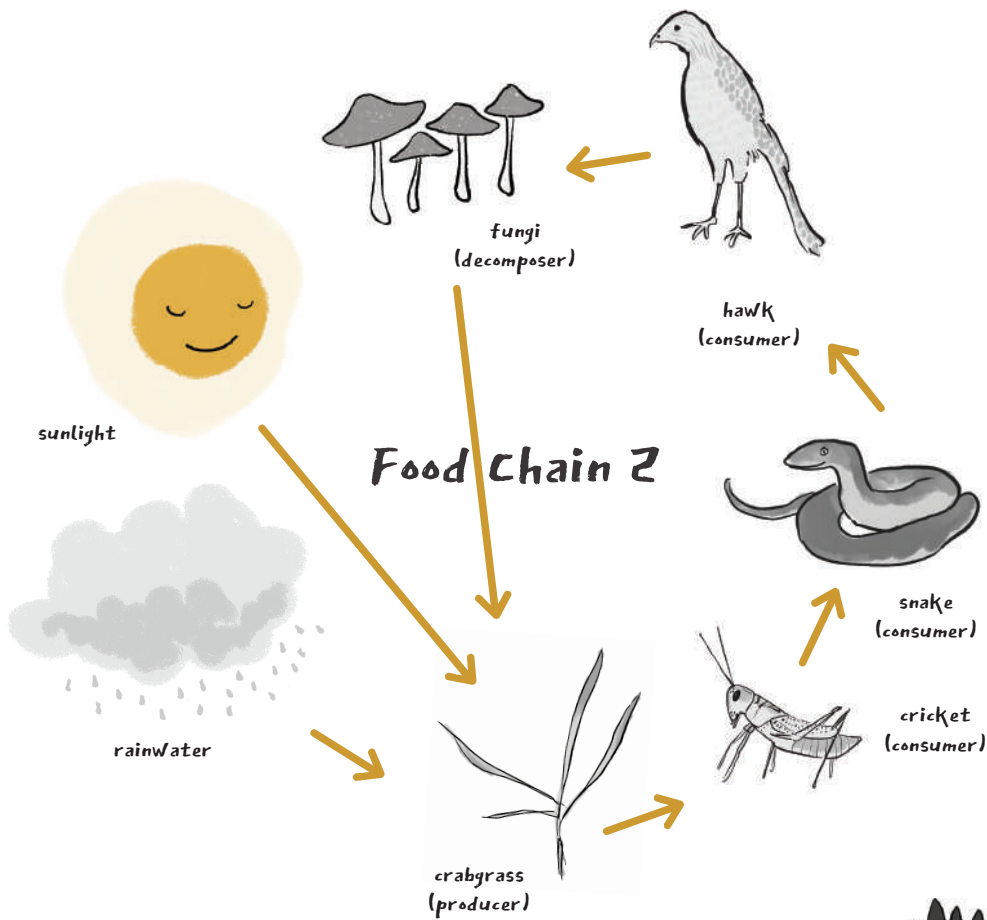
.....

2. Who is at the top of this food chain?

.....

.....

# An Introduction to Food Chains



## Food Chain 2

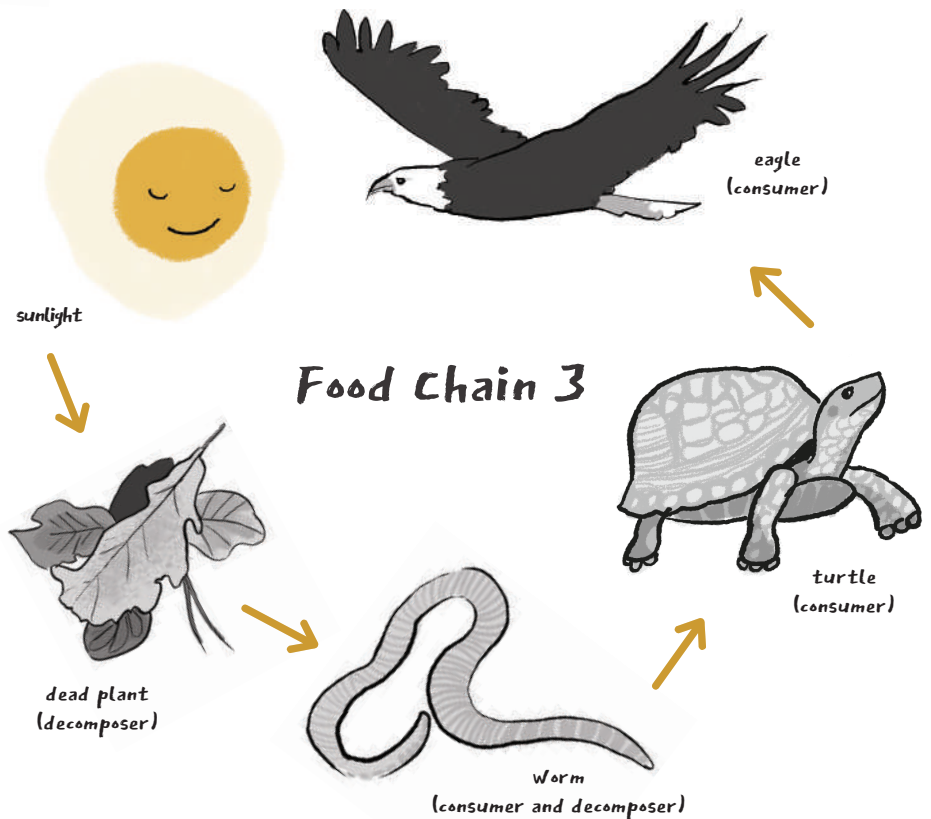
1. What does the hawk eat?

