Week 3

5th Grade

Independent Study Packet

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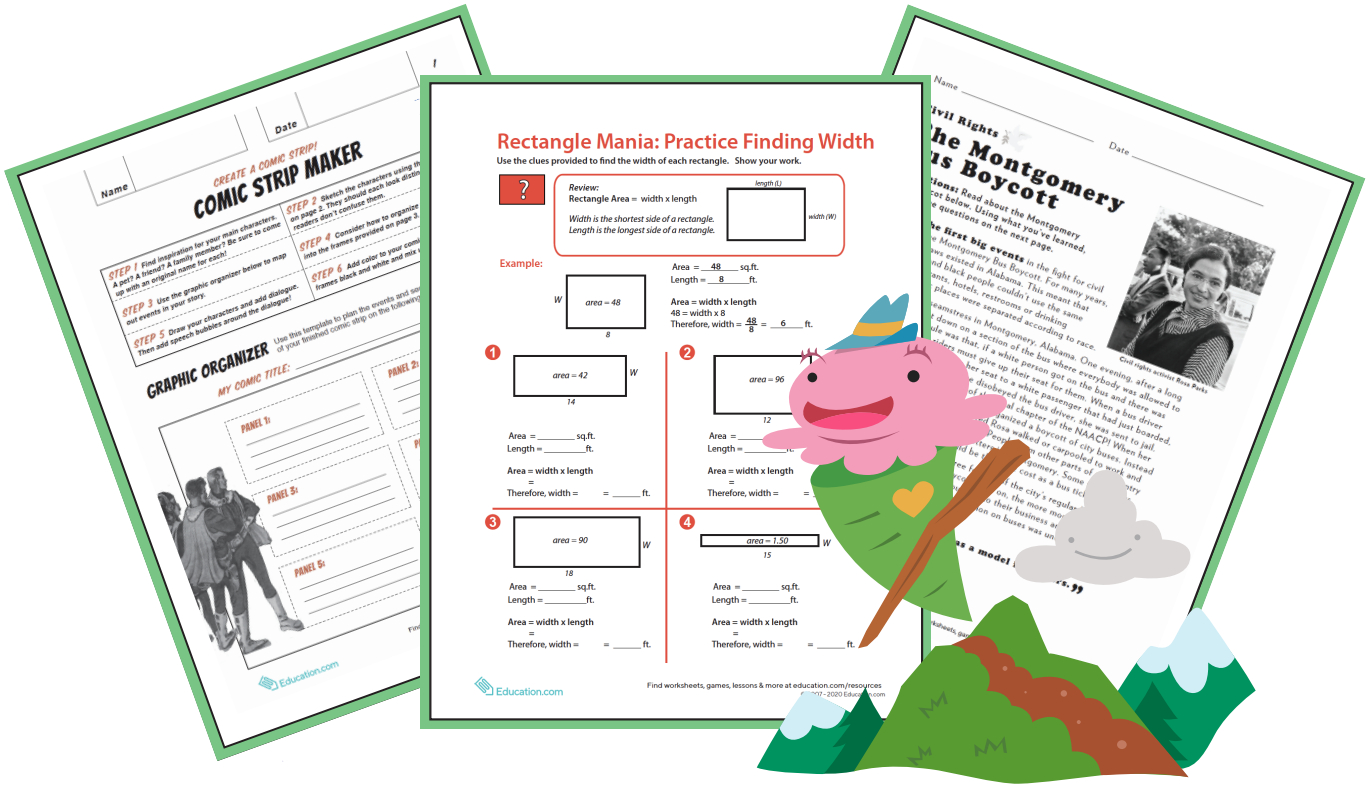
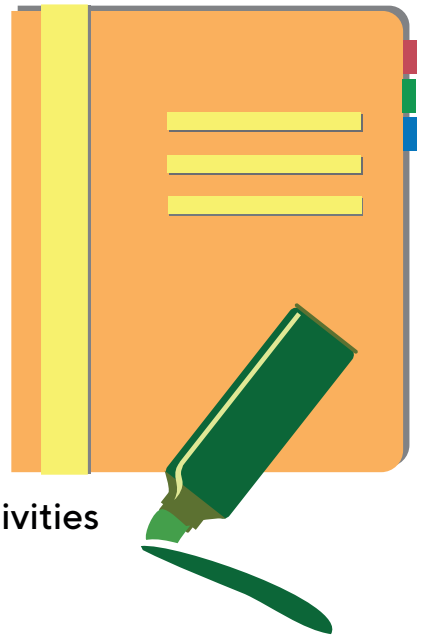


5 MORE Days of Independent Activities in Reading, Writing, Math, Science, and Social Studies

Helpful Hints for Students and Families

Materials You Will Need:



- Pencils
- Folder
- 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

Directions & Tips

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

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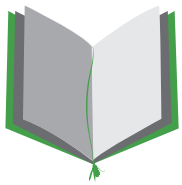
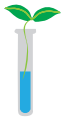
Activity Menu

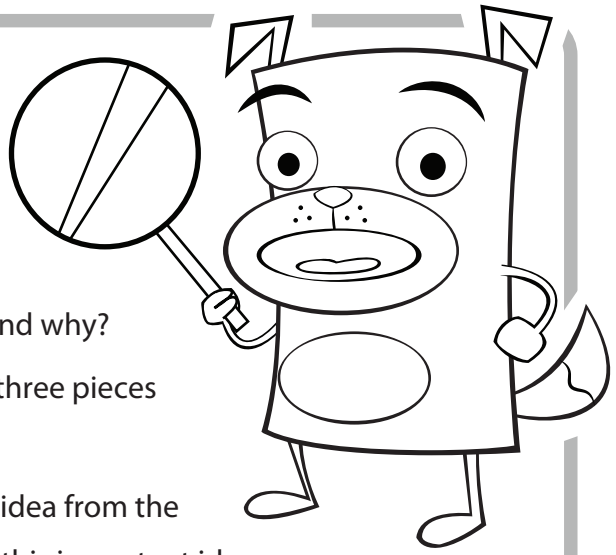
	Day 1	Day 2	Day 3	Day 4	Day 5
Reading 	Read for 20 minutes and answer three text dependent questions on the sheet on another piece of paper or in a journal. **Challenge**: Try not to repeat a question!				
	Cause and Effect: Structure Causes and Effects of Natural Disasters	Pair the Cause and Effect First Day of School: Cause and Effect	Clue Words for Cause and Effect Rosie the Riveter	The Montgomery Bus Boycott	History of Television Cause and Effect Graphic Organizer
Writing	Write Your Own Comic! Write Your Own Western Comic Make Your Own Superhero Comic	Comic Book: Using Inquiry	Comic Strip Maker	Comic Strip Drawing Prompts	Write Your Own Comic Book Story
Grammar Practice	Grammar Review: Conjunctions	Conjunctions: The Cure for Your Run-ons	The Pentagon Tour Tips and Tricks	Using Conjunctions to Connect Facts	Gluing Words: Coordinating & Subordinating Conjunctions
Math	Practice with Area Rectangle Area	More Area, and Algebra Too!	Find the Missing Lengths and Widths	Zombie Game	Ordered Pairs and Mystery Pictures
Social Studies	**Learn about some history and create timelines.** The History of African American Spirituals History of Money History of Movies Movie Timeline Timeline of Sonia Sotomayor's Life (So Far) Apollo 11			**Optional** Make a Better Paper Airplane Make a Rube Goldberg Machine	
Science 	**Continue thinking about cause and effect in science—plus, a few optional design challenges!** Environmental Impact Tsunami Science Cause and Effect Comic Strips				

Parent/Guardian Signature: _____

Name _____ Date _____

Text Dependent Questions for Independent Reading

Fiction Texts



- Choose a sentence that describes a character, setting, or action in an interesting way. Why did the author choose to use those particular words to tell the story? Which words in the sentence are the most important and why?
- What patterns do you notice in the story? Cite at least three pieces of evidence to support this.
- After reading a chapter, tell about the most important idea from the story. Find one or two sentences in the text that show this important idea.
- How does the author use dialogue to tell the reader what is happening? Give an example from the text.
- If you don't know what is going to happen next, make a prediction. Give at least one piece of evidence from the text about why you predict that.
- What is the **tone** of the book? (Is it serious, funny, magical, sad?) Find at least two phrases or sentences that make the reader feel this way.
- What lesson is the author trying to teach the reader? How do you know? What in the book tells you that?
- What details in the text describe one of the characters for you?
- Is there a point in the story where things make a big change? What is it?

Nonfiction Texts

- How do the **pictures** in your text help you understand what you are reading? Give an example.
- How do the **captions** in your text help you understand what you are reading? Give an example.
- Pick a diagram, chart, or graph in your book. What is it trying to teach you? What conclusions can you draw from it?
- Is there a glossary in the back of the book? What word can you find that you didn't know before? Why is that word important to understanding the book?

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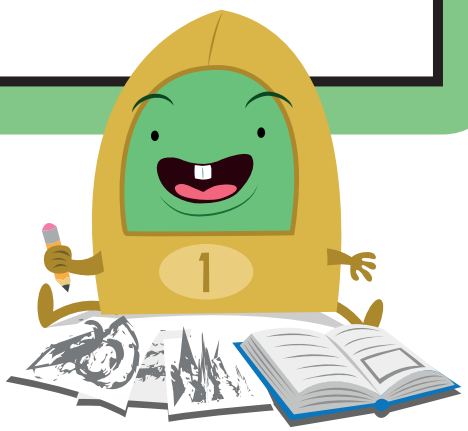
Day 1

Reading	Learn about the structure of cause and effect texts and then identify them.
Writing	Finish the story in these three comic starters.
Grammar Practice	Review or learn what conjunctions are.
Math	Practice your algebra and your understanding of calculating area.



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Name _____ Date _____

Cause and Effect: Structure

Cause and effect are connected events. A **cause** is the *first event* and the **effect** is the *second event*, or resulting action, that happens after the cause.	**Cause** (First)	**Effect** (Then)
	It rained for three months in India.	There were floods.

Directions: Label the signal words "SW," and underline and label the cause "C" and the effect "E" in different colors. Some signal words may include the following: "because," "due to," "lead to," "since," "as a result," and " if-then" sentences.

Precipitation, or rain, happens because warm air is filled with heavy water droplets and rain falls. When the sun heats up water, it leads to water droplets rising into the air. Water droplets join together in the sky and make clouds. The droplets get bigger in the clouds due to water droplets bumping into each other. Since the droplets get heavier and heavier, they eventually fall as rain.

While most rain does not last very long, monsoon seasons can last for months. A monsoon is a seasonal wind system from the Indian Ocean. It blows from the southwest in the summer and the northeast in the winter. When the wind system hits the southwest, heavy rain begins.

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Name _____ Date _____

Every summer, India has storms that never seem to end. The rain can last for up to five months. As a result, large amounts of water cover southern Asia and the Indian Ocean. People and wildlife rely on these seasonal monsoons because the storms help water the crops and replenish rivers. If a monsoon strikes too early in the summer, then dangerous floods can wipe out whole towns. But if a monsoon happens too late, then the lack of water can cause droughts and famine. Famine and drought can cause thirsty plants and hungry people. The balance between the right amount of rain can affect many people.

Challenge: Find cause-and-effect relationships that do not have typical signal words or phrases.

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Name _____ Date _____

Causes and Effects of Natural Disasters

Part 1: Read each sentence. Then, circle the cause and underline the effect found in each sentence.

For example: The volcano erupted and large amounts of dust filled the air.

Reminder: The **cause** is an event or idea that explains why something happens. The **effect** is what happens as a result of the cause.

1. When the earthquake shook the Philippines, many buildings collapsed.

2. The hail storm produced golf-ball-sized ice that broke my car's windshield.

3. The tornado blew through town and flipped the cars over.

4. The power went out because the power lines snapped from the ice storm.

5. The brown bear's habitat was destroyed after the wildfire broke out.

Part 2: Use the word bank to fill in the sentence frames. Then, circle the cause and underline the effect found in each sentence.

hurricane	**lightning**	**earthquake**	**blizzard**	**avalanche**	**fire**	**tsunami**	**flood**

1. A severe _____ hit the mountains and triggered a huge _____.

2. The tree caught on _____ after one of its branches was struck by _____.

3. The heavy rains from the _____ led to a large _____.

4. There was a _____ warning after the _____ struck off the coast.

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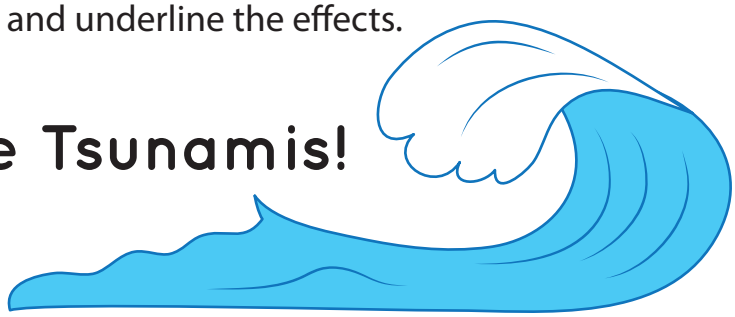
Part 3: Read this nonfiction excerpt on tsunamis. Highlight the sentences containing causes and effects. Then, circle the causes and underline the effects.

Explore Tsunamis!



On December 26, 2004, a massive tsunami rose from the Indian Ocean. This tsunami was one of the most destructive natural disasters anyone had ever seen before. Where did these disastrous waves come from, and how was this tsunami able to hit so quickly without warning?

There are several different situations that can cause a tsunami: underwater volcanic eruptions, meteor strikes, coastal landslides, and, most commonly, underwater earthquakes.

A typical tsunami approaching land will slow down to speeds of 30 miles per hour as the wave grows to heights of up to 90 feet above sea level. A tsunami almost always promises flooding, destruction, and sometimes loss of life.

Scientists have the equipment to detect underwater earthquakes just before a tsunami can hit the coast. However, because these giant waves form so quickly and hit coastal areas at hundreds of miles per hour, these detections often come too late. If you live near the coast, be aware of tsunami zones. Make sure your family has a plan in case you are caught near the wave.

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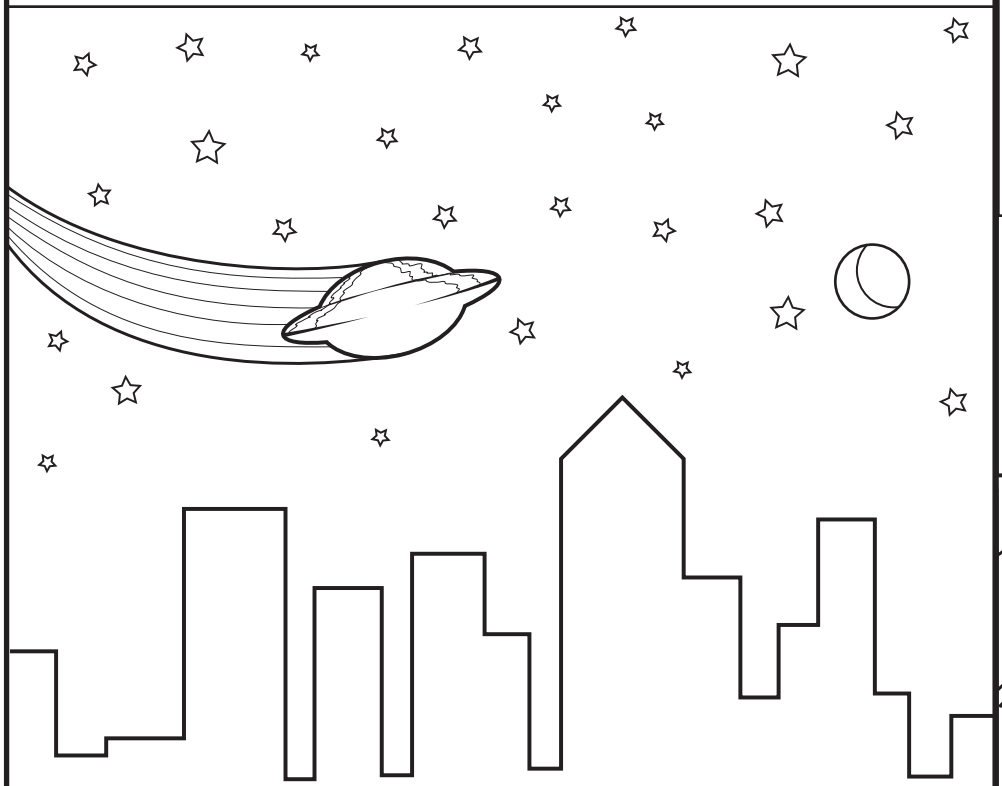
WRITE YOUR OWN COMIC ADVENTURE!

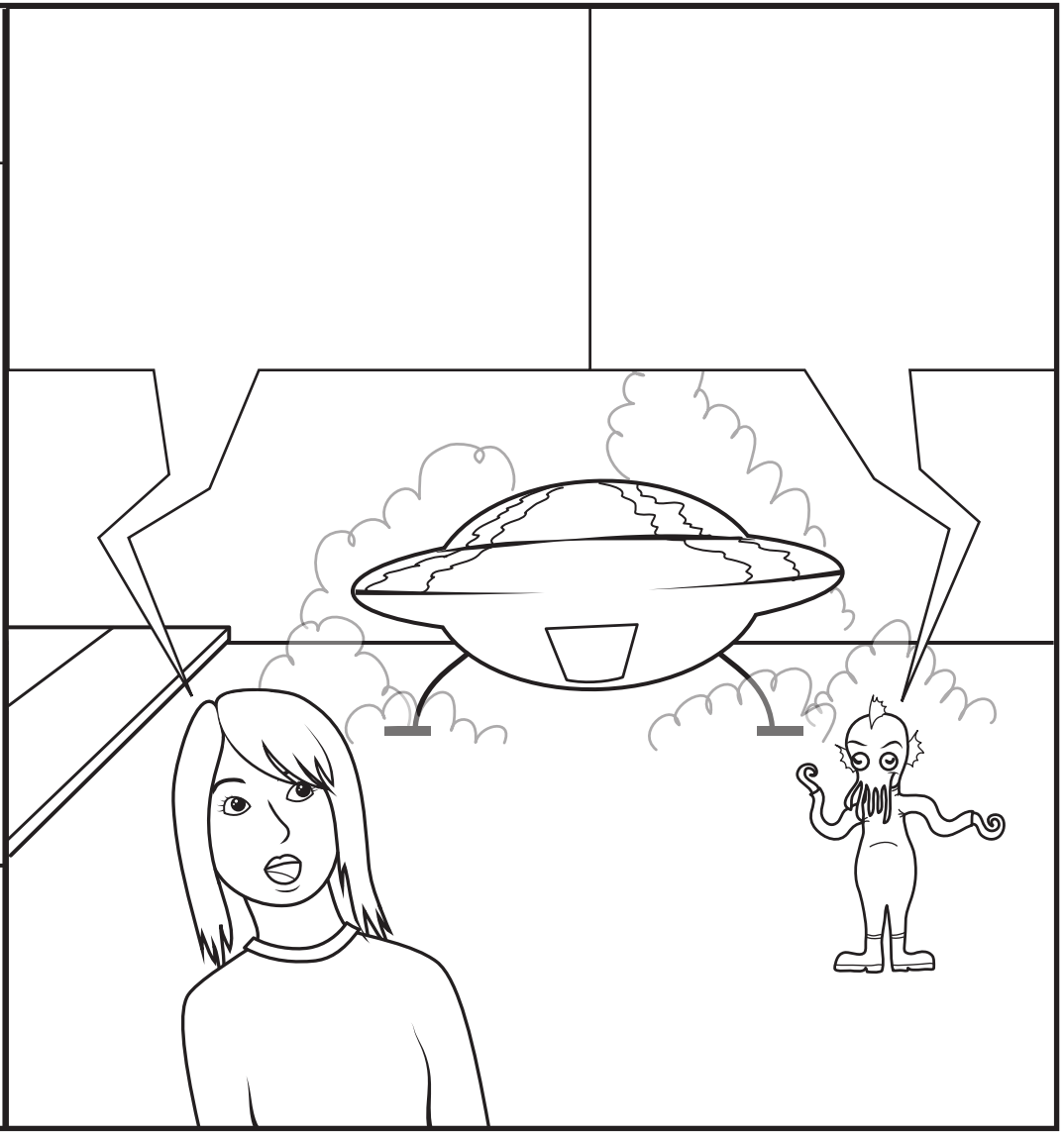
"THE NIGHT OF THE ALIENS, PART 1"

Create your own comic with this worksheet! Start with the first panel and fill in the rest of the text in the box to create the setting. Then, color the panels and fill in the dialog!