2. What three things does the grass need in order to survive?

## Food Chain 3

1. What do worms eat?

2. Worms play two important roles in the food chain. What are they?



# An Introduction to Food Chains

## Food Chain 4

1. What is the last consumer in this picture?

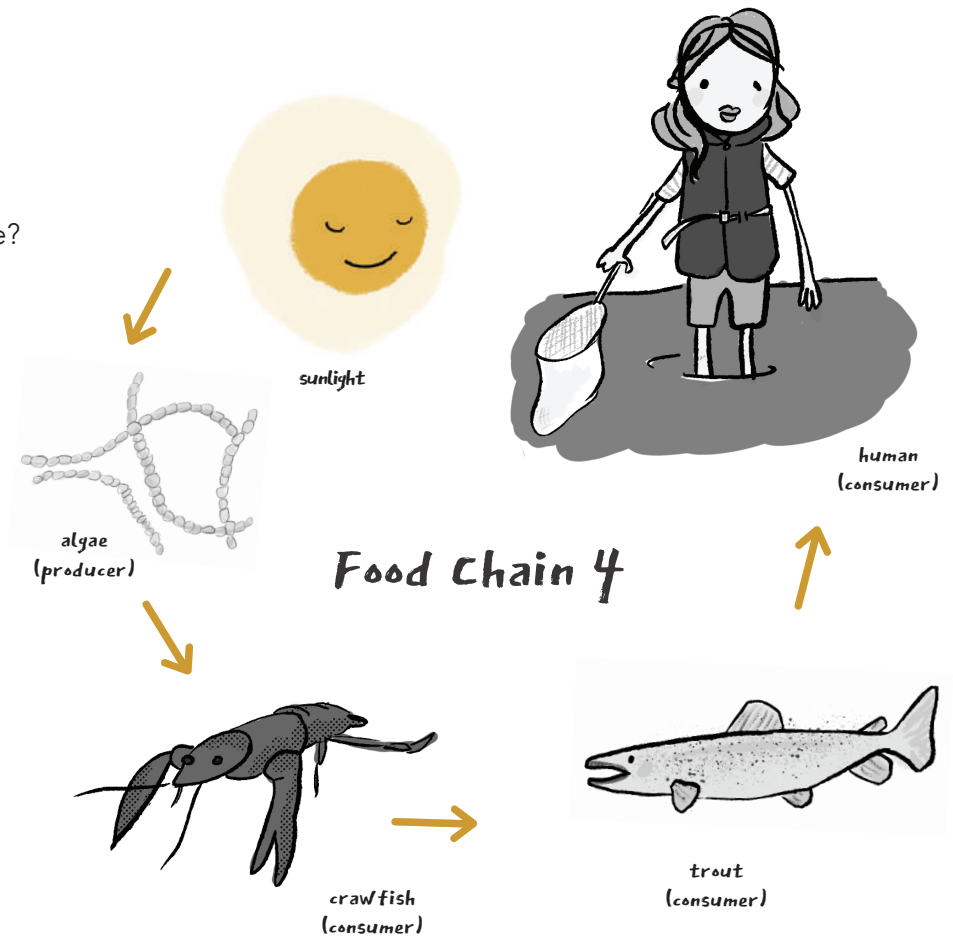
.....

2. What does the human consumer eat in this picture? Is there anything else they could also eat?

.....

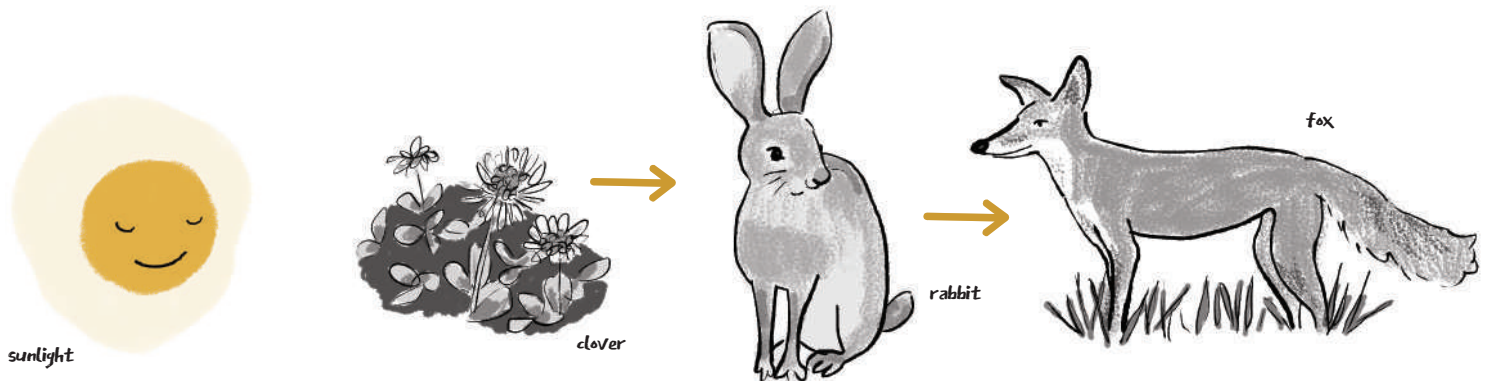
.....

.....