Hint: What do you think the characters are feeling? How would they react?

On a dark night, in a city not far from here...





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WRITE YOUR OWN COMIC ADVENTURE!

"THE NIGHT OF THE ALIENS, PART 2"

Create your own comic with this worksheet! You started with page one, and now it's time to draw your own illustrations and write your own dialog to finish the story. How will you end this adventure?

Hint: How will the characters get to the ending you want?

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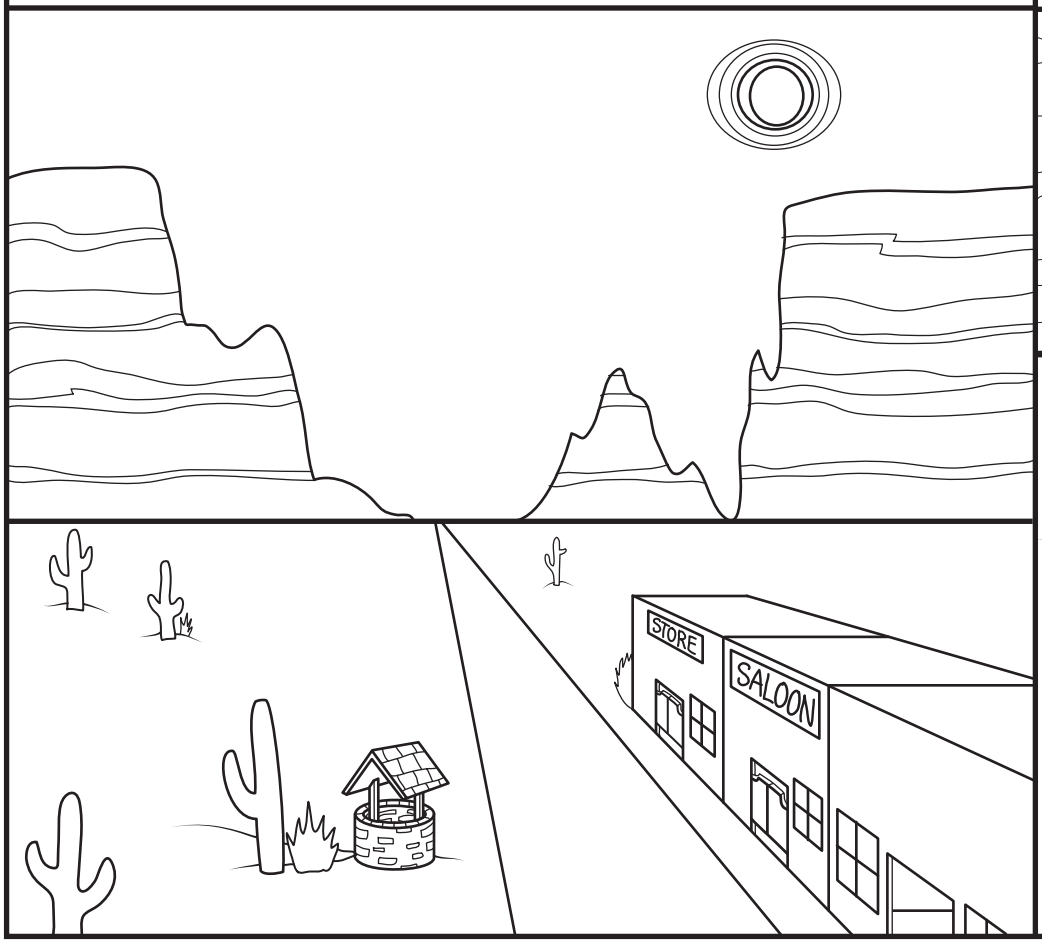
WRITE YOUR OWN COMIC ADVENTURE!

"WHERE'S THE WATER OUT WEST? PART 1"

Create your own comic with this worksheet! Start with the first panel and fill in the rest of the text in the box to create the setting. Then, color the panels and fill in the dialog!

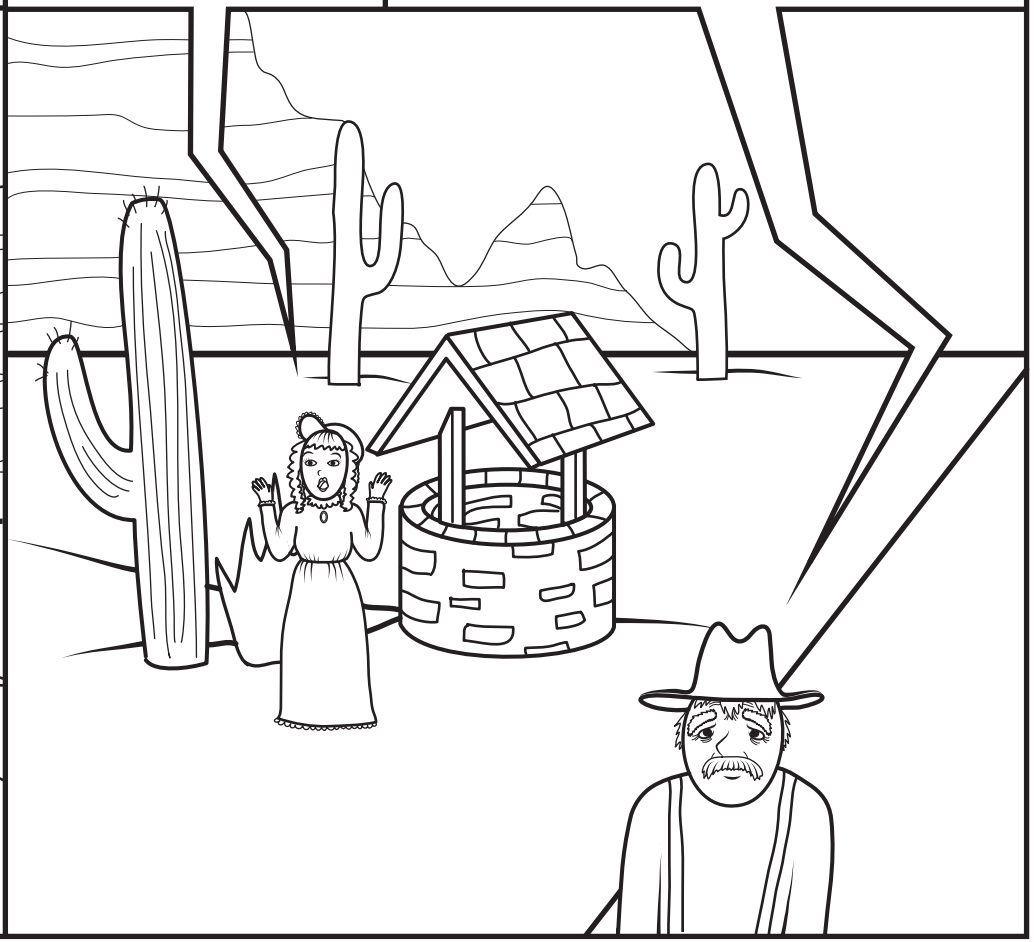
Hint: What do you think the characters are feeling? How would they react?

Out west, a long time ago...



Oh my goodness! What on Earth is that over there?

Oh no! All the water in our well is gone! What happened to our water? What are we going to do without water?



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WRITE YOUR OWN COMIC ADVENTURE!

"WHERE'S THE WATER OUT WEST? PART 2"

Create your own comic with this worksheet! You started with page one, and now it's time to draw your own illustrations and write your own dialog to finish the story. How will you end this adventure?

Hint: *What do you think the characters are feeling? How would they react?*

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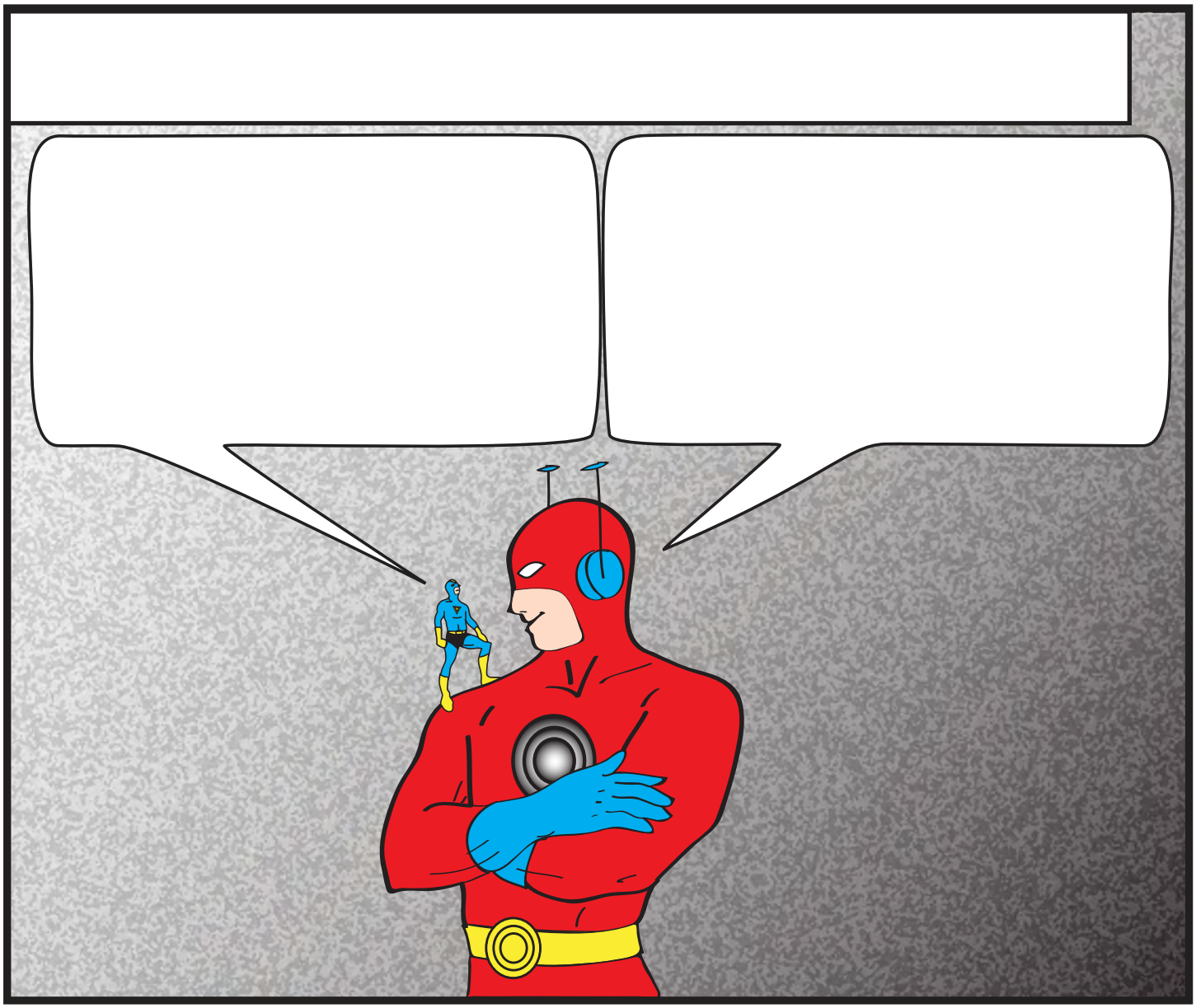
The Adventures of Audio Albert & Small Paul

What's going on in this scene?
Fill in the caption box and word balloons to make up your own comic!



Is there more of this story you want to create? Continue sketching and writing on a separate piece of paper.

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GRAMMAR REVIEW
CONJUNCTIONS

Remember: A conjunction connects two thoughts, phrases or sentences.

Underline the conjuctions in the following sentences.

Susan and Maggie went to the fair.

The dinner tasted good, but wasn't very hot.

Monica was late to school because she got lost.

The dog whines and yelps because he is afraid of the cats.

We will go to the beach but not to the mountains.

Do you like oranges or apples?

Write a conjunction in the blank to complete the sentence.

On our trip we went to Paris _____ London.

July is a good time to go swimming _____ it is hot.

You have a choice of blue _____ yellow.

The teacher gave James a good grade _____ he worked hard on the report.

The underlined conjunctions in the following sentences are scrambled. Change the conjunctions to make the sentence correct.

Lindsey walks <u>because</u> jogs to stay in shape.

Friday is a fun day <u>or</u> Saturday is even better.

The woman laughed <u>and</u> the monkey did funny tricks.

Does Rebecca <u>but</u> Shannon have the best grades?

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4th Grade

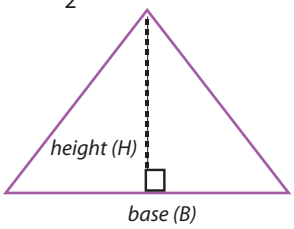
Find a New Home ?

Help Mr. Rabbit find his new home. The total area of his place has to be at least ***60*** square feet. This includes the area of a roof (triangle) plus the area of the house (rectangle).

Review:

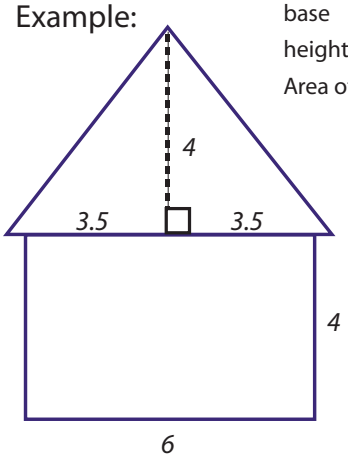
Rectangle Area = length x width

Triangle Area = $\frac{1}{2}$ x base x height



The base of a triangle can be any one of its sides.
The height is the distance from a base to its opposite point, or vertex.
A base must be perpendicular to its height.

Example:



base = 3.5 + 3.5 = 7

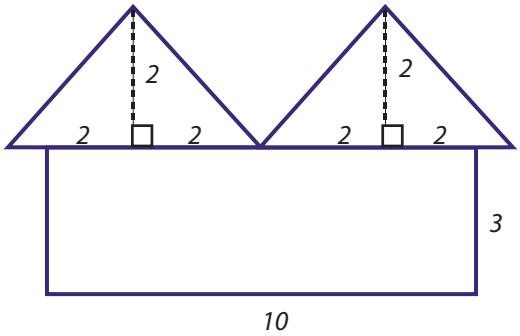
height = 4

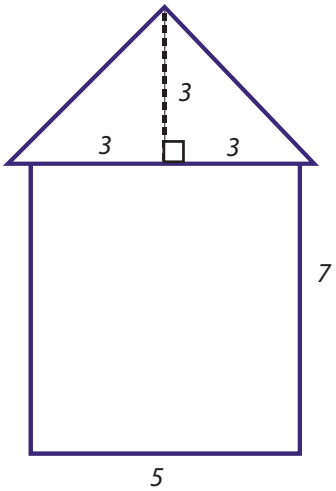
Area of the roof = $\frac{1}{2}$ x base x height

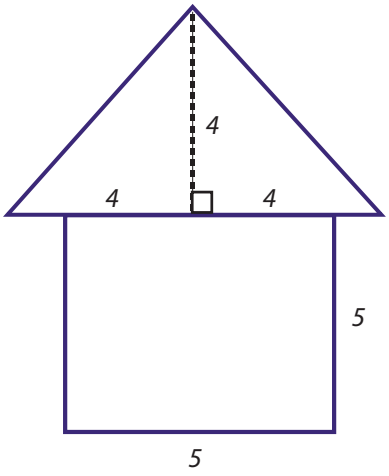
= $\frac{1}{2}$ x 7 x 4 = 14

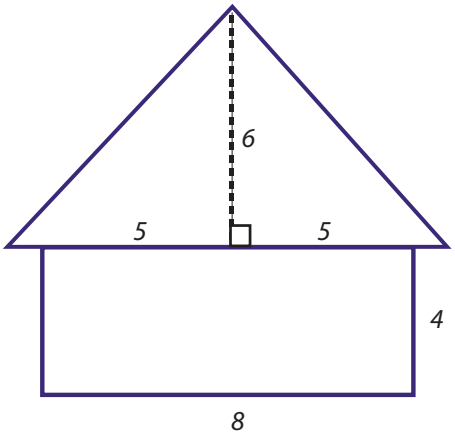
Area of the rectangle = 6 x 4 = 24

Total area = 14 + 24 = 38 square feet.









Which home should Mr. Rabbit move into? Circle it.

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Rectangle Mania: Practice Finding Area II

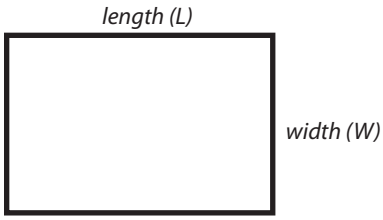
Find the missing values of each rectangle to find the area of the big rectangle.

?

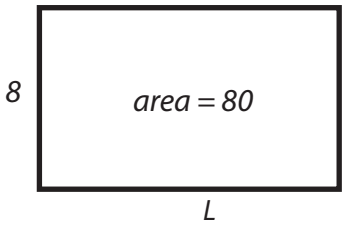
Review:

Rectangle Area = width x length

Width is the shortest side of a rectangle.
Length is the longest side of a rectangle.

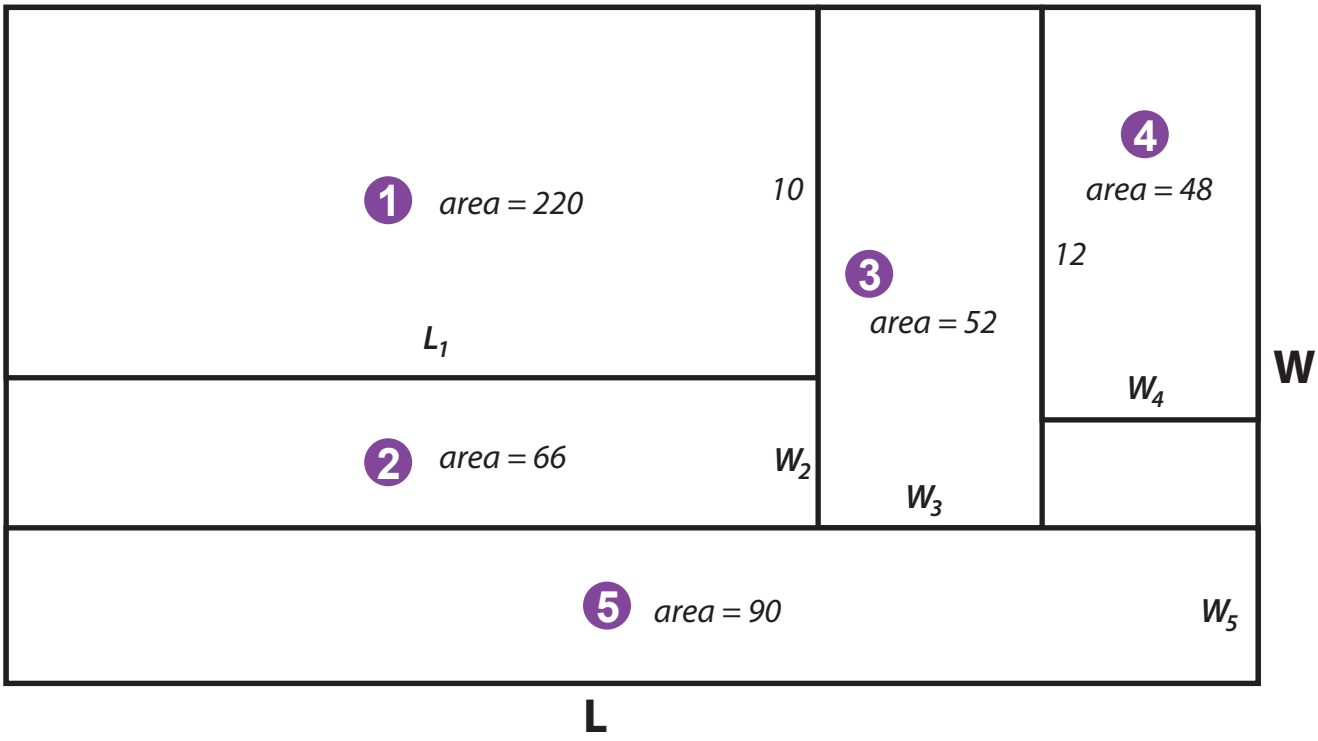


Example:



Area = 80 sq.ft.
Width = 8 ft.