## Food Chain 5

1. Label each organism or animal in the food chain below with "producer," "consumer," or "decomposer."

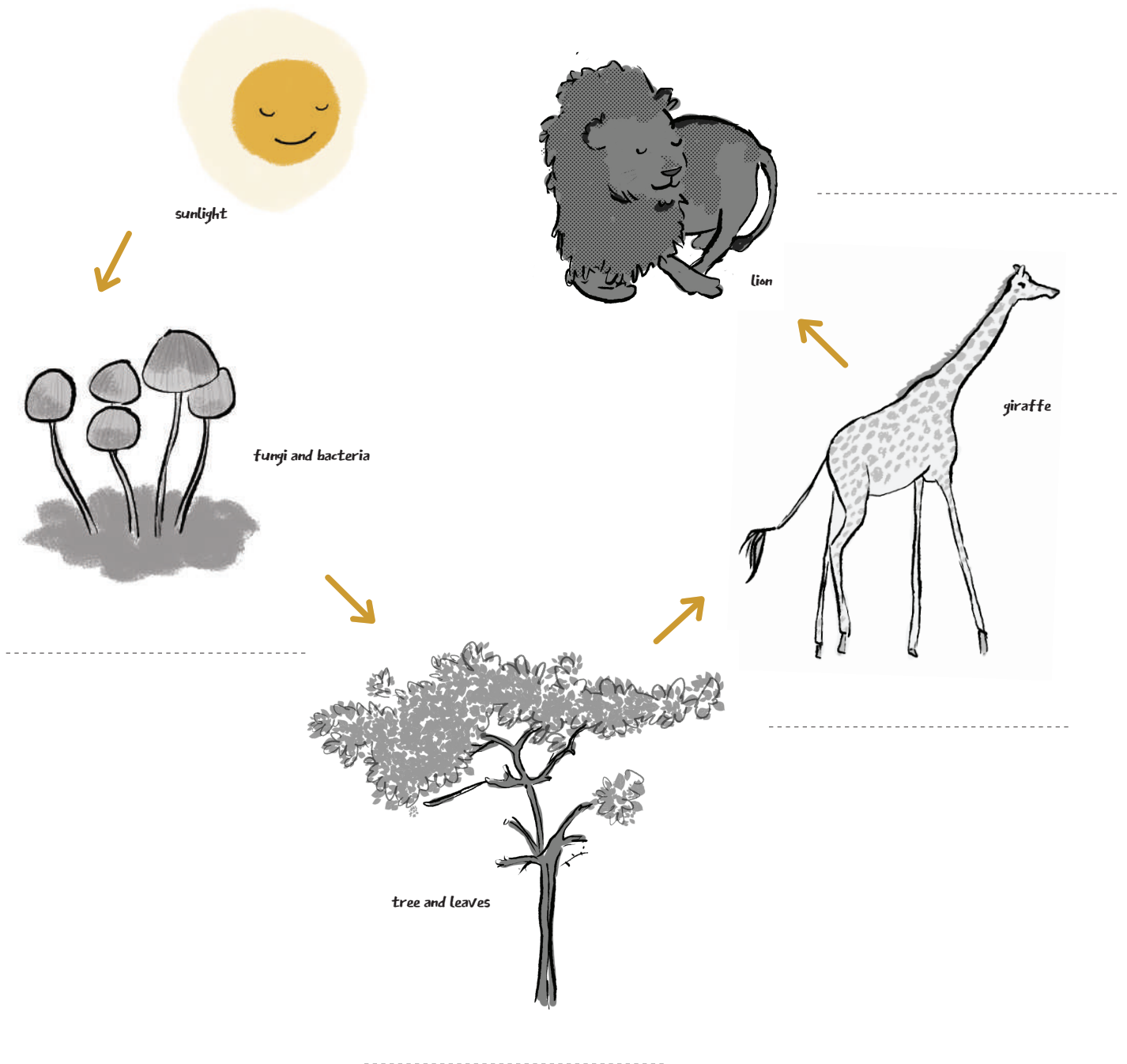


.....

# An Introduction to Food Chains

## Food Chain b

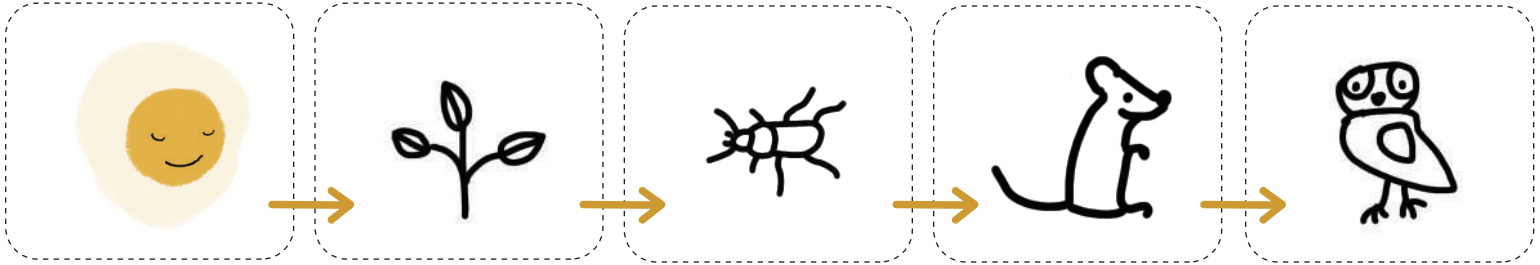
1. Label each organism or animal in the food chain below with "producer," "consumer," or "decomposer."



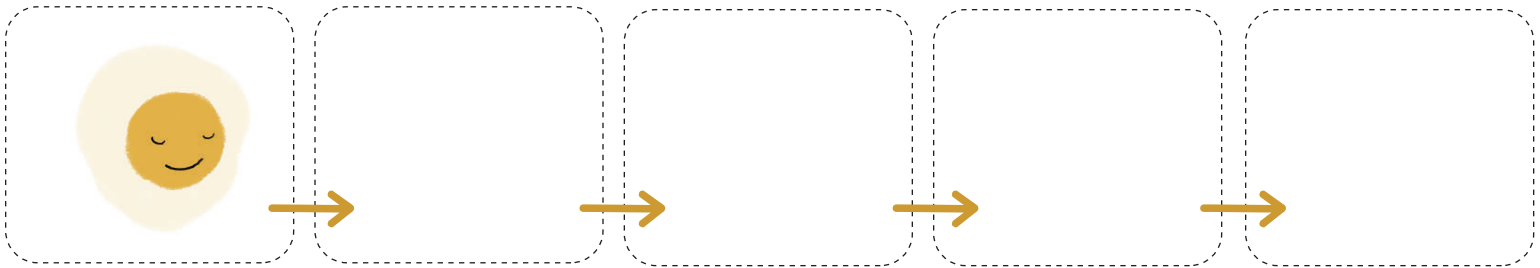
# Create Your Own Food Chain

Draw pictures of the animals and organisms in each food chain in the spaces provided.  
Make sure you draw them in the correct order!