Area = width x length
80 = 8 x length
Therefore, length = $\frac{80}{8}$ = 10 ft.



$L_1 = \frac{220}{10} = 22$

W_2 = _____

W_3 = _____

W_4 = _____

W_5 = _____

$L = L_1 + W_3 + W_4$ = _____

$W = 10 + W_2 + W_5$ = _____

Total area = _____

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Day 2

Reading	Practice linking cause and effect, then read a story about a first day of school gone wrong.
Writing	Create a comic book to help practice kindness and compassion.
Grammar Practice	Learn how conjunctions can help your writing.
Math	Keep going with area, and also a little early algebra with variables.

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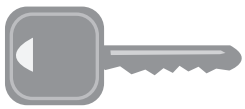
Name: _____ Date: _____

Pair the Cause and Effect

Cause and effect are connected events. A **cause** is the *first event* and the **effect** is the *second event*, or resulting action, that happens after the cause.	**First:**	**Then:**
	Emilio forgot his house key at school. 	So, he went to his friend's house while he waited for his parents to come home.

Directions: Read the events. Draw a line connecting the cause to the effect. Then, copy them in the correct location on the T-chart.

1. Sasha had to do school work during lunch

2. I wanted to go back home

3. Since I knew my friends were performing their poetry,

4. Because the mail was late

5. The reason I didn't go to practice is

A. Joshua didn't get his birthday card on his birthday.

B. because she didn't bring her homework to school.

C. I went to the auditorium to hear the show.

D. because I needed to finish my homework.

E. since I did not feel welcomed at the party.

Cause	Effect
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

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First Day of School: Cause and Effect

Name:_____ Date:_____

As you read the story below, think about cause and effect. Underline examples of cause and circle examples of effect. Then fill out the T-chart with the examples of cause and effect you identified in the story.

REMEMBER: **Cause** is the thing that makes something else happen. **Effect** is the thing that happens.

I woke up with a start. Something was beeping loudly in my ear. I stretched my arm out, and groggily pushed the snooze button on my alarm clock. "Why does school start so early?" I mumbled into my pillow before slowly drifting back to sleep.

Twenty minutes later, my mom rushed into my room. "What are you doing in bed?" she screeched. "You're going to be late for your first day of school!" My eyes snapped open. It was the first day of school! I jumped out of bed and bolted to my closet where I grabbed some clothes and hastily put them on. I snatched my backpack from the chair by the front door before running towards the bus stop. But as I approached the bus stop, I saw it pulling away from the curb. I groaned as I watched it disappear down the street. Now I would have to walk to school.

I decided to take a shortcut through Mr. Henry's field, even though there was a big fence and a sign that said "NO TRESPASSING" in big red letters. I looked around to see if Mr. Henry was out before jumping over the fence. But, as I jumped, my backpack got caught in the wire barbs that lined the top of the fence. I tugged with all my might, trying to get it free, but it was no use, it was stuck. I would have to leave it and come back for it after school. I jogged across the field, hoping Mr. Henry wouldn't see me and ducked through the gate on the other side.

Phew! I saw school just ahead now! I continued jogging, and reached the front steps just as the first bell rang. I breathed a sigh of relief and swung open the front door. As I walked inside, I heard a burst of laughter. I saw a group of kids pointing at me and another group just staring with their mouths agape. "What is it now?" I wondered, looking down at my shoes. That's when I noticed it -- I wasn't wearing shoes! My mismatched socks were covered in straw from my shortcut through the field. Embarrassed, I quickly ran towards my classroom, but my socks were slippery on the tile floor and I fell, SPLAT! right onto my back.

"This is the worst day ever!" I muttered, lying on the floor. Just as I thought I should give up and go home, my best friend Mayra spotted me. She ran over and helped me up. "Looks like it was a rough morning," she chuckled. I nodded glumly. "I have some extra shoes in my locker," she offered. Within minutes, I was wearing shoes and my day was looking much brighter.

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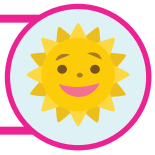
First Day of School: Cause and Effect



Name:_____ Date:_____

Example: Something was beeping loudly in my ear ---> I woke up with a start

(cause) **(effect)**

Cause	Effect

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Name _____ Date _____

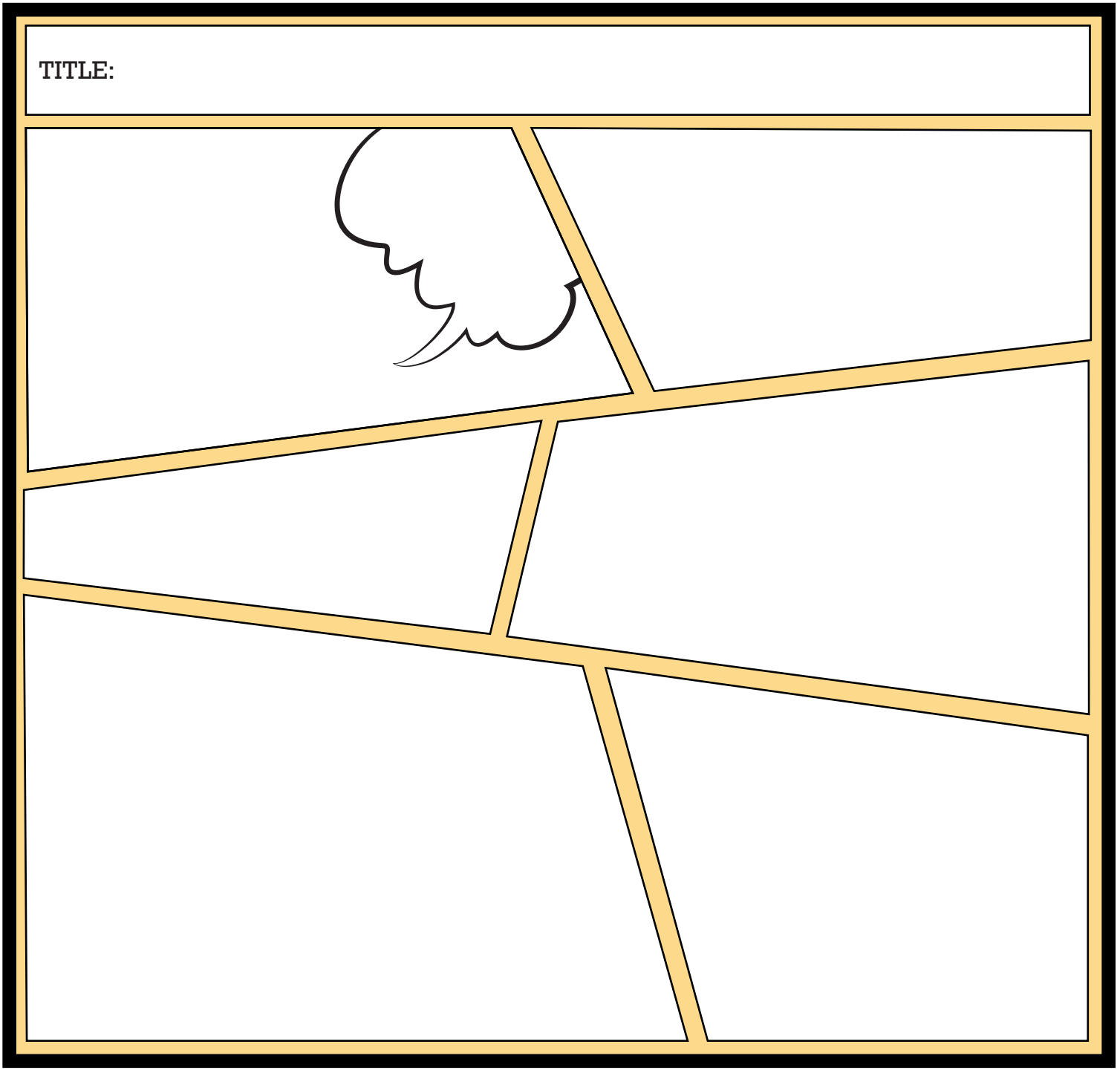
Comic Book: Using Inquiry

Directions: Come up with a comic/graphic story where the main character faces a challenging situation, notices their thoughts, and uses the following two questions to investigate their beliefs and thoughts:

- Is it true?
- How do we know it is true?

Use the template below to draw pictures of each of the events that happen in your story. Make sure to include the thoughts of the character (use thought bubbles!) and how they use the two questions for investigation. Afterwards, color in your pictures to bring your comic book to life!

TITLE:



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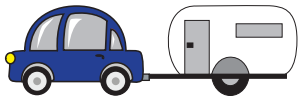
Name:_____ Date:_____

Conjunctions: The Cure for Your Run-ons

Run-on sentences are sentences that have two or more ideas that are smashed together without a conjunction. It's like pushing a car and a trailer together but not hooking them up.

Run-on: My brother made a gallon of slime he didn't share any with me.

Fixed: My brother made a gallon of slime **but** he didn't share any with me.



Use the list of conjunctions below to fix the run-on sentences.

Subordinating Conjunctions			
after	because	lest	till
although	before	now that	unless
as	even if	provided	until
as if	even though	since	when
as long as	how	so that	whenever
as much as	if	than	where
as soon as	inasmuch as	that	wherever
as though	in order that	though	while

Coordinating Conjunctions
For and nor but or yet so

Correlative Conjunctions
Both _____ and _____
Neither _____ nor _____
Either _____ or _____
Not only _____but also _____

1) I beat the video game my brother beat it a few weeks later.

_____

2) I went to the gas station and got a ton of candy my mom got angry.

_____

3) My brother takes the longest showers he comes home from practice dripping with sweat.

_____

4) My sister won the skateboard competition she practiced for weeks.

_____

5) The movie is showing at 7:00 it is showing at 9:30, too.

_____

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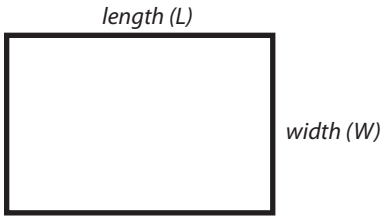
Rectangle Mania: Practice Finding Area III

Find the missing values of each rectangle to find the area of the big rectangle.

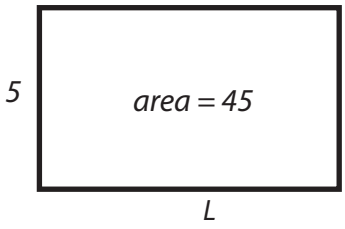
?

Review:
Rectangle Area = width x length

Width is the shortest side of a rectangle.
Length is the longest side of a rectangle.

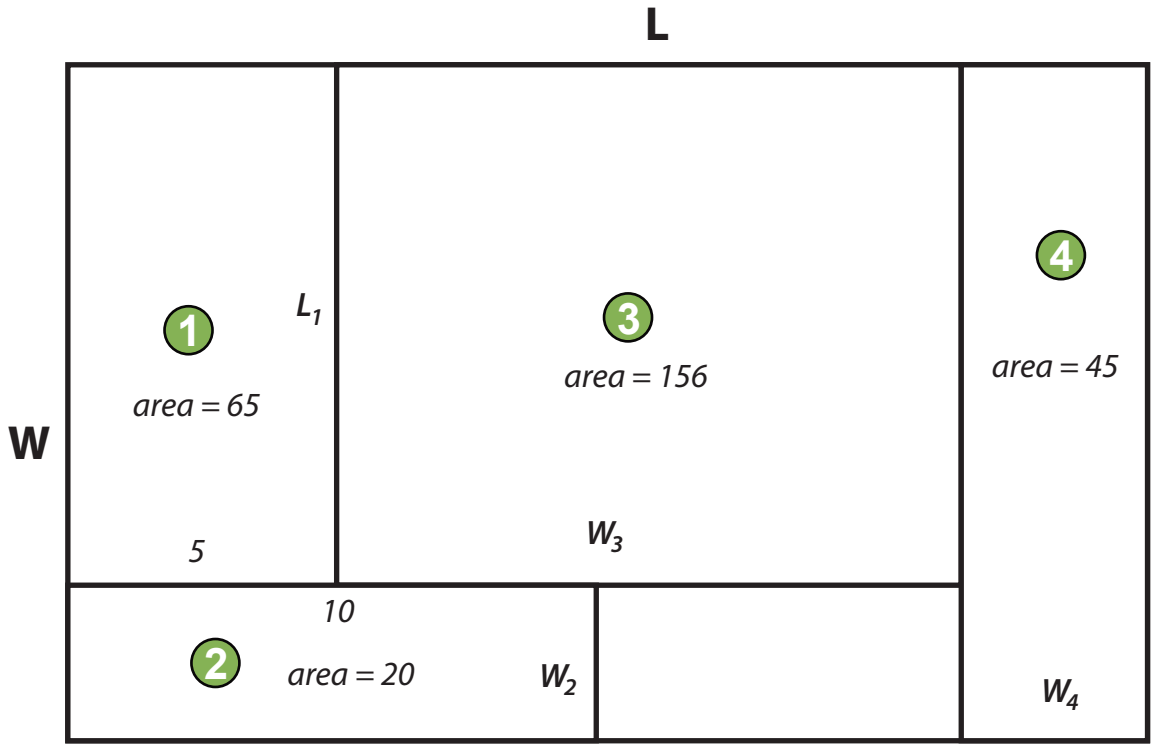


Example:



Area = **45** sq.ft.
Width = **5** ft.

Area = width x length
45 = 5 x length
Therefore, length = $\frac{45}{5}$ = **9** ft.



$L_1 = \frac{65}{5} = 13$

W_2 = _____

W_3 = _____

W_4 = _____

L = 5 + W_3 + W_4 = _____

W = L_1 + W_2 = _____

Total area = _____

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Beginning Algebra

Solve for 'x'. Write the corresponding letter in the space below that matches your answer.

1. $8 + x = 16$	A	2. $2x - 8 = 6$	N
3. $x - 10 = 0$	B	4. $4 + 3x = 7$	P
5. $2x + 5 = 9$	C	6. $4x - 4 = 16$	R
7. $9 + 2x = 17$	E	8. $6 + 2x = 24$	S
9. $3x - 6 = 3$	H	10. $3x + 5 = 23$	Y

What do witches put on their hair?

9	2	8	5	4		9	1	5	8	6

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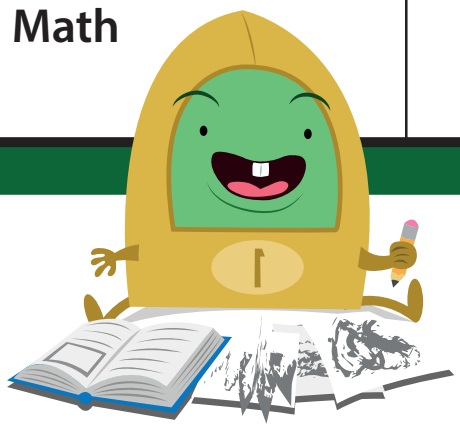
Day 3

Reading	Key in on cause and effect clue words and read about Rosie the Riveter.
Writing	Plan an original comic.
Grammar Practice	Read a student's how-to essay and decide whether to use a preposition or conjunction.
Math	Find the missing lengths and widths.



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Name _____ Date _____

Clue Words for Cause and Effect

CAUSE → **EFFECT**

the reason why something happened — what happened because of something else

Clue Words to show cause and effect relationships

since ***because*** ***so*** ***as a result*** ***If... then***

Examples: Rosa ran 20 miles yesterday so she was sore today.
(cause) (effect)

Since David has a cold, he did not go to school.
(cause) (effect)

Directions: Match the cause and effect in the two columns below to make a complete sentence. Circle the clue words that help you see a cause-and-effect relationship.

Because most owls sleep during the day	so I went to help him.
I saw the boy crying	then you will do well in this class.
As a result of the strong storm	they often hunt at night.
If you study hard and ask questions	the whole town was flooded.
Since Dante practiced volleyball daily	he was an excellent player.

Directions: Choose one of the complete sentences above to draw a picture showing the connected events.

CAUSE	EFFECT

Your turn! Write your own cause-and-effect sentences using the sentence frames provided.

1. If _____ (*cause*), then _____

   _____ (*effect*).

2. Since _____ (*cause*), _____

   _____ (*effect*).

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Name _____ Date _____

Rosie the Riveter

Directions: Read the passage below and answer the questions that follow. Underline text evidence in the passage to support your answer.

Although you may not be familiar with Rosie the Riveter, you'll certainly recognize her face. Rosie is an *iconic* figure in U.S. history. She was a fictional character, created during WWII as an ad campaign to encourage women to take on jobs that were usually done by men. With most men *drafted* to fight in the war, many factories, shipyards and other labor-intensive jobs opened up. There was a huge demand for labor, and it was up to women to step up, take the jobs that men once had, and keep the country's major industries running. Most of these factories actually produced ammunition and other weapons for the war. Today, Rosie is still a symbol of female empowerment.

The actual name "Rosie the Riveter" was first used in a song written in 1942 by Redd Evans and John Jacob Loeb.

All the day long,
Whether rain or shine
She's part of the assembly line.
She's making history
Working for victory
Rosie the Riveter

The "Rosie" in the song was inspired by a real-life woman named Rosalind P. Walter, who worked as a riveter at an aircraft factory. This song was later made popular by American bandleader Kay Kyser. The poster that you may recognize was an ad poster for the war, made by J. Howard Miller in 1942. Although he did not intend for his illustration to represent the fictional Rosie the Riveter figure, that poster is now most commonly associated with her.

1. Something that is *iconic* is described as widely known, receiving great respect and admiration. Why is Rosie the Riveter described as "an *iconic* figure in U.S. history"?

2. A *draft* is a system used by the military. It was a requirement for all men over the age of 18 to enlist in the military during a time of war. How did the draft affect the rest of the country during WWII?

3. Name two places in which women worked during WWII.

   1. _____

   2. _____

4. What does the Rosie the Riveter figure represent?

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Name		Date	

CREATE A COMIC STRIP!

COMIC STRIP MAKER

STEP 1 *Find inspiration for your main characters. A pet? A friend? A family member? Be sure to come up with an original name for each!*	**STEP 2** *Sketch the characters using the template on page 2. They should each look distinct so that readers don't confuse them.*
STEP 3 *Use the graphic organizer below to map out events in your story.*	**STEP 4** *Consider how to organize the main events into the frames provided on page 3.*
STEP 5 *Draw your characters and add dialogue. Then add speech bubbles around the dialogue!*	**STEP 6** *Add color to your comic. Leave some frames black and white and mix up your color scheme!*

GRAPHIC ORGANIZER

Use this template to plan the events and sequence of your finished comic strip on the following page.

MY COMIC TITLE: _____

PANEL 1:

PANEL 2:

PANEL 3:

PANEL 4:

PANEL 5:

PANEL 6:

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Name		Date	

CREATE A COMIC STRIP!

CHARACTER STUDY

Use this template to sketch the characters you plan to include in your comic strip. Use the back of the page if you need additonal space.

CHARACTER 1:

CHARACTER 2:

CHARACTER 3:

CHARACTER 4:

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Name		Date	

CREATE A COMIC STRIP!

COMIC STRIP MAKER

Use this template to draw your final comic.

MY COMIC: _____

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Name: _____ Date: _____

The Pentagon Tour Tips and Tricks

A **preposition** is a word that shows where something is or when something happened.

Example: The airplane landed safely onto the tarmac.

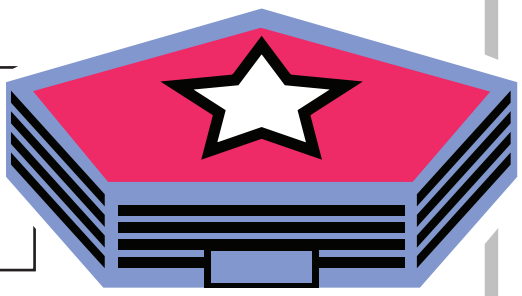
A **conjunction** is a word used to connect two clauses.

Example: The airplane landed safely, and everyone cheered.

Directions: Read through the journal entry. Then, fill in the blanks with a conjunction or a preposition from the word box. You may need to use a word more than once.

Word Box

but	beneath	within	in	before	at	and
to	through	while	or	inside	until	



Day 3 of our trip to Washington, D.C.

Visiting the Pentagon is no easy feat! It is possible to visit, _____ you need to make sure you follow the rules closely. We are a nation of rules, are we not? Here are some simple tips to keep in mind when planning your trip _____ the Pentagon.

First, make an appointment. Do not just show up without asking permission! That is a big no-no, _____ it will not get you _____ the building. Make sure that you get an appointment no earlier than 90 days before the visit, _____ no later than two weeks _____ the visit. I think it has something to do with having an orderly visit, _____ they never told me why. I guess they do not want too many people showing up at one time. Did you know 106,000 people visit the Pentagon annually? That's a lot of people visiting _____ 365 days!

Secondly, you should really make sure to dress appropriately. You will need to walk _____ a lot of the Pentagon. It will be at least one and a half miles _____ a 60-minute timeframe, so make sure your shoes are comfortable. That does not mean showing up in baggy pants _____ wearing wrinkled clothes. These people help keep us safe, _____ they have a dress code of their own. The least we can do is show up looking presentable _____ in the building!

Lastly, take some paper because there are no cameras, _____ any electronic devices, allowed _____ the building. It's for security reasons, of course. That's why they make you bring your identification, too. You can use your paper to take notes, or even to draw pictures of some of the cool things you may see during the tour. I forgot my paper _____ the hotel _____ the bed, so I was out of luck _____ touring the Pentagon. I will not make that mistake before the Capitol Building tour! Enjoy your visit!

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Rectangle Mania: Practice Finding Length

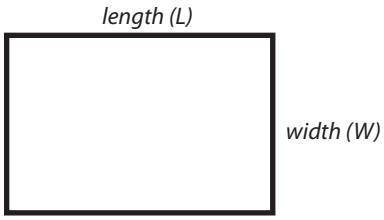
Use the clues provided to find the length of each rectangle. Show your work.

?

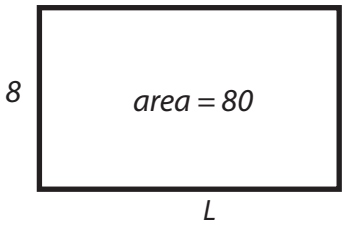
Review:

Rectangle Area = width x length

Width is the shortest side of a rectangle.
Length is the longest side of a rectangle.



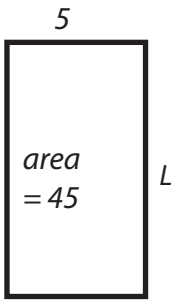
Example:



Area = **80** sq.ft.
Width = **8** ft.

Area = width x length
80 = 8 x length
Therefore, length = $\frac{80}{8}$ = **10** ft.

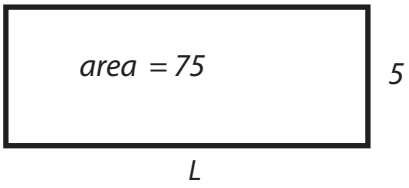
1



Area = _____ sq.ft.
Width = _____ ft.

Area = width x length
=
Therefore, length = = _____ ft.

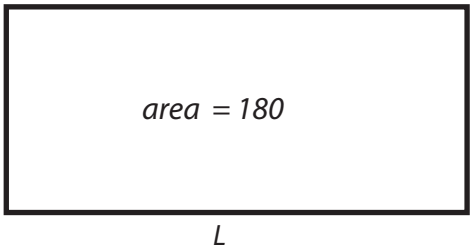
2



Area = _____ sq.ft.
Width = _____ ft.

Area = width x length
=
Therefore, length = = _____ ft.

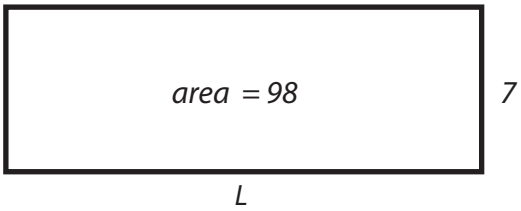
3



Area = _____ sq.ft.
Width = _____ ft.

Area = width x length
=
Therefore, length = = _____ ft.

4



Area = _____ sq.ft.
Width = _____ ft.

Area = width x length
=
Therefore, length = = _____ ft.

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Rectangle Mania: Practice Finding Width

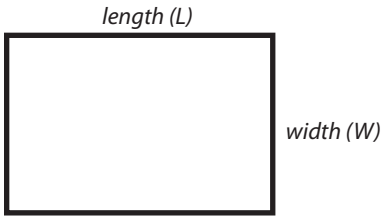
Use the clues provided to find the width of each rectangle. Show your work.

?

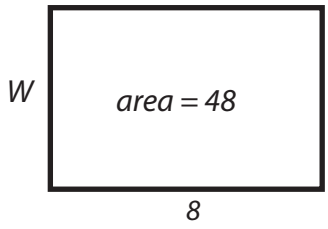
Review:

Rectangle Area = width x length

Width is the shortest side of a rectangle.
Length is the longest side of a rectangle.



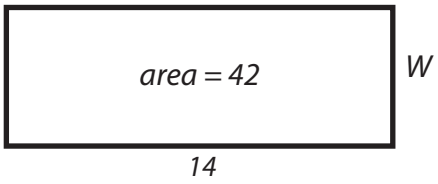
Example:



Area = **48** sq.ft.
Length = **8** ft.

Area = width x length
48 = width x 8
Therefore, width = $\frac{48}{8}$ = **6** ft.

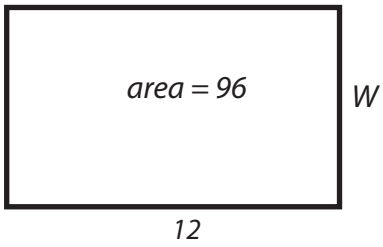
1



Area = _____ sq.ft.
Length = _____ ft.

Area = width x length
=
Therefore, width = = _____ ft.

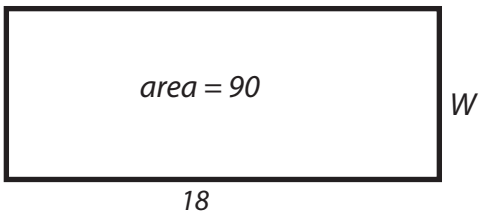
2



Area = _____ sq.ft.
Length = _____ ft.

Area = width x length
=
Therefore, width = = _____ ft.

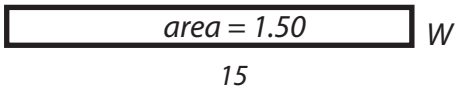
3



Area = _____ sq.ft.
Length = _____ ft.

Area = width x length
=
Therefore, width = = _____ ft.

4



Area = _____ sq.ft.
Length = _____ ft.

Area = width x length
=
Therefore, width = = _____ ft.

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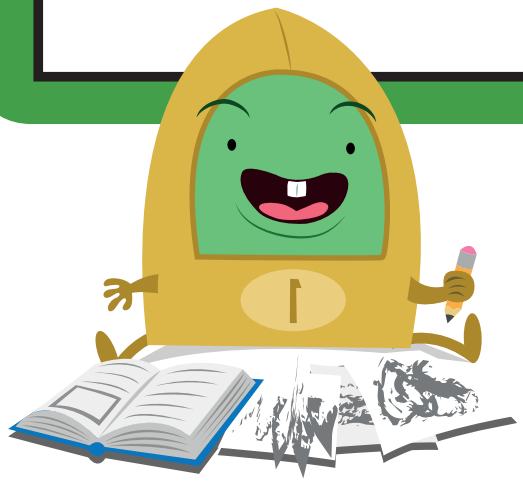
Day 4

Reading	Read the story of Rosa Parks and her act of passive resistance, then follow a series of thoughtful prompts to reflect on the boycott.
Writing	Use these pages to help plan out the comic you will create.
Grammar Practice	Keep going with conjunctions!
Math	You will need a partner for this zombie graphing game.



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Name _____ Date _____

Civil Rights

The Montgomery Bus Boycott

Civil rights activist Rosa Parks

Directions: Read about the Montgomery Bus Boycot below. Using what you've learned, answer the questions on the next page.

One of the first big events in the fight for civil rights was the Montgomery Bus Boycott. For many years, segregation laws existed in Alabama. This meant that white people and black people couldn't use the same schools, restaurants, hotels, restrooms or drinking fountains. Public places were separated according to race.

Rosa Parks was a seamstress in Montgomery, Alabama. One evening, after a long day at work, she sat down on a section of the bus where everybody was allowed to sit — however, the rule was that, if a white person got on the bus and there was nowhere to sit, black riders must give up their seat for them. When a bus driver ordered Rosa Parks to give up her seat to a white passenger that had just boarded, she refused to do so. Because she disobeyed the bus driver, she was sent to jail. However, Rosa was the secretary of the local chapter of the NAACP! When her friends heard about Rosa's arrest, they organized a boycott of city buses. Instead of taking the bus, people who supported Rosa walked or carpooled to work and school. The strike lasted for over a year. People from other parts of the country even sent coats and shoes to the boycotters in Montgomery. Some taxi drivers reduced their fares so that they would be the same cost as a bus ticket.

At the time of the boycott, about three fourths of the city's regular bus riders were African American. The longer the boycott went on, the more money the bus company lost. They realized how damaging it could be to their business and their reputation. In 1956, the federal court ruled that segregation on buses was unconstitutional.

"Each person must live their life as a model for others."

— Rosa Parks

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Name _____ Date _____

Civil Rights

The Later Years of the Movement

Why do you think the boycott was so successful?

Why do you think people sent warm clothes and shoes to people in Montgomery, even though they were not from there?

For many years after, the bus that Rosa Parks sat on that evening ended up abandoned in a field. When it was discovered that it was the famous bus that started the Montgomery boycott, it was put up for auction. A museum bought it, and a federal grant was given to them to have the bus restored. Why do you think people wanted so badly to preserve this bus?

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CONGRATULATIONS!

You've finally caught up to the super heroes and villains. Now it's time to do some surveillance work. Use the blank comic strips below to show what you've been observing about our rogue supers.

FIGHT SCENE BETWEEN TWO OF THE CHARACTERS

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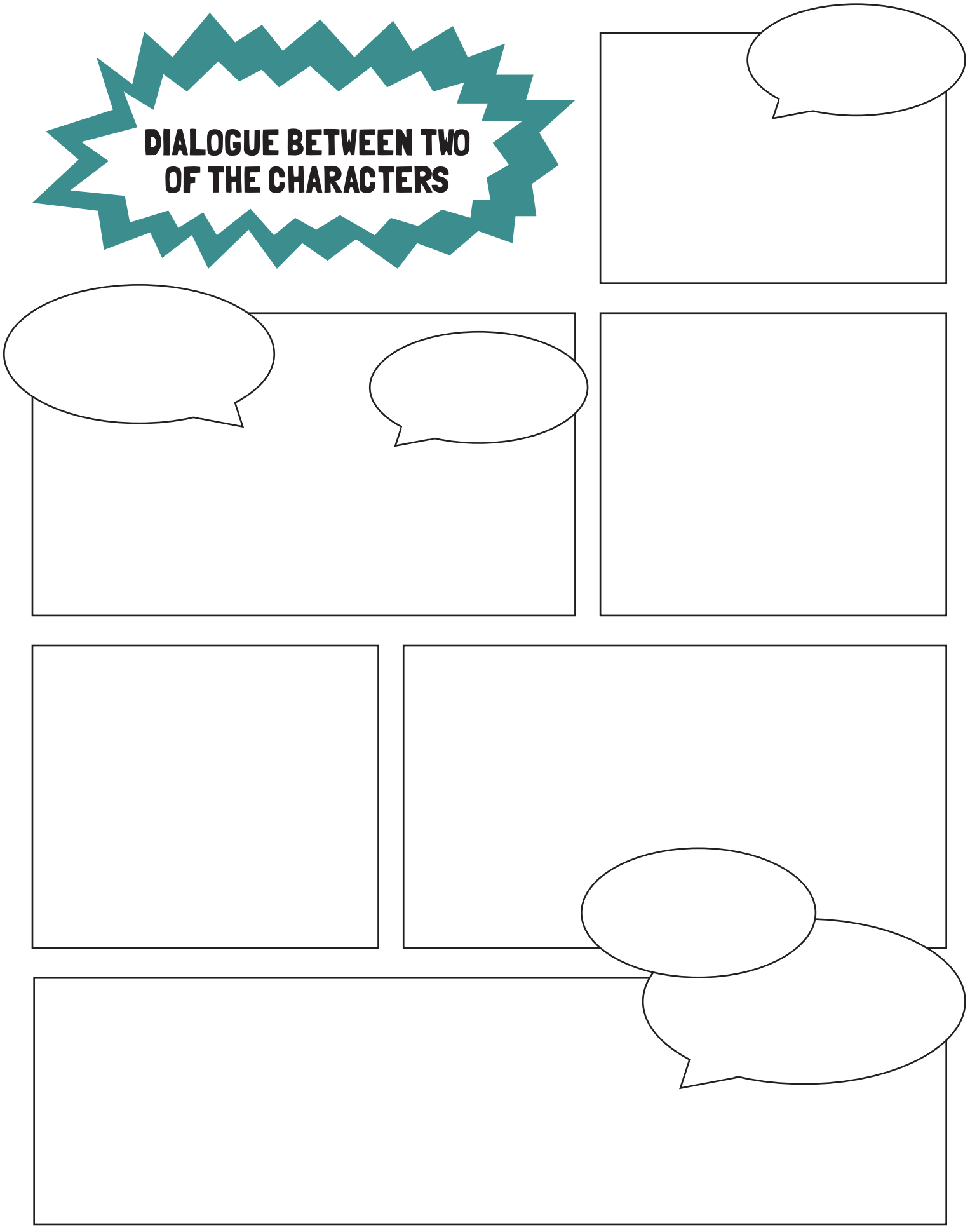
DIALOGUE BETWEEN TWO OF THE CHARACTERS



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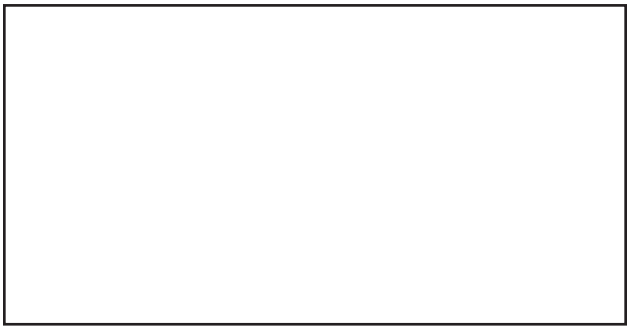
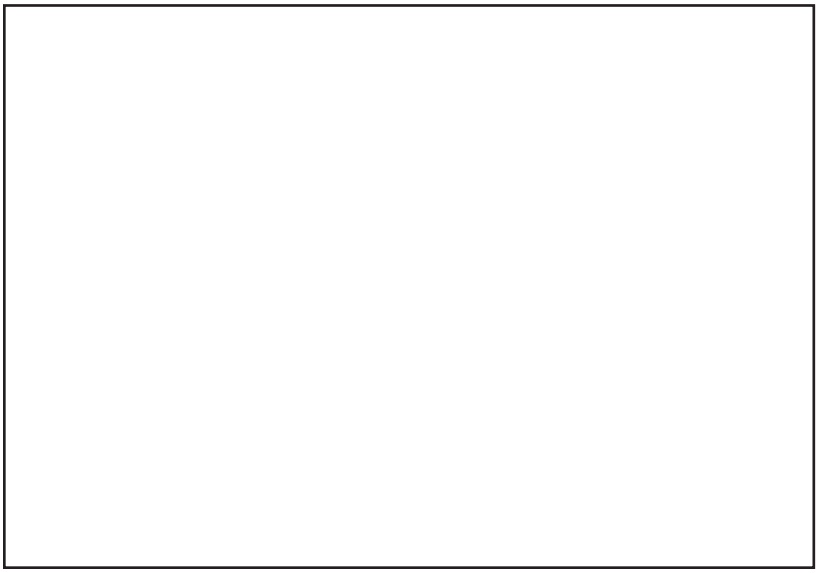
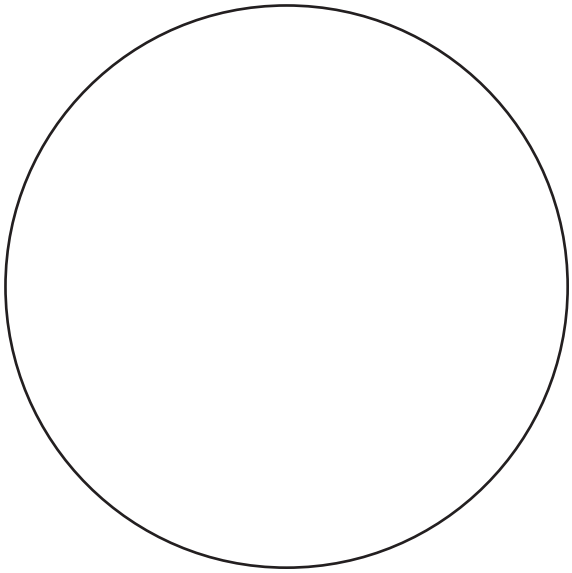
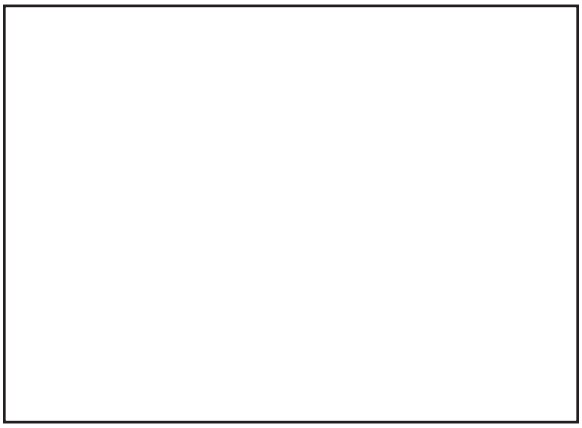
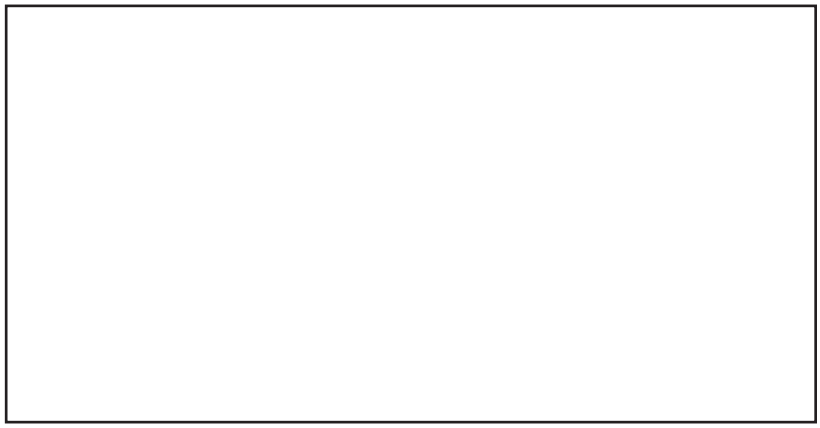
CHASE SCENE BETWEEN MANY CHARACTERS