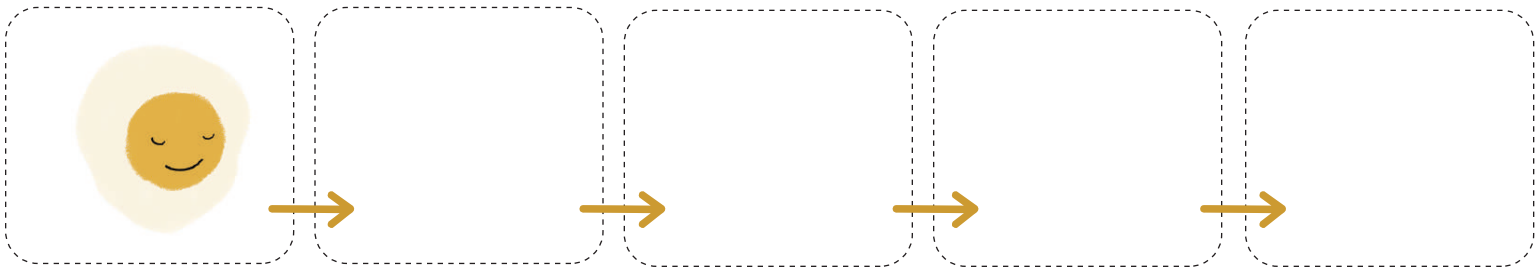
**Example** plant, insect, mouse, owl



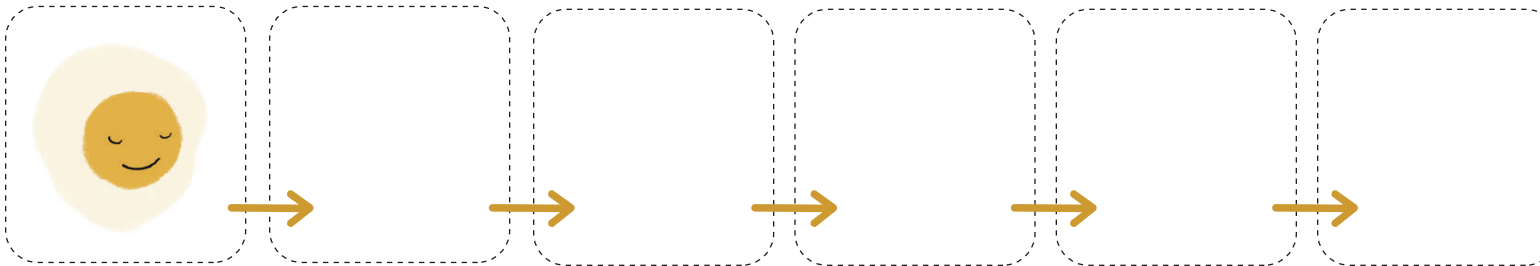
**1.** deer, grass, wolf



**2.** corn, mouse, snake, hawk



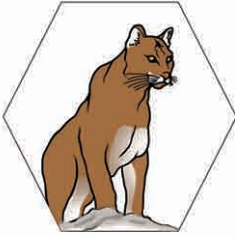
**3.** algae, codfish, polar bear, seal, shrimp





# Vocabulary

You're going to come across some new vocabulary in this workbook.  
If you get stuck, simply turn back to this page. The words are in alphabetical order.



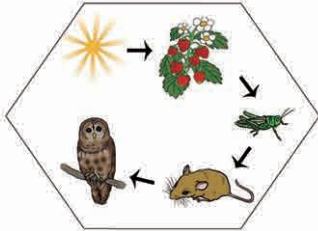
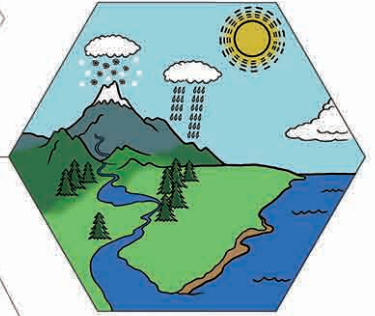
**carnivore** [kahr-nuh-vohr] : an animal that eats only meat.

**consumers** [kuhn-soo-mer] : living things that eat other living things.



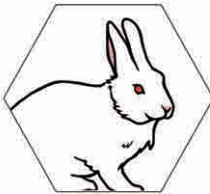
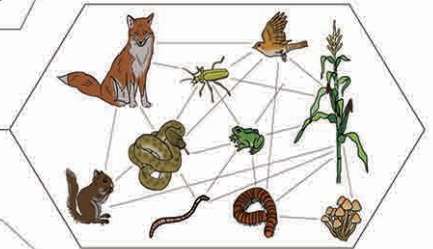
**decomposer** [dee-kuhm-poh-zer] :  
an organism that breaks down dead plants and animals.

**ecosystem** [ee-koh-sis-tuh m] :  
a community of living and non-living things that work together.



**food chain** [food cheyn] :  
shows how living things rely on each other for food and  
how energy is moved from one living thing to another.

**food web** [food web] : a group of connected food chains.



**herbivore** [hur-buh-vohr] : an animal that eats only plants.

**habitat** [hab-i-tat] : an area or environment where a plant or animal normally lives.



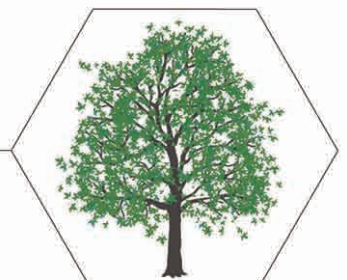
**omnivore** [om-nuh-vawr, -vohr] :  
an animal that eats plants and animals.

**predator** [pred-uh-ter] :  
an animal that hunts and eats other animals.



**prey** [prey] : an animal that is hunted by other animals.

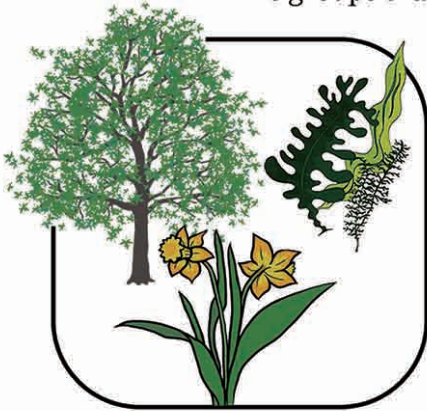
**producer** [pruh-doo-ser] (also called autotroph [aw-tuh-trof]) :  
a living thing that can produce or make its own food.





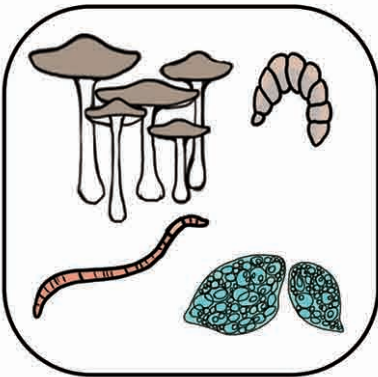
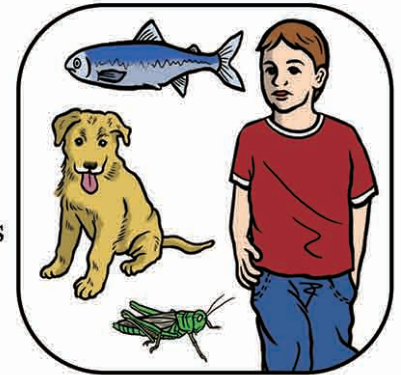
# Producers, Consumers, and Decomposers

Living things can be divided into many groups.  
The groups that make up a food chain are *producers*, *consumers*, and *decomposers*.



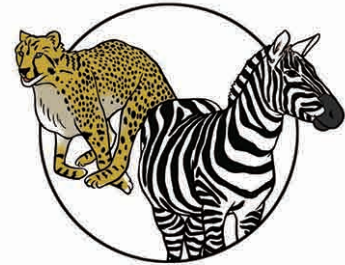
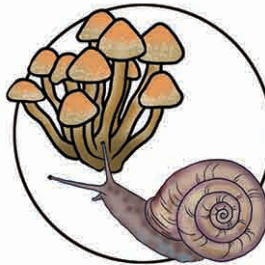
Producers are living things that produce, or make, their own food. Plants are producers; they make their food from water and sunlight in a process called photosynthesis. Some organisms in the ocean, like plankton and algae, also use the sun's energy to make their own food. Most of the living things on Earth are producers. They provide the energy for all other living things.

Consumers are living things that eat other living things, and include herbivores, carnivores, and omnivores. Herbivores are animals that only eat plants; ex. squirrels, butterflies, and zebras. Carnivores are animals that only eat other animals; ex. lions, sharks, and the Venus flytrap. Lions are also an example of predators, animals that hunt and eat other animals, called prey. Omnivores are animals that eat both plants and animals, ex. people, bears, and raccoons.



Decomposers are organisms that break down dead plants and animals, so they can return to the earth as nutrients for plants. Worms, mushrooms, slugs, and aquatic fungi are examples of decomposers. Other parts of the food chain also eat the decomposers, so nothing is wasted. Think of humans eating mushrooms, for example. Since all living things eventually return to the earth, the food chain is really the circle of life.

**Draw lines connecting the word to the correct definition.**



•

•

•

•

•

•

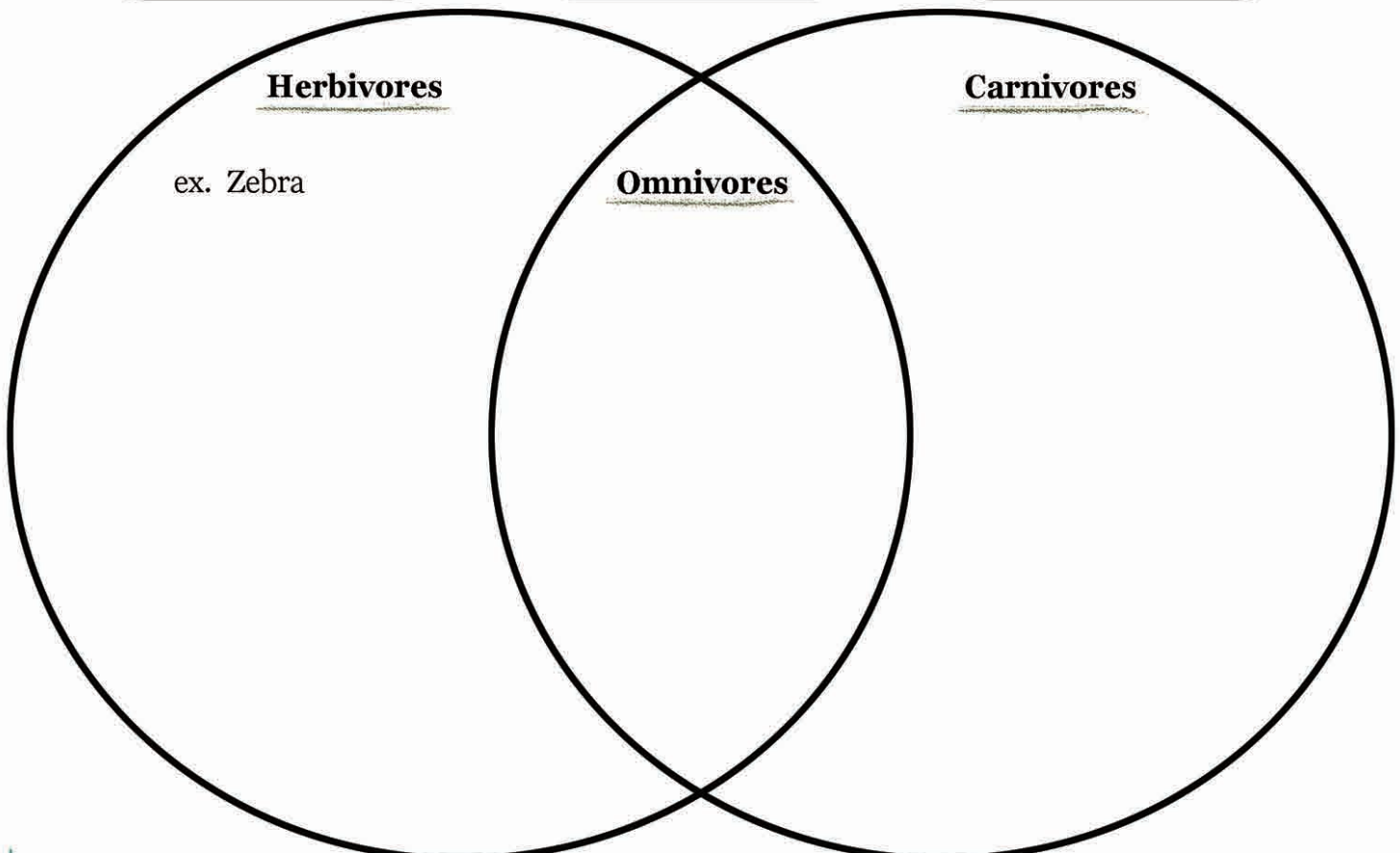
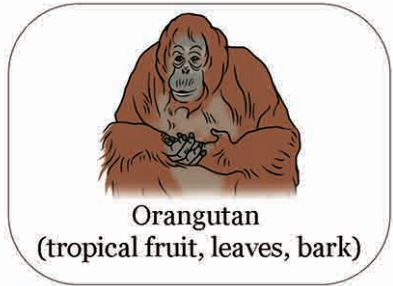
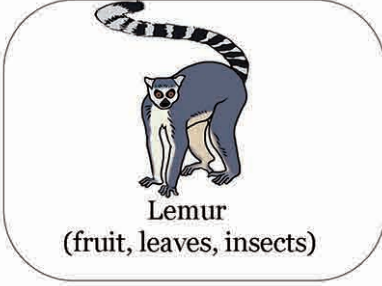
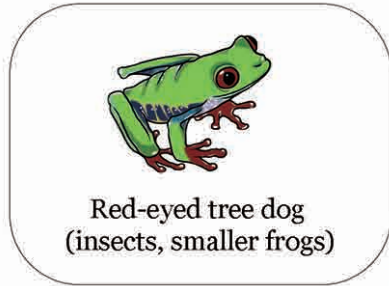
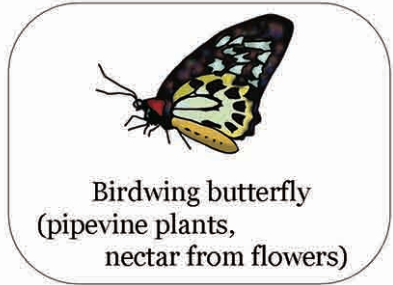
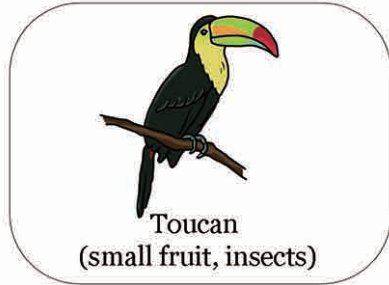
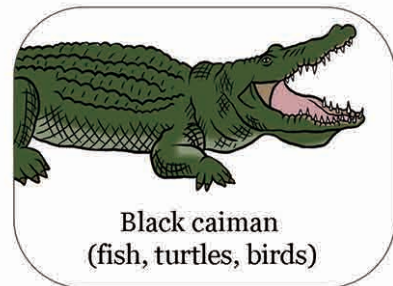
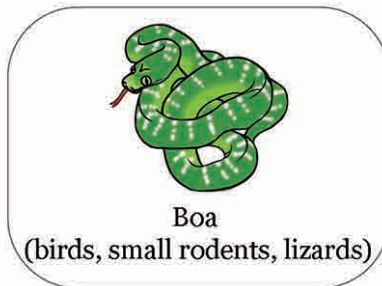
Living things that can produce  
or make their own food.