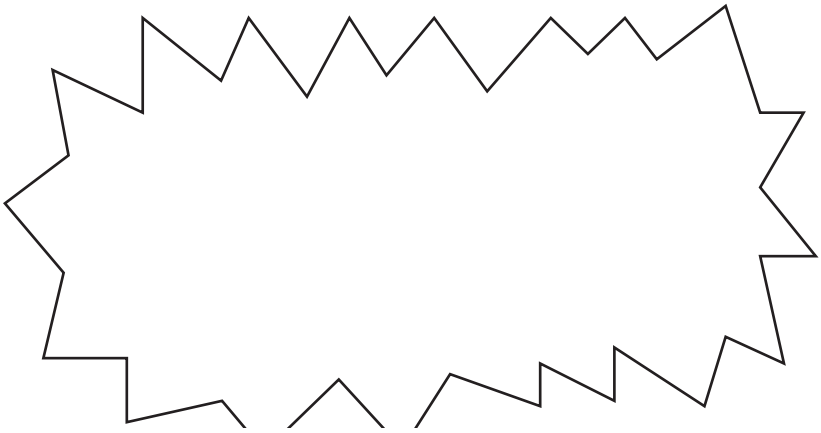












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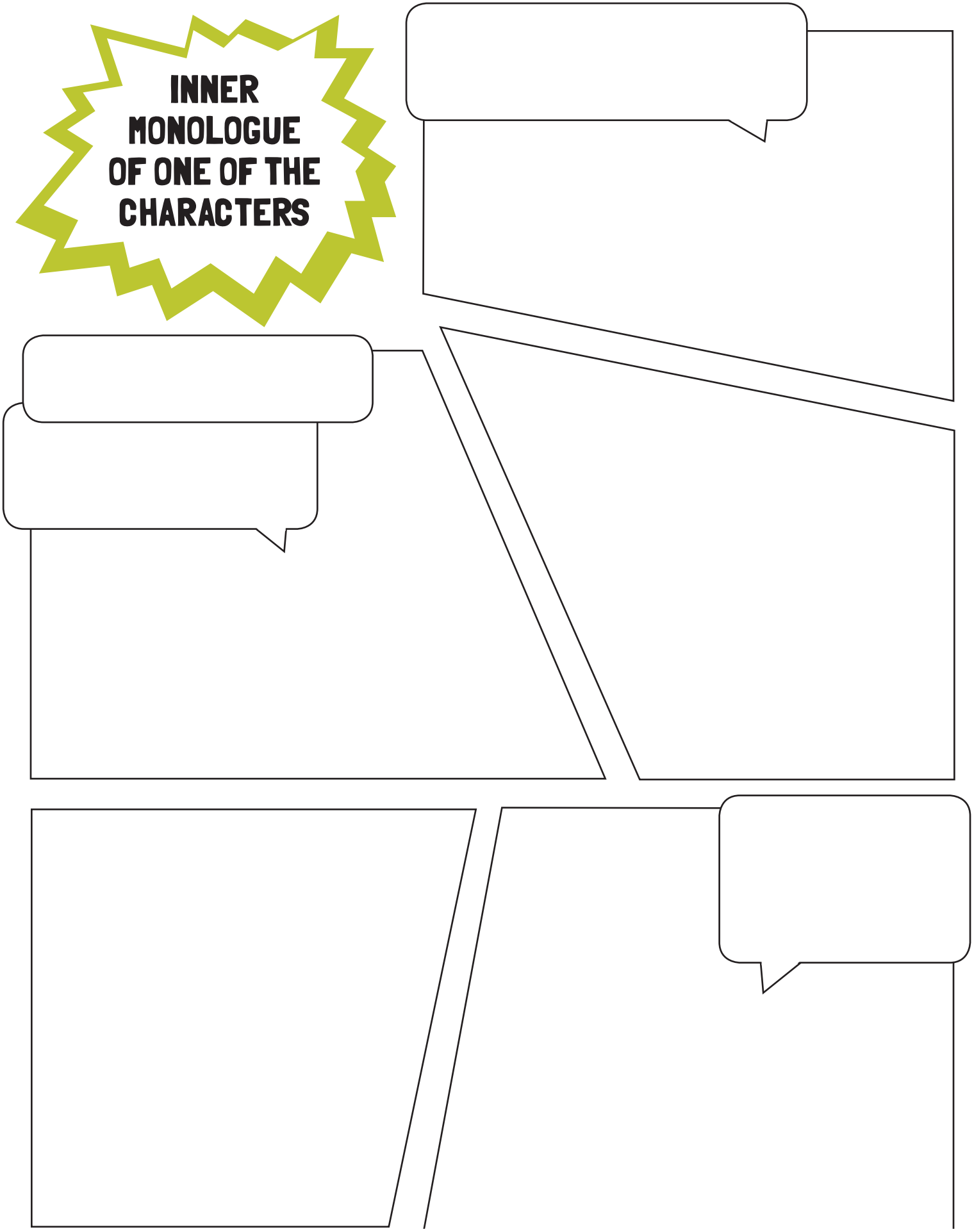
INNER MONOLOGUE OF ONE OF THE CHARACTERS



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Name: _____ Date: _____

Using Conjunctions to Connect Facts

A conjunction is a word that joins two words or phrases together.

A conjunction can join two independent clauses (two sentences). Usually a comma is needed before the conjunction.

Example: *All of us went to the movie, and we agreed it was funny.*

A conjunction is often used at the end of a list. Sometimes a comma (called a serial comma) is used before the conjunction.

Example: *We used blueberries, bananas, and strawberries in the smoothie.*

Part 1 Complete each sentence using a conjunction in the word bank.

Conjunction Word Bank			
and	or	but	because

Waterspouts are most common in the Gulf of Mexico, _____ they have occurred in the tropics, as well.

A waterspout can happen on the ocean _____ on smaller bodies of water.

Tornadoes can be a threat to humans, _____ waterspouts can also be dangerous.

A waterspout can be dangerous _____ it can pick up things, such as animals or tree limbs, and drop them in other places.

A tornado is a storm that can cause destruction in its path, _____ winds can reach up to 300 mph!

Thunderstorms are formed _____ cool, dry air from the north and warm, moist air from the south meet.

Part 2 Write two sentences that explain your classroom routines. Use one conjunction in each sentence. Then, underline each conjunction and circle any commas that came before the conjunction.

Sentence 1: _____

Sentence 2: _____

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HUMANS VERSUS ZOMBIES

This is a two-player game that pits surviving humans against ravenous zombies!

YOU WILL NEED:

- Scissors
- Tape
- Red marker
- Black marker
- Something to place between players to hide the boards from the other side.

Remember: when calling out coordinates, the number for the x-axis always comes before the number for the y-axis. We write it out like this: (x, y)

DIRECTIONS:

1. Cut out the game pieces so that one player has all the zombie pieces and the other player has the rest of the pieces. Tape the pieces horizontally or vertically so the dots match up with coordinates on your grid. Make sure you hide your game piece locations from your opponent!

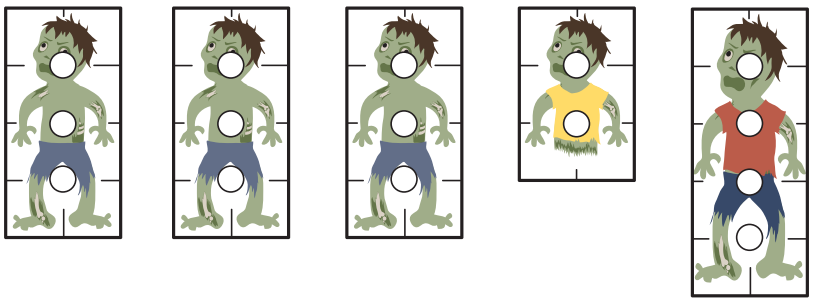
2. Take turns guessing coordinates to find your opponent's pieces. Each player must respond to a guess with either a hit or miss statement. A hit means the coordinate called out by a player matches up with one of the circles on a piece; "edge hits" do not count.

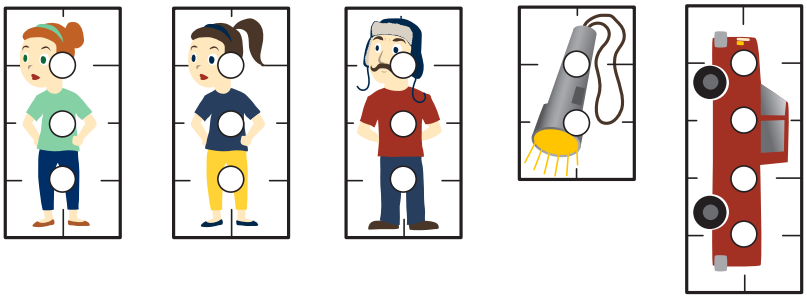
3. If you hit one of your opponent's pieces, mark that spot on your *Opponent Board* with a red dot, and if you miss, mark the spot with a black dot.

4. If your opponent hits one of your pieces, mark the coordinate on your own board with a red dot. Once a piece has been hit on all its coordinates, that piece is out, and tell your opponent, "You got my _____!"

5. Whoever gets all of their opponent's pieces wins!

GAME PIECES:





Carefully cut these game pieces out and place them on your game board, being careful to line up the white dots with coordinates on the grid. If you need help lining the pieces up, use the guidelines on the outside of the pieces.

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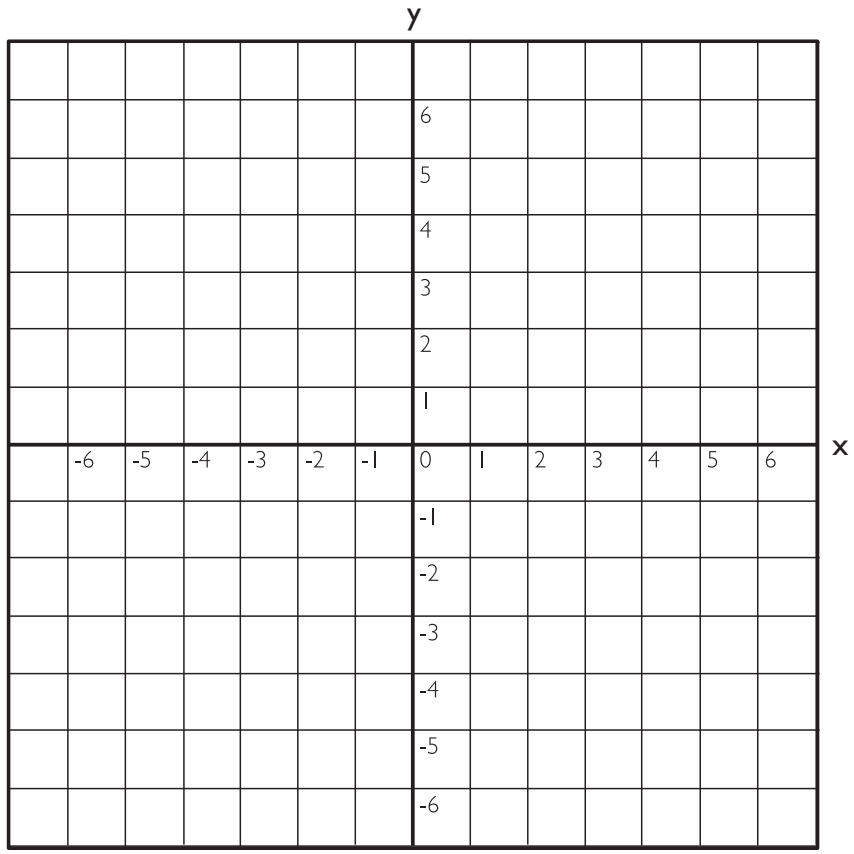
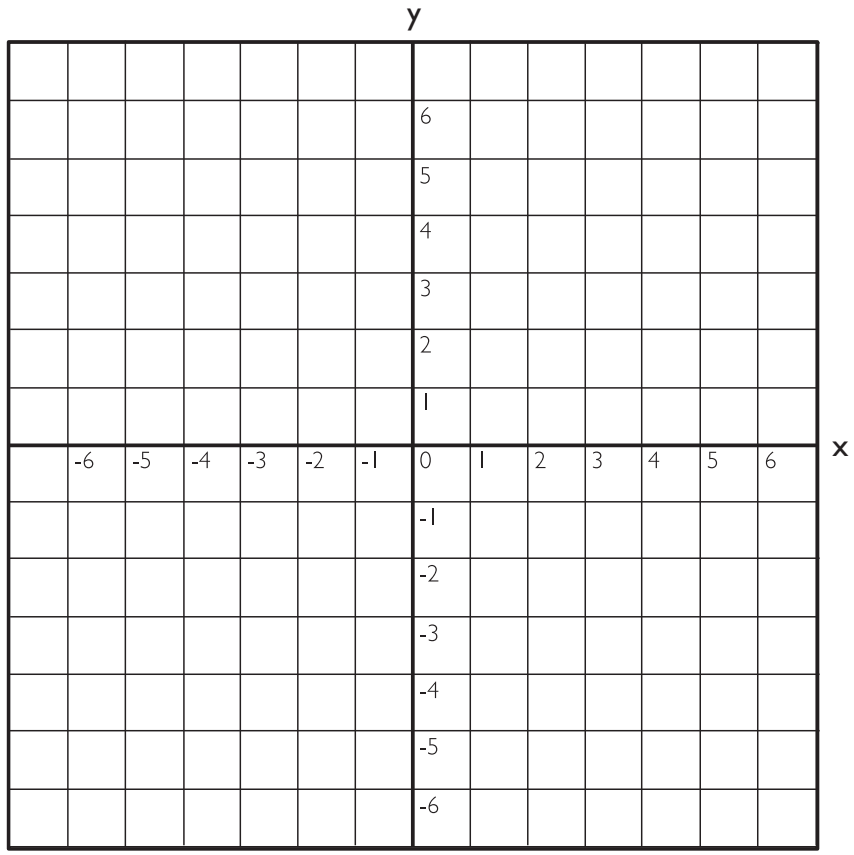
OPPONENT'S BOARD



YOUR BOARD



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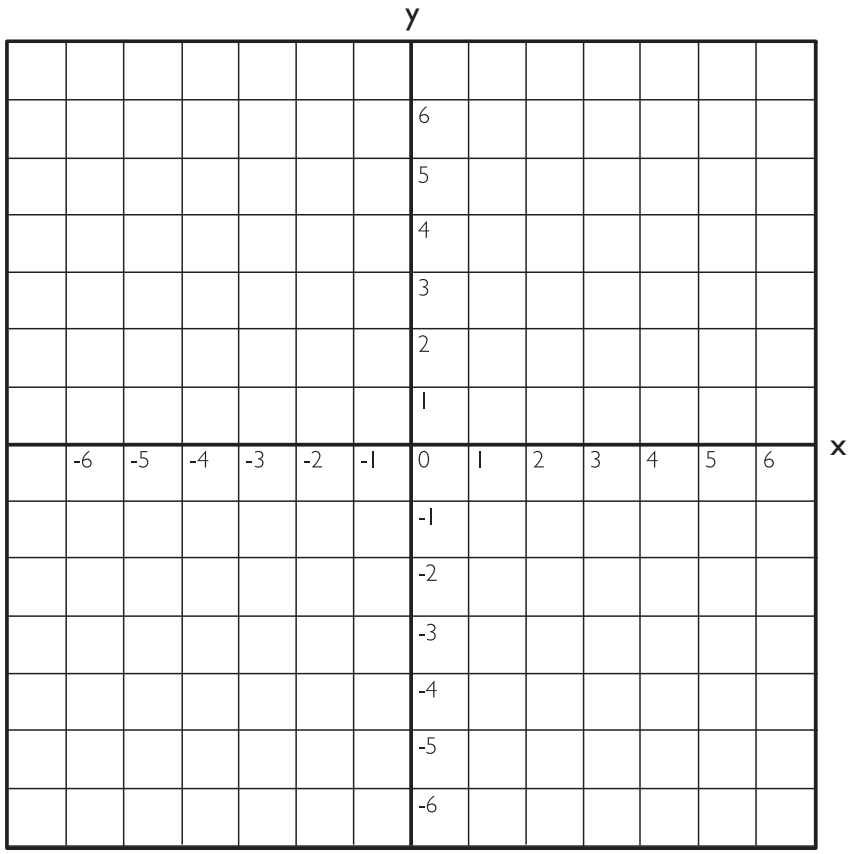
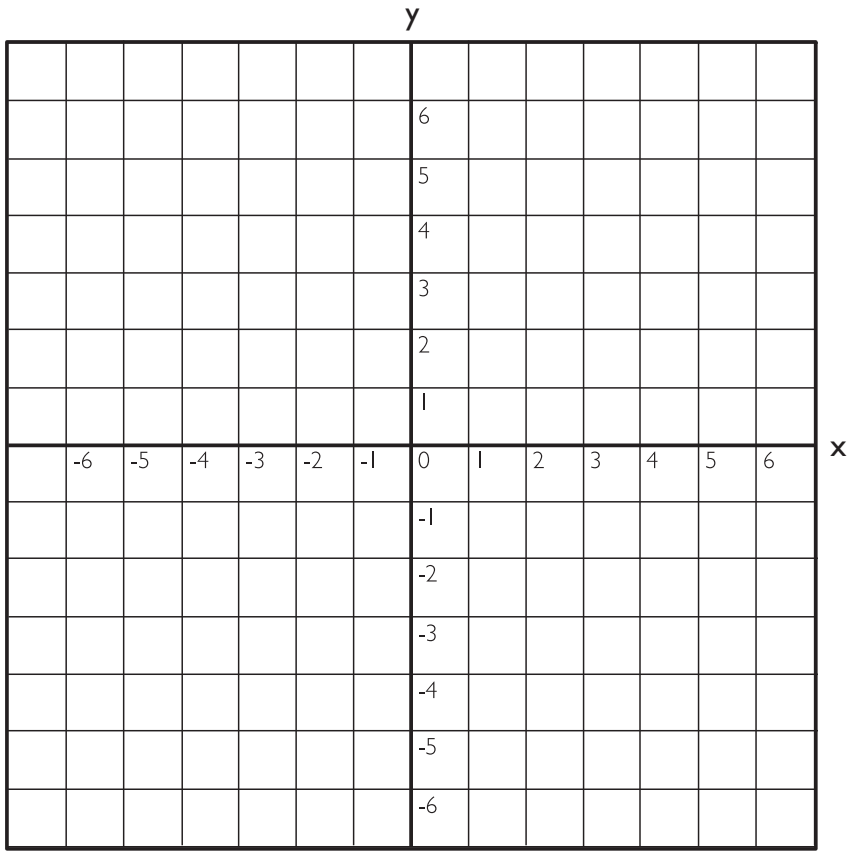
OPPONENT'S BOARD



YOUR BOARD



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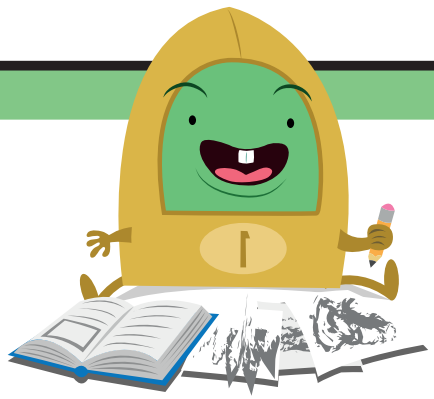
Day 5

Reading	Learn about the history of television and then complete a cause and effect organizer about it.
Writing	Now, write your own comic! Use these pages or create your own.
Grammar Practice	Practice with the most common types of conjunctions.
Math	Do some practice with ordered pairs and coordinate planes.



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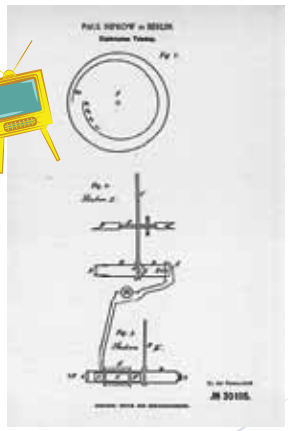
INVENTIONS SERIES 3:
THE TELEVISION

Television has become a huge part of our everyday life. It provides entertainment, news, advertisements and so much more for people of all ages. The television was not invented by just one person; many people throughout history contributed ideas and inventions to make TV what it is today.

Over time people experimented with the idea of mixing electricity and radio to see what would happen. This was the starting point and the begin–ning of the invention of television. During the late 1800s, Paul Gottlieb Nipkow, a student in Germany created the very first device to transmit pictures with light. He did this by sending pictures through wires which rotated on a metal disk. This was called the "electric scope." Inspired by Nipkow, an American inventor called Charles Jenkins invented the first *mechanical* television system in 1923. He called this device "Radiovision," which he preferred over the name television. It was known to have poor reception and a 40 to 48 line picture that tended to be cloudy. Jenkins publicly performed his first television broad-cast in Anacostia, Virginia all the way to Washington only a couple years after. In 1926, A British inventor named John Logie Baird transmitted the first moving pictures through the same mechanical disks that Nipkow had experimented with. This was followed by the very first TV studio which was located at the Crystal Palace in London. He used *transparent* rods and reflected light rather than back-lighting silhouettes.

Philo Taylor Farnsworth created the first electronic television system which got rid of the metal rotating disks. By 1934 all the televisions sets had been converted to electronic device, which is what we are still using to this day. Black and white TV was the standard, with color television showing up much later. RCA was the founder of color television and had its first broadcast on December 17, 1953. These progressions in modern television set up the foundation for the plasma and HDTV screens you see today!



Nipkow's "electric scope" was the first device to transmit pictures, in the late 1800s.

The very first mechanical television, invented by Charles Jenkins in 1923.

Philo Taylor Farnsworth's invention of the very first electrical television.

Baird used reflective light rather than back-lighting on his version of the television in 1926.

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VOCAB:

Mechanical - working or produced by machinery
Electronic - having or operating with the aid of many small components, esp. microchips and transistors, that control and direct an electric current:

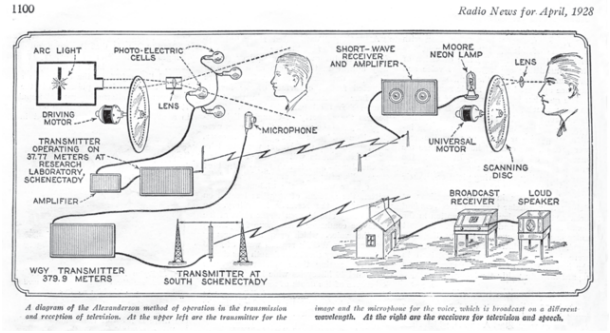
COMPREHENSION:

Who was the first person to create mechanical television? In what year?

Do you think the invention of television was a positive or negative occurrence? Write one paragraph on how TV has helped or hurt society today...

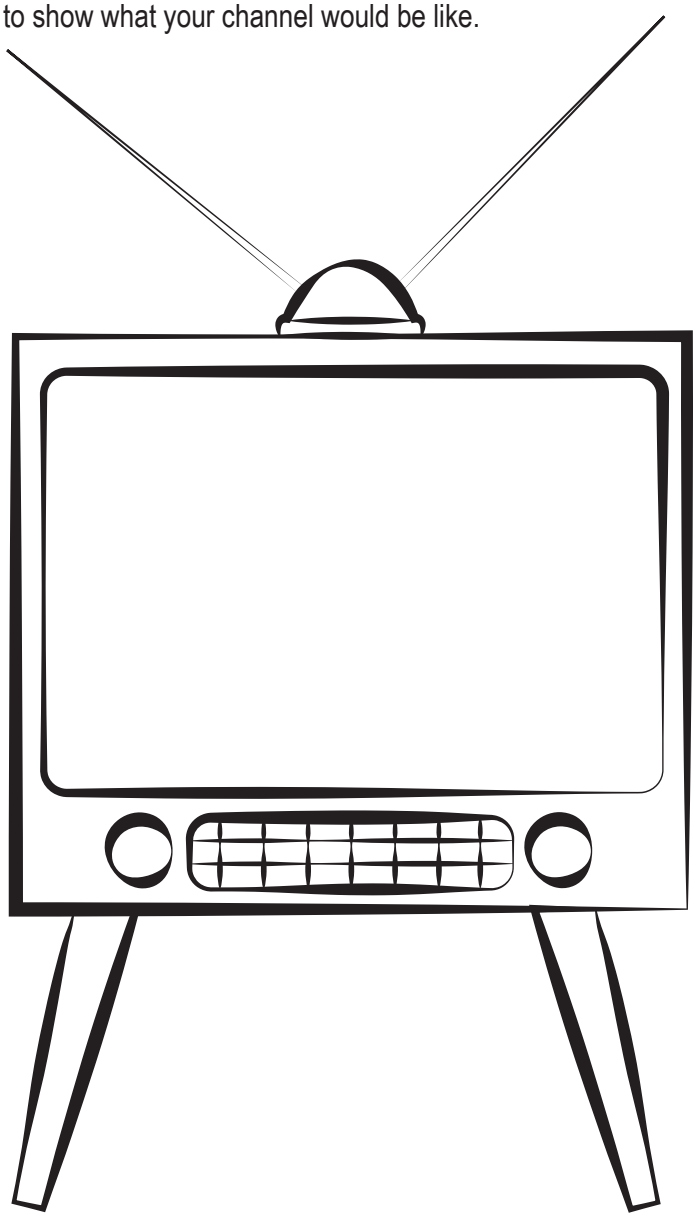
FUN FACT:

Did you know that in 1953 Ray Bradbury, wrote *Fahrenheit 451*, where his world banned books and people watch "parlor walls" where televisions dominated.



COLOR:

If you had your own television channel, what types of programs would you show? The news, sitcoms, or maybe concerts... the possibilities are endless! Color this TV set to show what your channel would be like.



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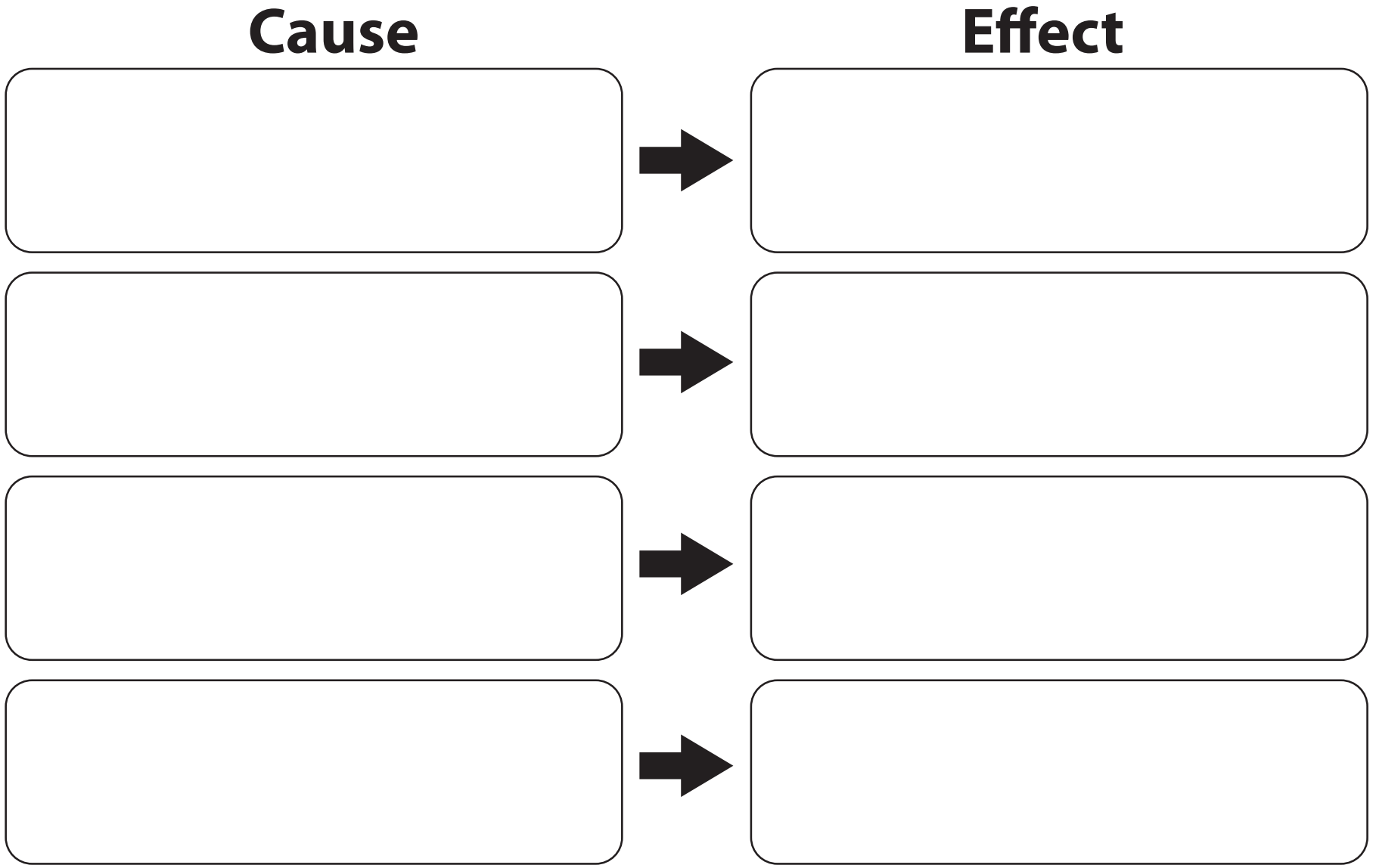
Name _____ Date _____

Cause and Effect Graphic Organizer

Directions: Record the cause and effect relationships in the graphic organizer.



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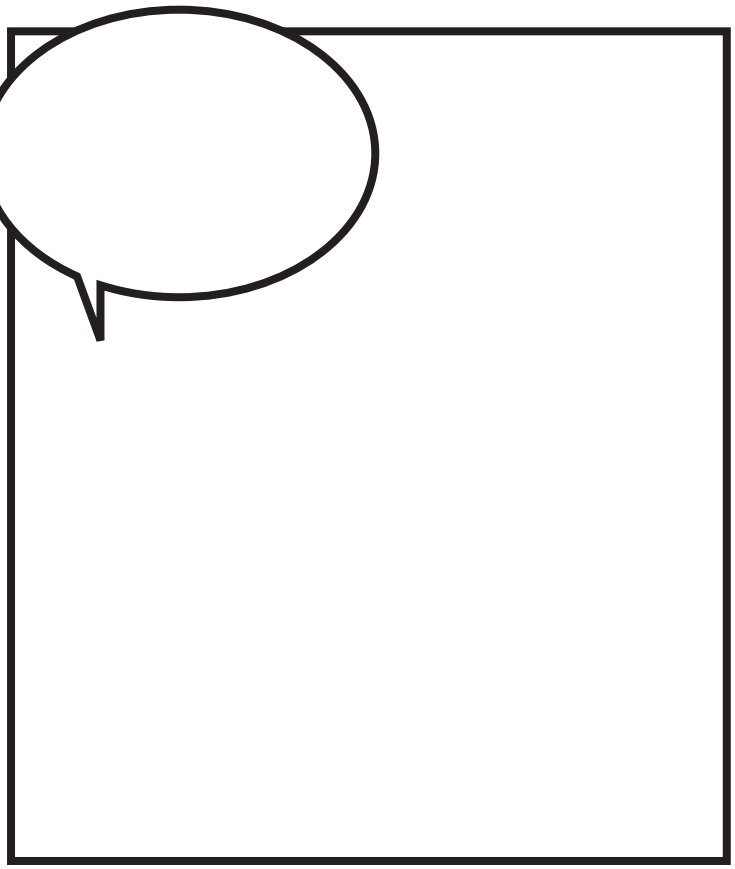

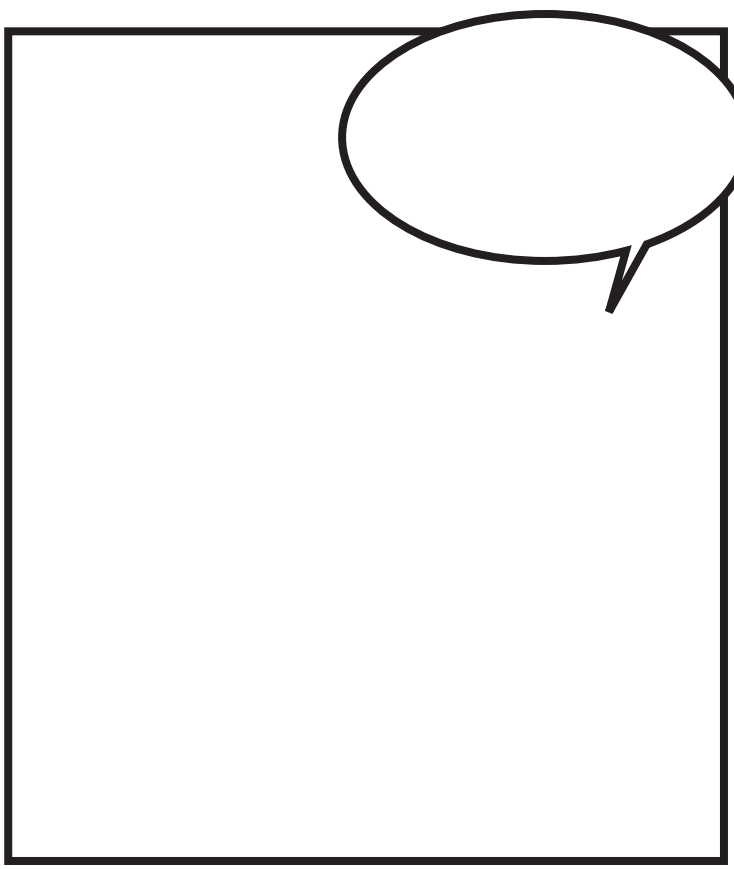

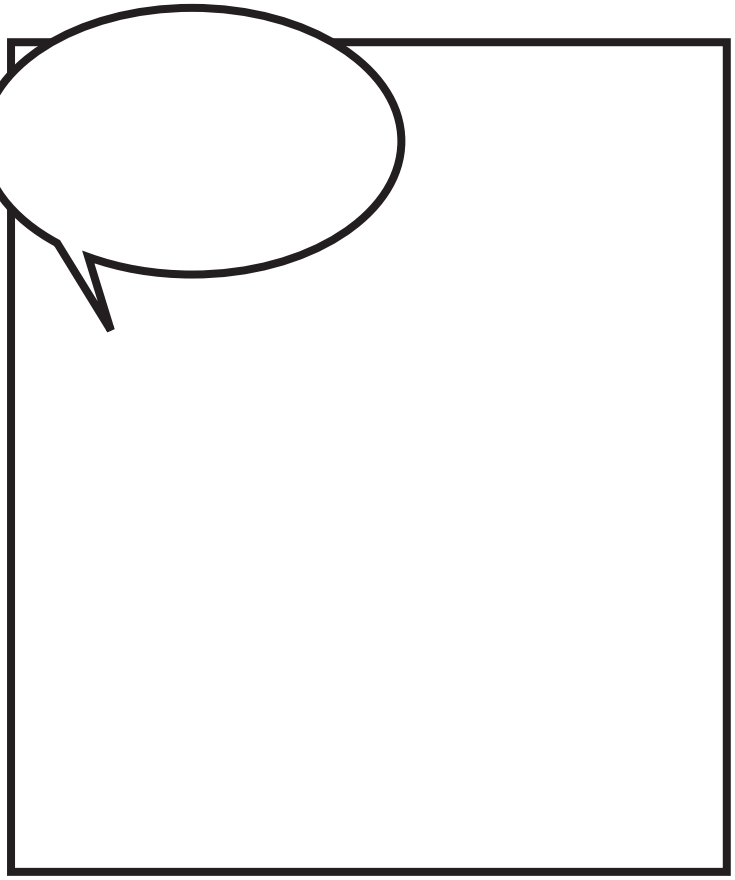

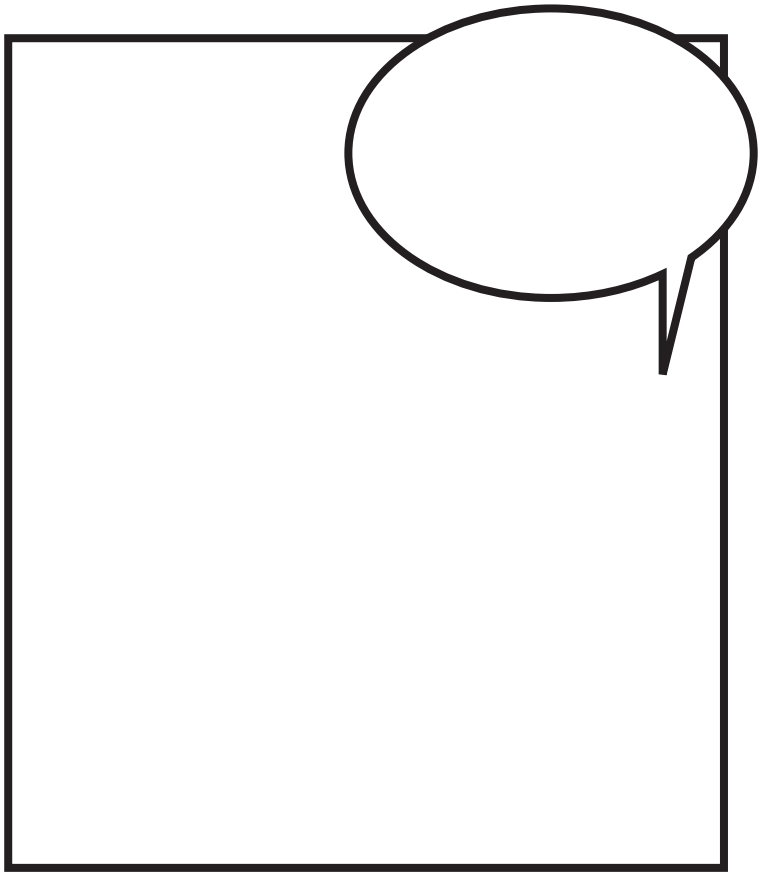

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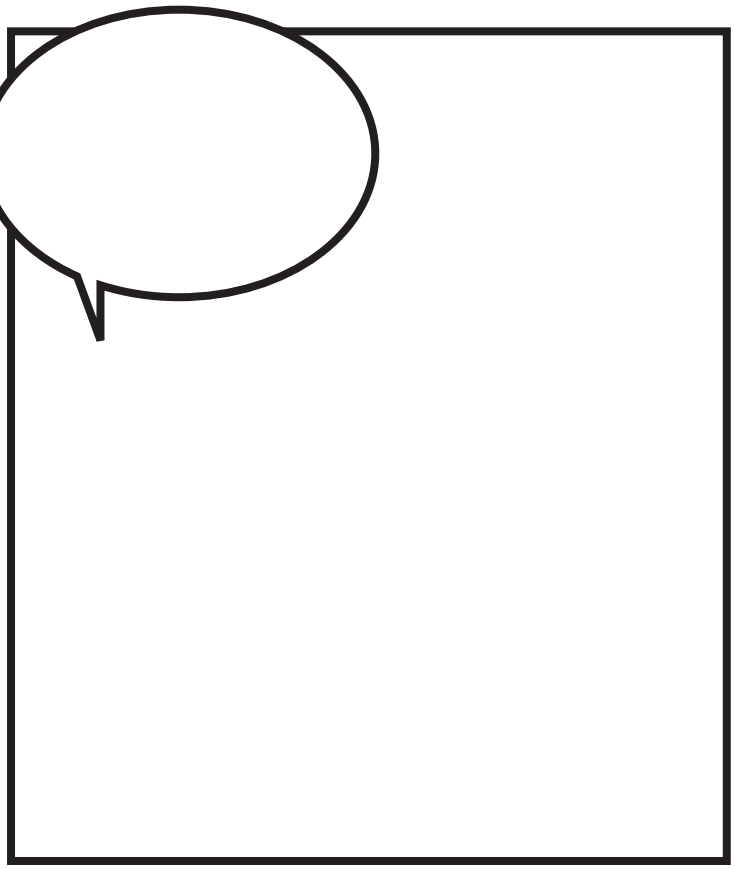