Living things that  
eat other living things.

An organism that breaks down  
dead plants and animals.

# Consumers Diagram

Take a look at these animals: Your job is to write the animals in the correct areas.  
The circle on the left is for herbivores only. The circle on the right is for carnivores only.  
The intersection of the two circles in the middle is for omnivores.





# Let's review before we move forward!

You've learned about predators, prey, carnivores, omnivores, herbivores, producers, consumers and decomposers. Now, let's double check before we move forward.

Hint: Use the vocabulary page at the beginning of the workbook if you get stuck.

1. Why are green plants called producers?

---

2. Why are animals considered consumers?

---

3. What is a predator?

---

4. What is prey?

---

5. What is the source of energy for plants?

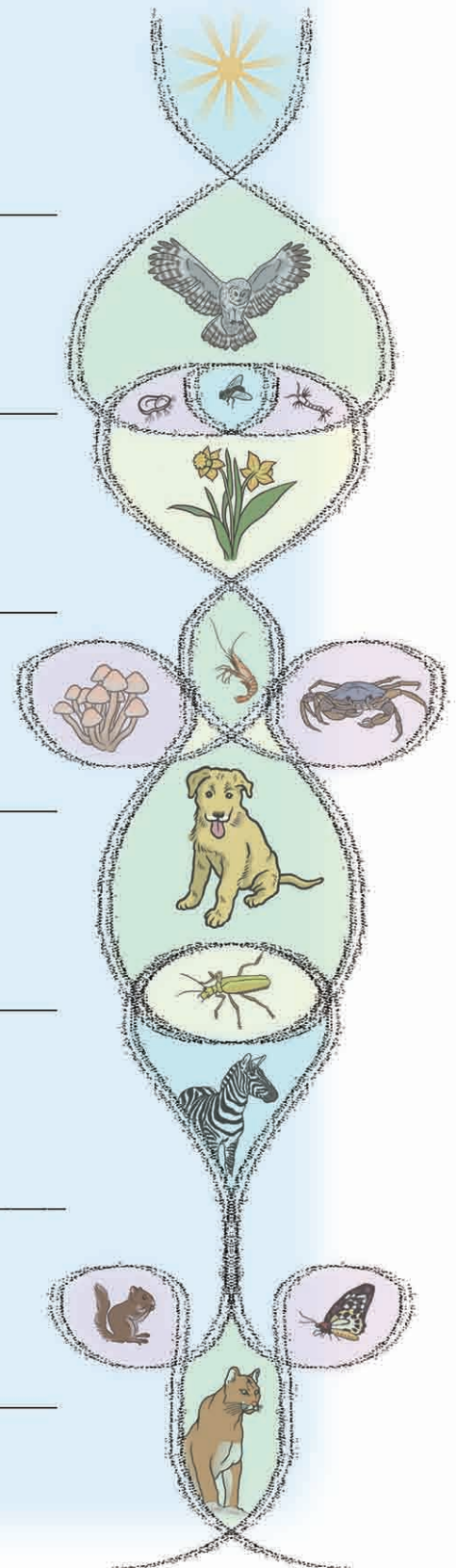
---

6. Why are decomposers important?

---

7. What would happen if the sun didn't exist?

---



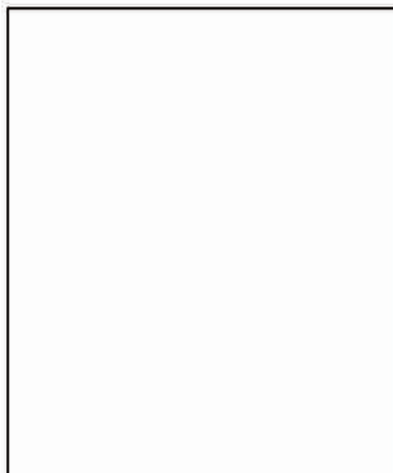
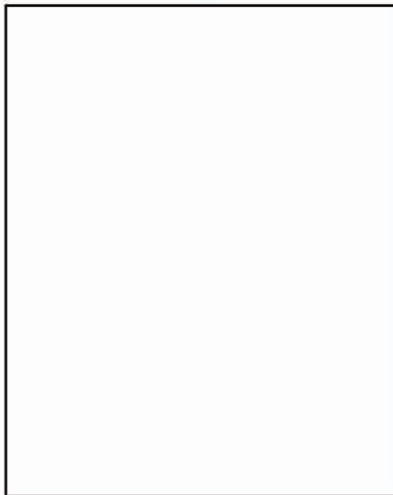
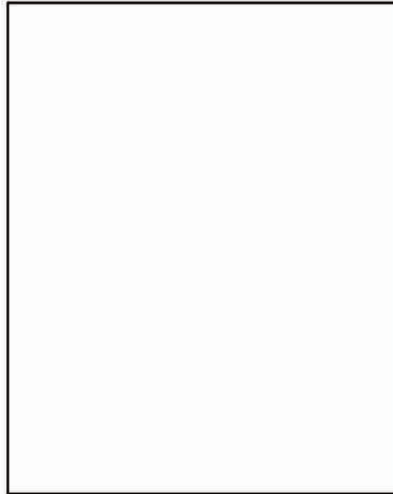
# The Game of Chains

How to play:

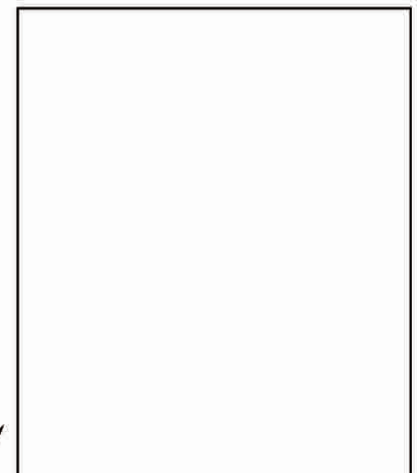
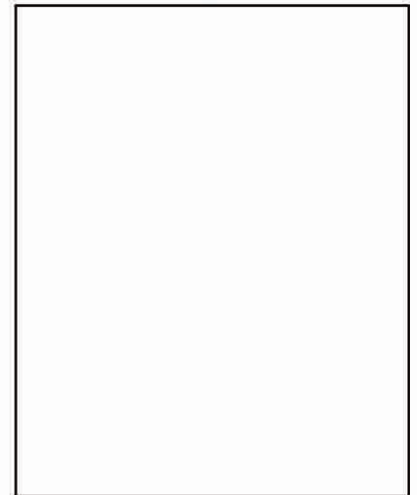
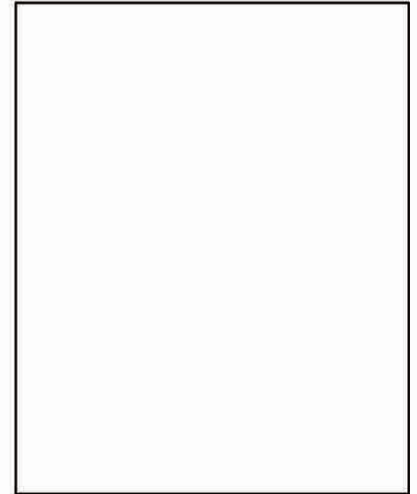
- Cut out the game boards and cards along the dotted lines.
- Each player gets a board.
- Shuffle the cards and set them in a stack facing down.
- Take turns drawing cards one at a time.
- Place the card in the right space on your game board.
- If there is no empty space on your board for a card you draw, put the card back into the stack at the bottom.
- The player who fills his or her game board first wins!



Player 1



Player 2



Cut out the game cards along the lines.

Meadow



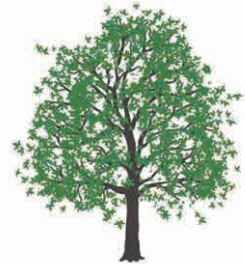
producer

Leaf



producer

Tree



producer

Apples



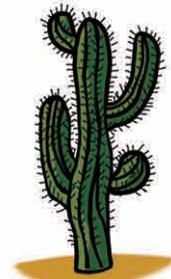
producer

Corn field



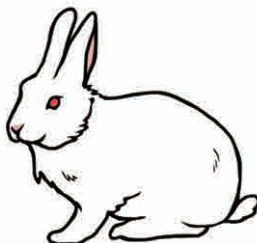
producer

Cactus



producer

Rabbit



herbivore

Antelope



herbivore

Squirrel

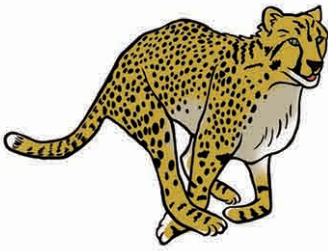


herbivore



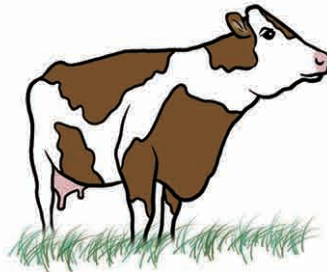
Cut out the game cards along the lines.

Cheetah



carnivore

Cow



herbivore

Sloth



omnivore

Wolf



carnivore

Giant Panda



herbivore

Lion



carnivore

Zebra



herbivore

Honey badger



carnivore

Human



omnivore

# Optional

Nature Appreciation Walk:  
Showing Our Gratitude Towards Nature

Design Challenge: Marble Labyrinths



Name \_\_\_\_\_

Date \_\_\_\_\_

## Nature Appreciation Walk: Showing Our Gratitude Towards Nature



- Go on a walk in nature and use your senses to observe your environment.
- Write and draw your observations below.
- Then, write your appreciations in a letter to nature on the following page.



### Plants

What plants do you see? Describe their size, shape, and color. Draw a picture of your observations. \_\_\_\_\_

---

---

---

---

### Animals

What animals do you see? Describe them and what they are doing at the time you observe them. Don't forget to carefully lift up a rock or log to observe any critters living underneath! Draw a picture of your observations.

---

---

---

---

---

### Weather

How is the weather? Is it a warm or cool day? Is the sun shining or is it cloudy? Is there a breeze? How does the weather make you feel? Draw a picture that represents today's weather.

---

---

---

---

---

### Sounds

What sounds do you hear? Where are they coming from? How would you describe the sounds? How would you draw the sounds you hear?

---

---

---

---

---



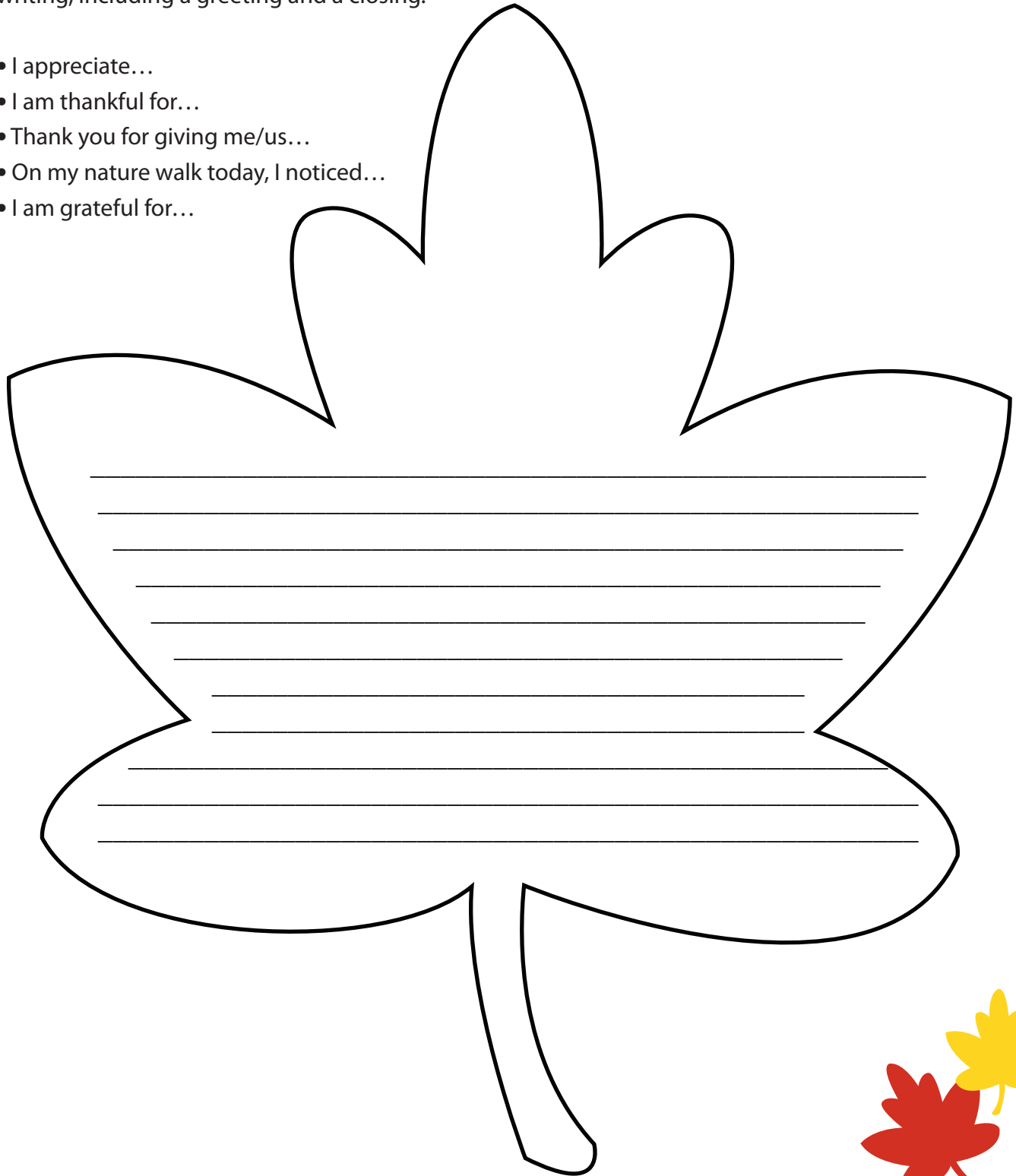
Name \_\_\_\_\_

Date \_\_\_\_\_

# Letter of Gratitude Towards Nature

From the observations you described on the first page, write a letter of gratitude towards nature. Use the following sentence stems to guide your writing. Remember to use the correct format for letter writing, including a greeting and a closing.

- I appreciate...
- I am thankful for...
- Thank you for giving me/us...
- On my nature walk today, I noticed...
- I am grateful for...

A large, black-outlined maple leaf shape that serves as a template for writing a letter. Inside the leaf, there are ten horizontal lines for text. The leaf has three main lobes at the top and a long, thin stem at the bottom.

# Design Challenge: Marble Labyrinths

In this activity your child will create a marble maze out of large straws and other materials. This challenge allows for open exploration time with the materials and then provides challenges for your child to complete based on how they respond to being able to first create a maze without restrictions. This activity gives your child room to try a challenge multiple times and many different ways, and gives your child the opportunity to solve a problem creatively.



## What You Need

- 1-2 marbles
- Large milkshake straws
- Any other recycled materials that your child would like to use in their maze
  - Bottle caps
  - Popsicle sticks
  - Cardboard
  - Construction paper
  - Paper towel rolls
- Box lid (a shoebox works well; collect a few of these to make multiple mazes)
- Scissors
- Tape or glue
- Pen and paper for brainstorming and notetaking

## What You Do

1. To begin, talk to your child about what makes a maze fun or challenging and how they can create their own. Ask your child if they have played games with mazes or seen mazes before.
  - a. What made the mazes difficult or easy?
  - b. What made the mazes fun?
  - c. Did the mazes use one kind of material or shape or multiple kinds of materials or shapes?
2. After discussing with your child, show them all of the items they will use to create their mazes and allow them to explore the materials.
  - a. Ask your child to create a maze for a marble to go through. If your child needs help cutting more straws, assist them with this step. However, try to let your child play with creating different mazes on their own.
  - b. Remind your child that they can use any of the materials available to make their maze.
3. Once your child has had sufficient time to make a first maze, have your child test it. Instruct your child to place a marble at their maze's entrance and have them solve their maze. Ask your child what they noticed while making and solving their maze.
  - a. What made the maze easy or difficult to solve?
  - b. How did the marbles interact with the different materials?
  - c. How long did solving the maze take?
  - d. What were the steps used in designing their first maze?
  - e. How could using the design process help create more complex or well thought out mazes?
4. Now, introduce the design challenge to your child. Tell them that they will use what they've already learned by making their first maze to solve different maze challenges. Give your child a challenge to start. Challenges could include:
  - a. Make a maze using three different kinds of materials.

- b. Make a maze using only four straws.
  - c. Make a maze that looks like a smiley face, heart, or other shape.
  - d. Make a maze that uses only straws or another type of material.
  - e. Make a maze that takes a friend or family member over 30 seconds to solve.
  - f. Make a maze in under 1 minute.
  - g. Use every material on the table to make a maze.
  - h. Make a maze that has pieces cut out of the base box lid, which make the maze more difficult to solve. (You might have to assist your child with cutting the lid).
  - i. Make a maze with no sides to keep the marble inside of the maze. (You might have to assist your child with cutting cardboard or their box lid).
5. Ask your child to brainstorm different ways to create a maze for one of the challenges. Have your child draw or write their ideas on a piece of paper. Your child could also lay pieces in their maze box without taping or glueing anything down.
6. After your child has several ideas, ask them to choose the design that they think will work best. Remind your child of the goal of the maze: to complete the challenge assigned to them.
- This is an important step of the design thinking process, because it teaches your child to prioritize the functionality of their prototype (design) over their personal preferences. This also prevents them from getting too emotionally attached to one design.
7. Now, it's time for your child to build their maze! Give your child space to experiment, but step in to help if necessary. Allow your child's ideas to evolve as they try out different ways of making their maze and encourage your child to write down what works and what doesn't work.
8. After your child has finished their maze, have them test it.
- a. If your child's maze has successfully completed the challenge, congratulate them on their work!
  - b. If your child's maze does not complete the challenge, ask them what they think went wrong. Discuss what worked and didn't work in the building process and ask your child to go back to the brainstorming stage and try out a different design.
9. Once your child has successfully completed a challenge, give them another one of complete or allow them to make up their own challenges, restrictions, and requirements for their mazes.