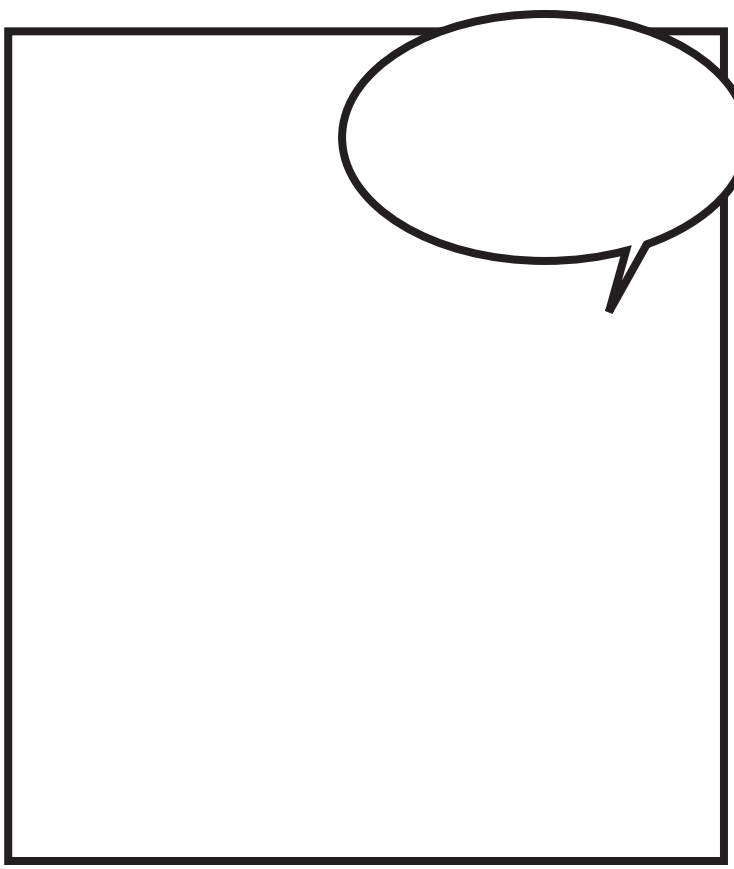

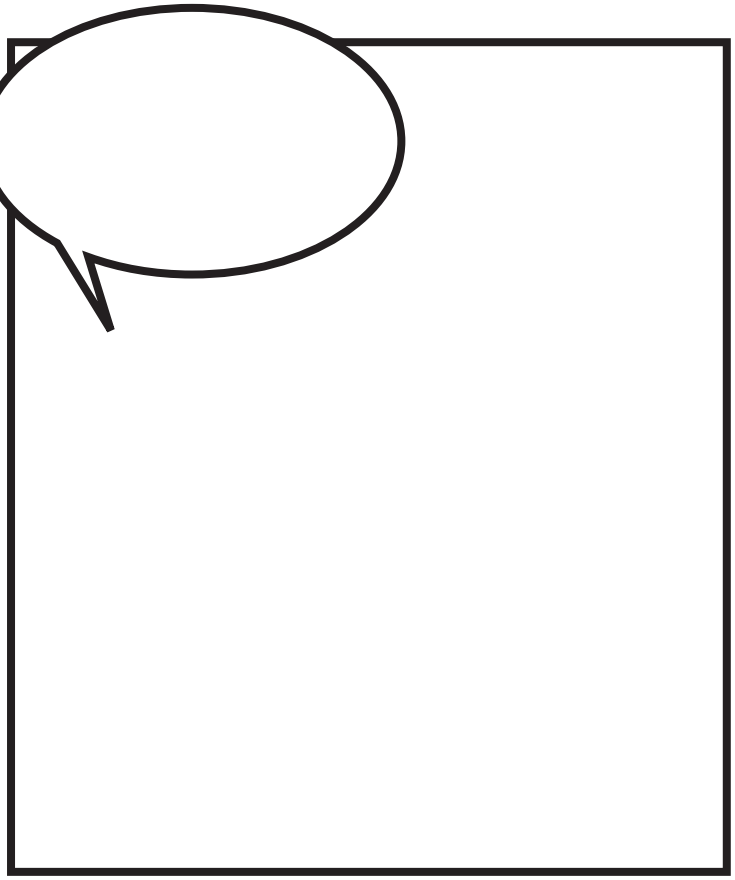

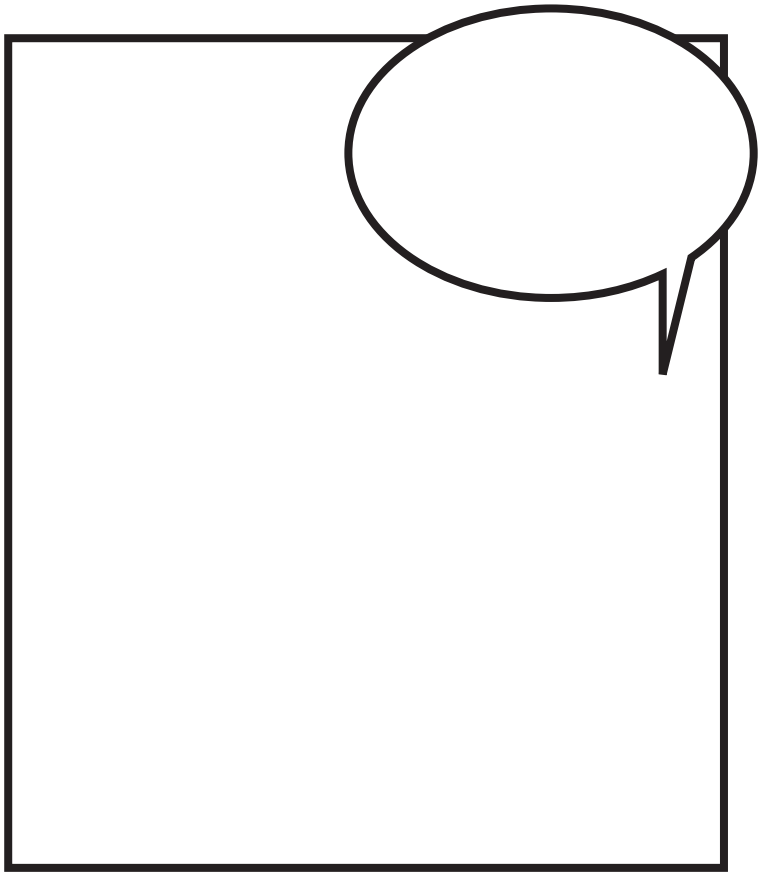

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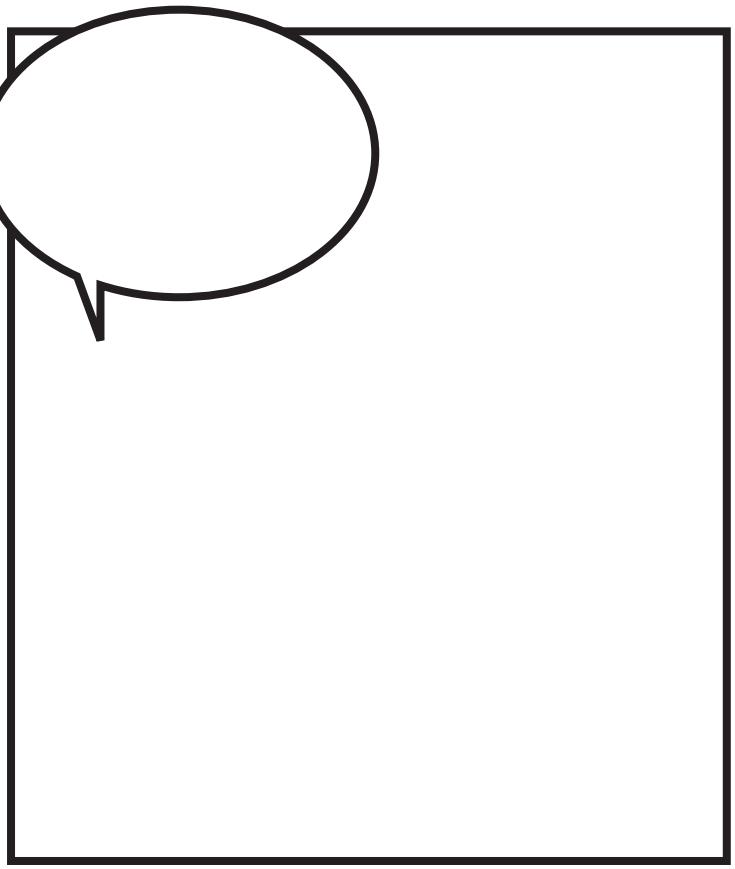

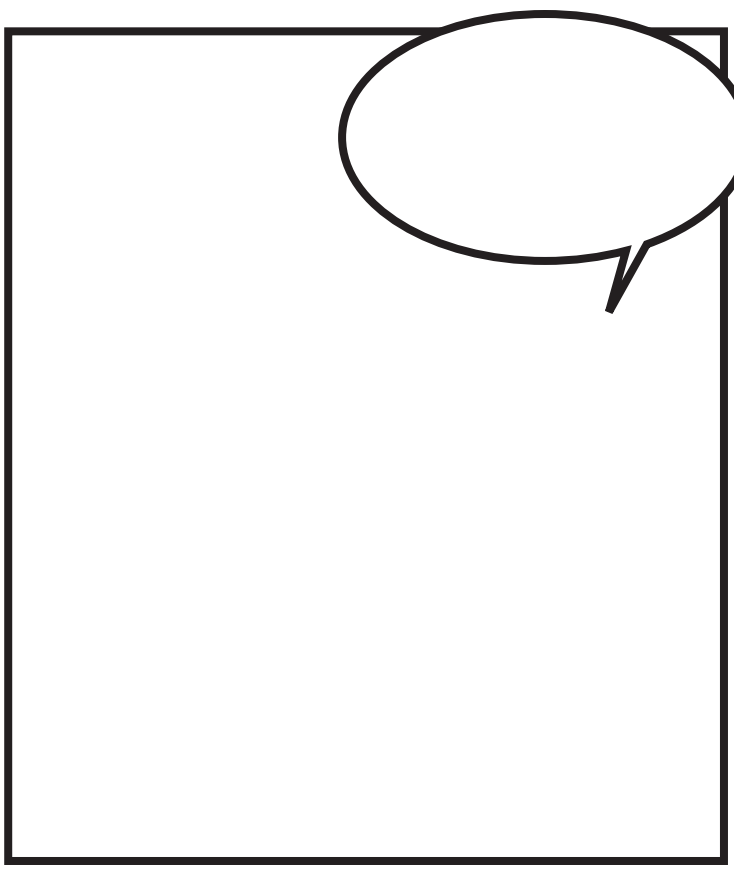

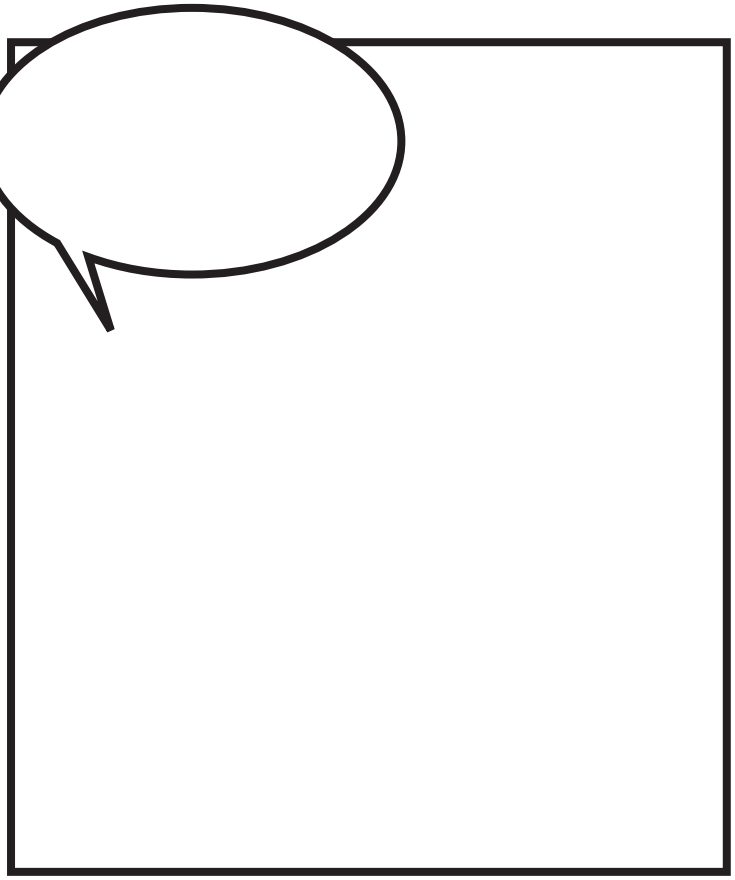

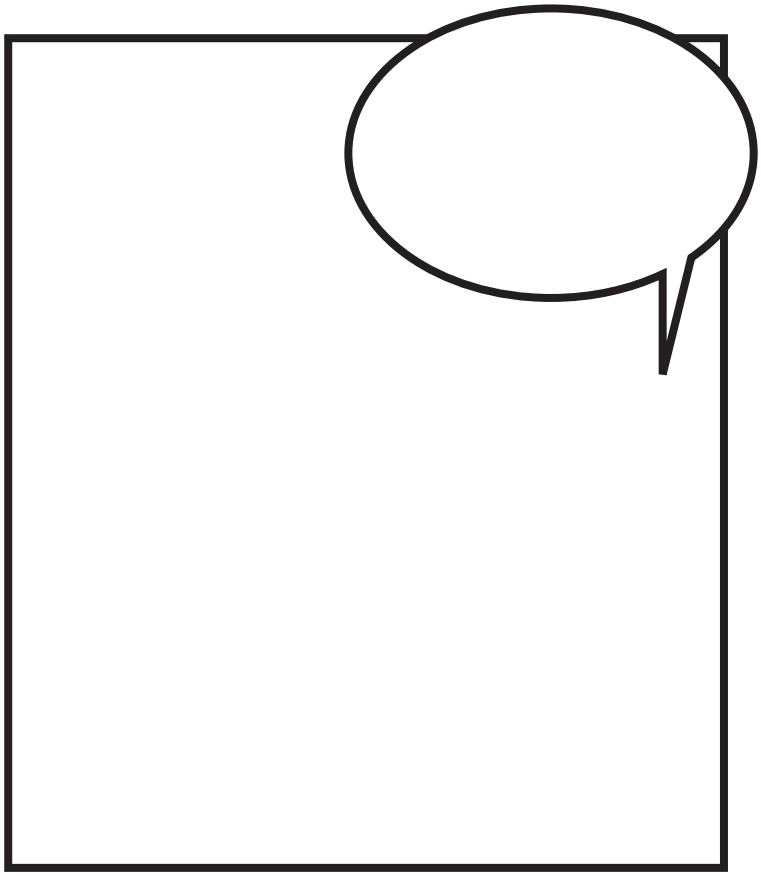

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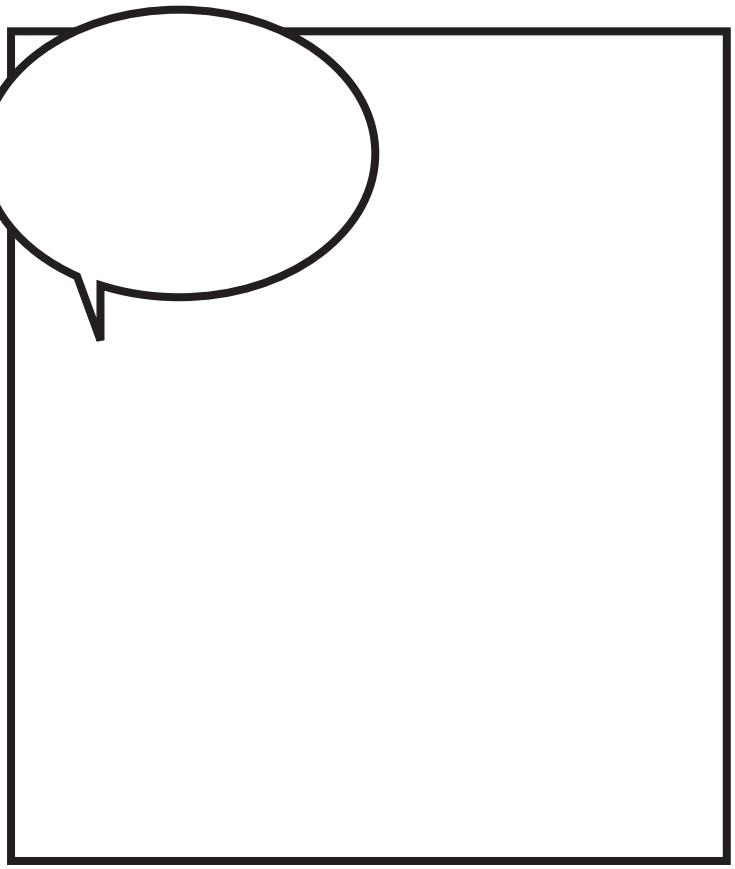

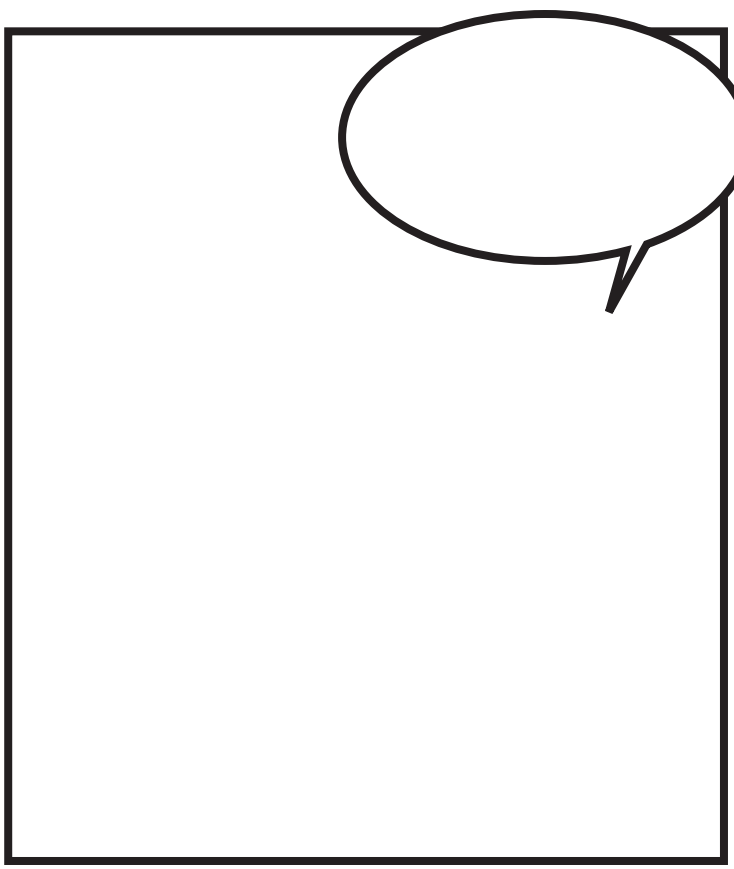

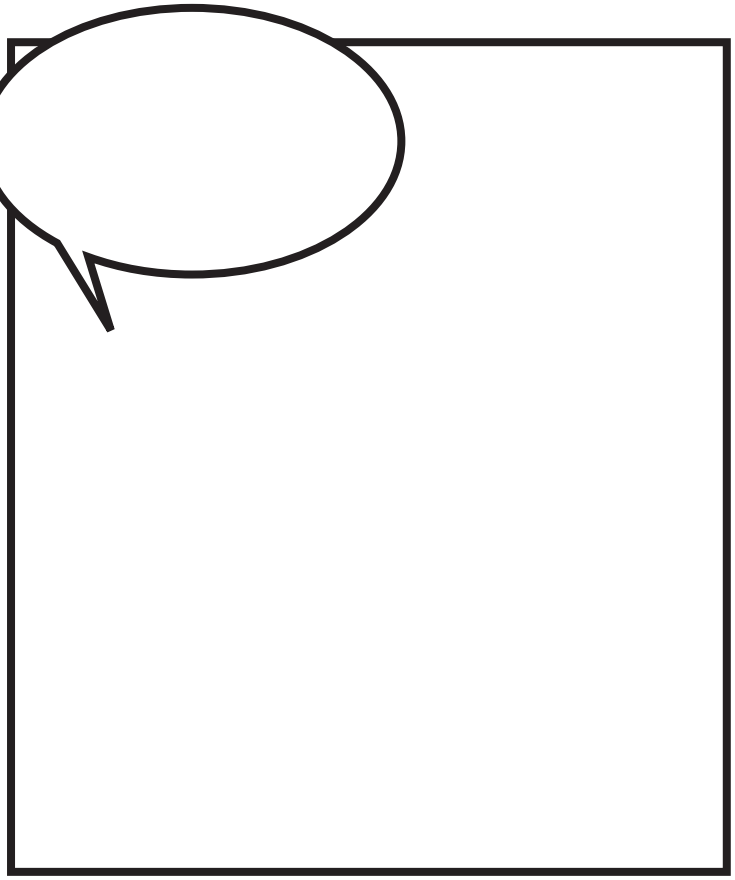

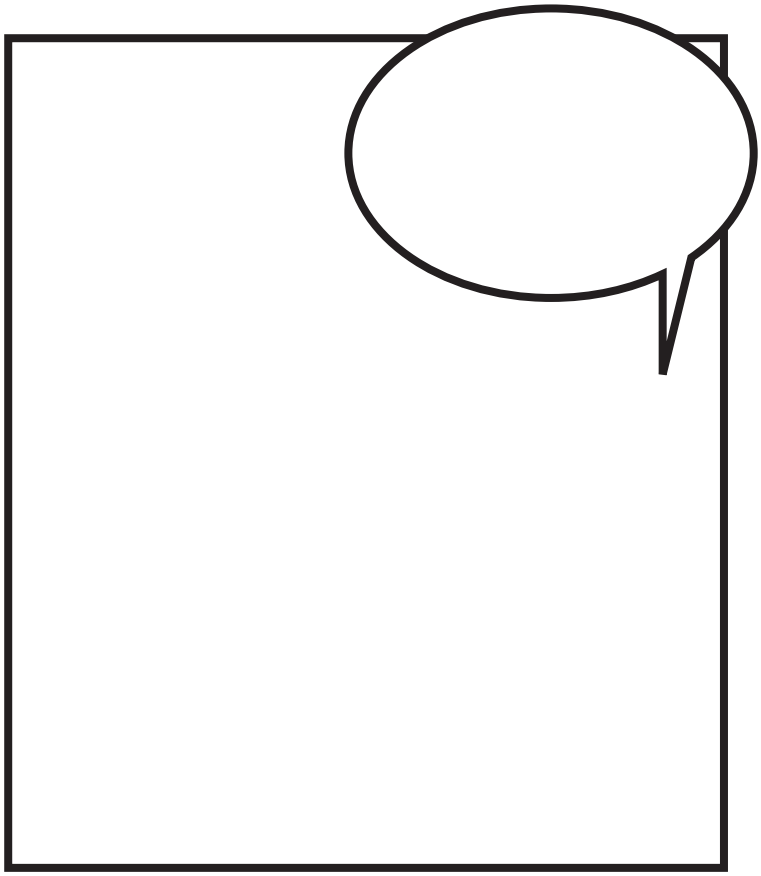

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Gluing Words: Coordinating and Subordinating Conjunctions

PART A

Conjunctions are like glue. They are the connecting pieces that combine two thoughts in a sentence. The bigger pieces in the sentence are *clauses*, a group of words that is a complete thought. A complete thought (or sentence) has a subject and a predicate. That means you can identify a "who/what" and a "what about it?"

We **listened to Bruno Mars' new album on my phone.**

↓ ↓

Subject **Predicate**

(WHO/WHAT) **(WHAT ABOUT IT?)**

Circle the subject and underline the predicate in the clauses below.

Then add a few examples of some of your own.

Juan bought a new computer
Juan still has his old computer
My new shoes get dirty
I wash my shoes in the sink
After the rain stopped
I went to the skateboard park

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PART B

Now let's combine clauses using conjunctions for glue. There are three kinds of conjunctions but the two most common are coordinating and subordinating conjunctions. Those sound like fancy words, but really they have simple meanings.

Coordinating Conjunctions allow you to combine two related and independent sentences.

There are seven coordinating conjunctions: and, but, for, nor, or, so, and yet.

I lost my dog + I got a new cat = I lost my dog, and I got a new cat.

Subordinating Conjunctions also allow you to combine two clauses in the case where one of them depends on the other for its meaning. The one that depends on the other is a dependent clause; it just provides added information about the other thought. The subordinating conjunction glues the two ideas together by indicating place, time, or cause and effect. **Some common examples are: after, although, as, because, since, than, until, unless, whenever, and while.**

I got a new cat **because** I lost my cat.

Combine the clauses in Part A to make new sentences using coordinating and subordinating conjunctions.

New sentences using **coordinating conjunctions:**

_____

_____

(Punctuation Tip: Add a comma before the conjunction)

New sentences using **subordinating conjunctions:**

_____

_____

(Punctuation Tip: If the dependent clause comes first, use a comma to separate the clauses)

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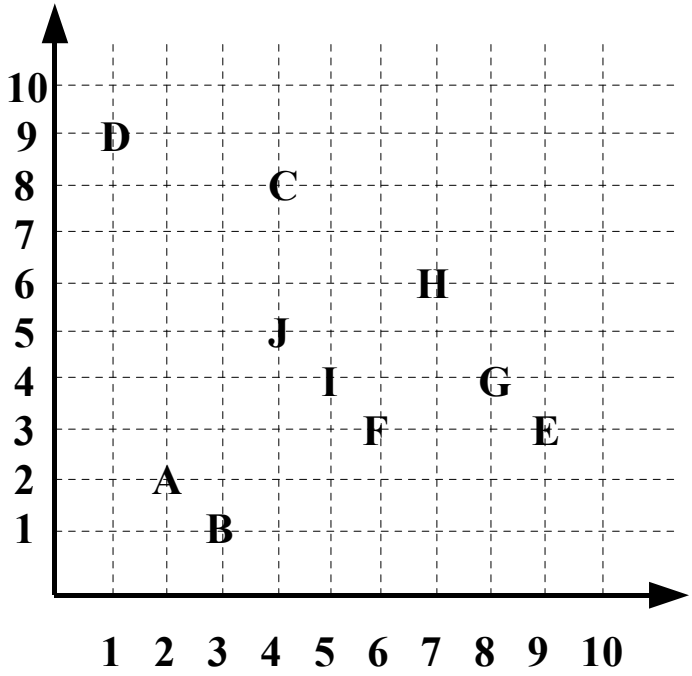
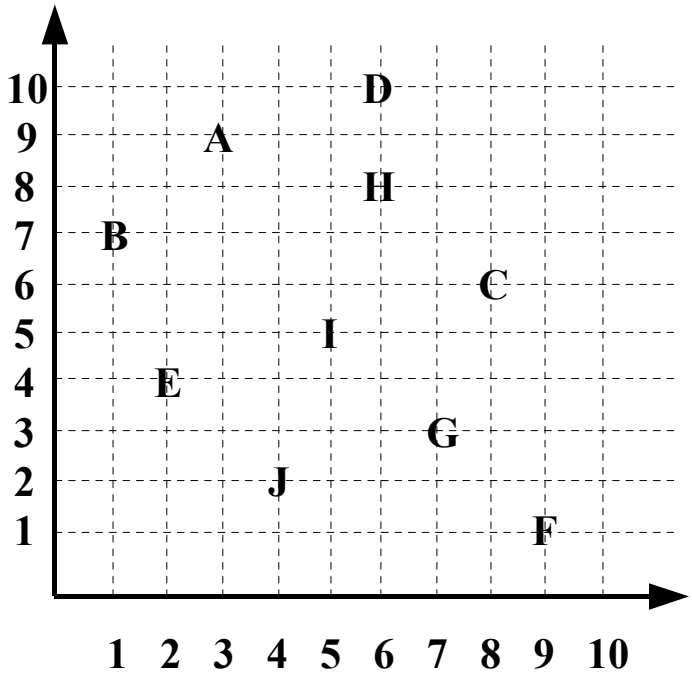
Positive Ordered Pairs

For each ordered pair, write the corresponding letter.



1. (2 , 2) =
2. (8 , 4) =
3. (1 , 9) =
4. (5 , 4) =
5. (6 , 3) =
6. (4 , 8) =
7. (4 , 5) =
8. (9 , 3) =
9. (7 , 6) =
10. (3 , 1) =

For each letter, write the corresponding ordered pair.



A =
B =
C =
D =
E =
F =
G =
H =
I =
J =

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Name _____ Date _____

DRAWING ON THE GRID
NIGHT SCENE

Instructions: Draw an unbroken line between each point listed on the grid on the following page. When you see an **X**, lift up your pencil and start a new line.

X, Y	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y
START ↓	10,9	16, 7	11, 25	15, 26	11, 17	X	X	28, 13
10,18	11,7	16, 3	12, 26	16, 27	12, 16	11, 13	18, 10	27, 13
10,7	12, 7	15, 2	13, 25	18, 26	13, 17	12, 12	20, 12	27, 14
7, 16	13, 9	16, 2	12, 24	18, 23	14, 16	13, 13	X	28, 14
7, 19	15, 9	17, 1	11, 25	16, 22	15, 17	X	1, 4	28, 13
10, 22	16, 7	17, 2	X	X	16, 16	8, 18	3, 3	30, 15
9, 23	17, 7	18, 2	15, 25	11, 21	17, 17	10, 16	6, 4	30, 13
9, 28	18, 9	17, 3	16, 26	12, 20	X	X	7, 4	29, 12
10, 27	X	17, 7	17, 25	13, 21	11, 11	18, 13	11, 3	29, 9
14, 28	11, 7	X	16, 24	14, 20	12, 10	20, 15	X	30, 9
18, 27	11, 3	13, 24	15, 25	15, 21	13, 11	X	12, 3	30, 8
19, 28	10, 2	13, 23	X	16, 20	X	8, 15	16, 3	29, 8
19, 23	11, 2	14, 22	13, 26	17, 21	15, 13	10, 13	X	29, 9
18, 22	12, 1	15, 23	12, 27	X	16, 12	X	17, 3	27, 7
21, 19	12, 2	15, 24	10, 26		17, 13	8, 12	21, 3	26, 5
21, 10	13, 2	13, 24	10, 24		X	10, 10	23, 5	22, 1
18, 7	12, 3	X	12, 22		15, 11	X	24, 7	1, 1
18,18	12, 7		X		16, 10	18, 16	26, 9	X
X					17, 11	20, 18	27, 11	END

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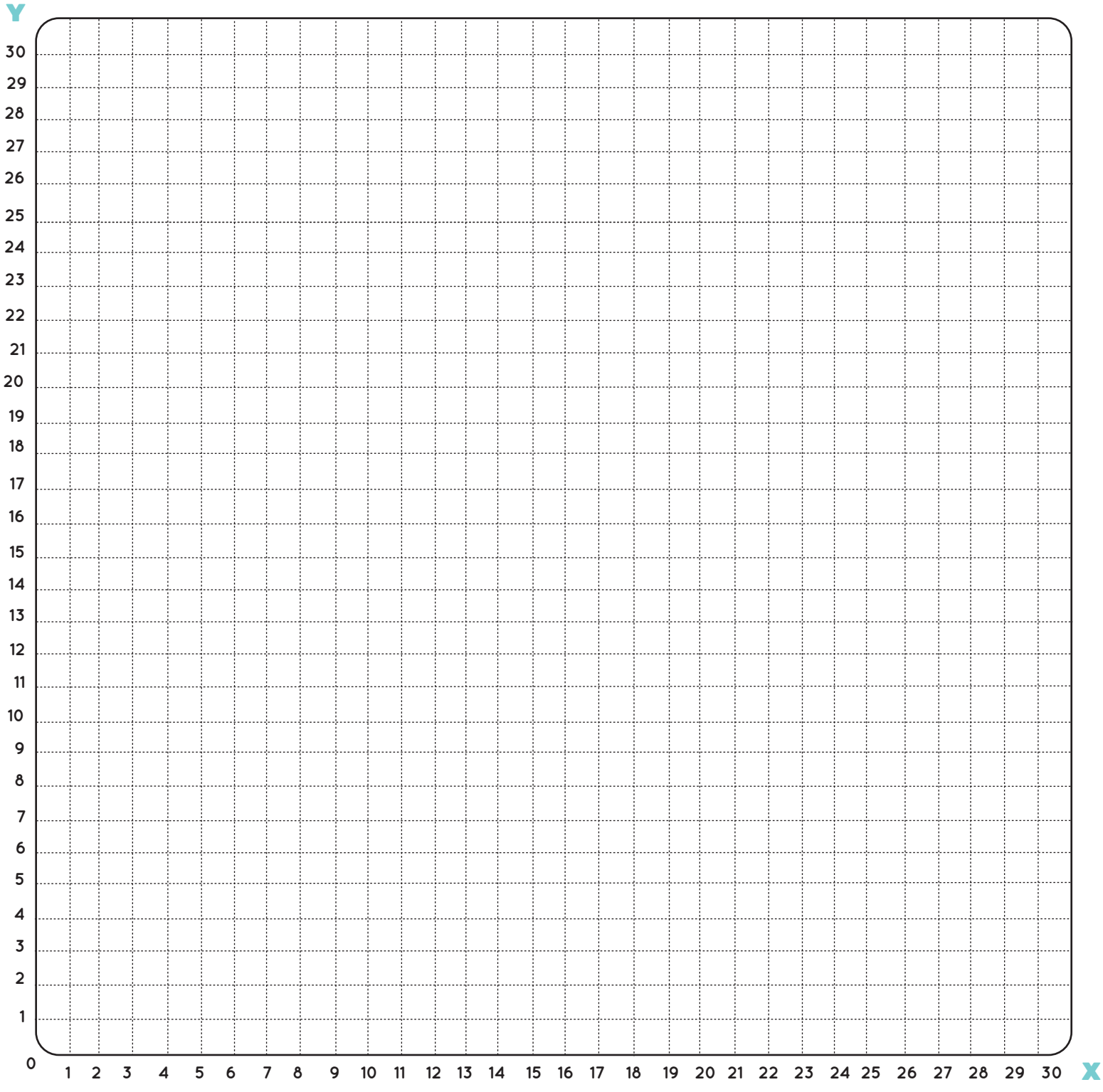
DRAWING ON THE GRID

NIGHT SCENE

Instructions: Draw an unbroken line between each point listed on the x and y coordinates on the previous page. What image emerges?



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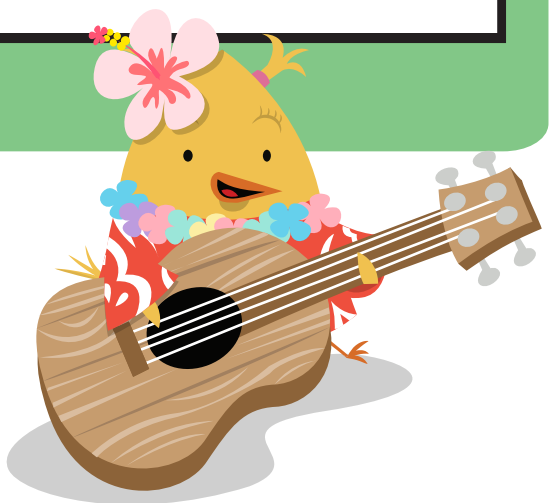
Social Studies

Learn about some history and create timelines.
The History of African American Spirituals
History of Money
Movie Timeline
Timeline of Sonia Sotomayor's Life (So Far)
Apollo 11



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Name _____ Date _____

The History of African American Spirituals

Spirituals have a long history in African American culture in the United States. A spiritual is a religious song that relates to the experience of enslaved African Americans.

Introduction to Spirituals

The word *spiritual* comes from the King James translation of the Bible verse Ephesians 5:19. The verse reads, "Speaking to yourselves in psalms and hymns and spiritual songs, singing and making melody in your heart to the Lord." Spirituals are a blend of the Christian religion enslaved Africans discovered in the American South, and the African-styled songs from their homeland.

Enslaved Africans would blend their style of music with Christianity. Singing as a form of communication is deeply rooted in African American culture. When Africans were kidnapped and shipped across the Atlantic during the Middle Passage, they used singing as a way to communicate during the voyage and to stay alive through the oppression and unjust treatment.

Spirituals During Enslavement

In the eighteenth century, enslaved Africans would gather together in "camp meetings" outdoors. There, they would sing and dance. Sometimes it would appear as if they were in a trance. At times they would also perform "ring shout" style, a shuffling, circular dance with chanting and hand clapping. This is seen in the faster versions of the spirituals "Swing Low, Sweet Chariot" and "Jesus Led Me All the Way."

Enslaved Africans were drawn to parallels between their difficult situation and those in Biblical stories. There was Moses, who would lead the Israelites out of slavery in Egypt. After the Israelites' emancipation, Moses led the escaped Israelites through the desert to the promised land, or Canaan. In the Bible, Canaan was the land God promised to the Israelites. This hope for a better future is found in the lyrics, "O Canaan, sweet Canaan, I am bound for the land of Canaan." Influential abolitionist and former enslaved person Fredrick Douglass wrote of this spiritual in his book *My Bondage and My Freedom* (1855). Douglass said this spiritual spoke of getting into heaven. He said it was also about the enslaved people arriving in the North, where they could find freedom.

At times, enslaved Africans would sing spirituals to strengthen their resolve, or to persevere toward a better future. Not only would the songs have double meanings, but they would sometimes have messages. Enslaved Africans would also sing songs while working in the fields. Some of the spirituals would have encoded meanings, like "Go Down, Moses," which Harriet Tubman used when she was a conductor for the Underground Railroad. Tubman would use the song to let people know she was there to help them while they escaped.

Spirituals During Emancipation

The Emancipation Proclamation of 1863, signed by Abraham Lincoln, meant that some enslaved people were free. But slavery continued to exist. African Americans still did not have the same rights as white Americans. Even after the 13th Amendment to the Constitution passed in 1865, making slavery illegal in the whole country, African Americans still did not have equal rights.

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Name _____ Date _____

The History of African American Spirituals

As newly emancipated African Americans searched for jobs and homes, they continued to face unjust treatment. Some examples of the racism they encountered included not being able to get jobs and fair pay because of the color of their skin. During this time, African Americans would continue to use spirituals to share their frustration over this unequal treatment. The spirituals were also about their hope for a better life.

The Montgomery Bus Boycott from 1955 to 1956 used spirituals to strengthen people's resolve during their year-long refusal to use the bus. During the boycott, African Amerians would share rides or walk. In some cases, their commute to work took longer than if they caught the bus! One spiritual they sang to persevere through this time was "Keep Your Eyes on the Prize." It was based on the gospel hymn "Keep Your Hands on the Plow," but they changed the words to fit their current boycott circumstance. The Montgomery Bus Boycott marked the start of the civil rights movement, whereby people would come together to demand equal treatment for all Americans.

Spirituals During the Civil Rights Movement

The 1960s was the era of protest songs and freedom songs. Spirituals changed into songs that had a political message, or that hoped for change. During the civil rights movement, people used music to express their views on justice and equality. Protest songs were a popular form of music. They could be heard both at rallies and on the radio.

"Keep Your Eyes on the Prize" was just one of many songs adapted from spirituals during the civil rights movement. The movement's famous song, "We Shall Overcome," mixed the gospel hymn "I'll Overcome Someday" with the spiritual "I'll Be Alright." Combining the songs allowed protesters to link their past trials with their current unequal treatment.

During the March on Washington for Jobs and Freedom in 1963, musicians Bob Dylan, Joan Baez, and Peter, Paul and Mary performed to show their support for the movement. Often protest songs describe something that is going on in a community, or the world. These songs describe the kind of changes they would like to see happen. Protest songs can be angry, sad, or optimistic. They have been written in all different styles, from folk to soul to hip-hop. Songs like "What's Going On" and "A Change is Gonna Come"are examples of protest songs.

Impact of Spirituals

Without a doubt, spirituals have been an important part of African American culture. During each period of struggle, African Americans have used songs to help them persevere. Songs are used to communicate messages. Spirituals are used to hope for a better future for African Americans and their families. While there have been different styles of spirituals over the years, the purpose has been the same: to sing about the African American experience.

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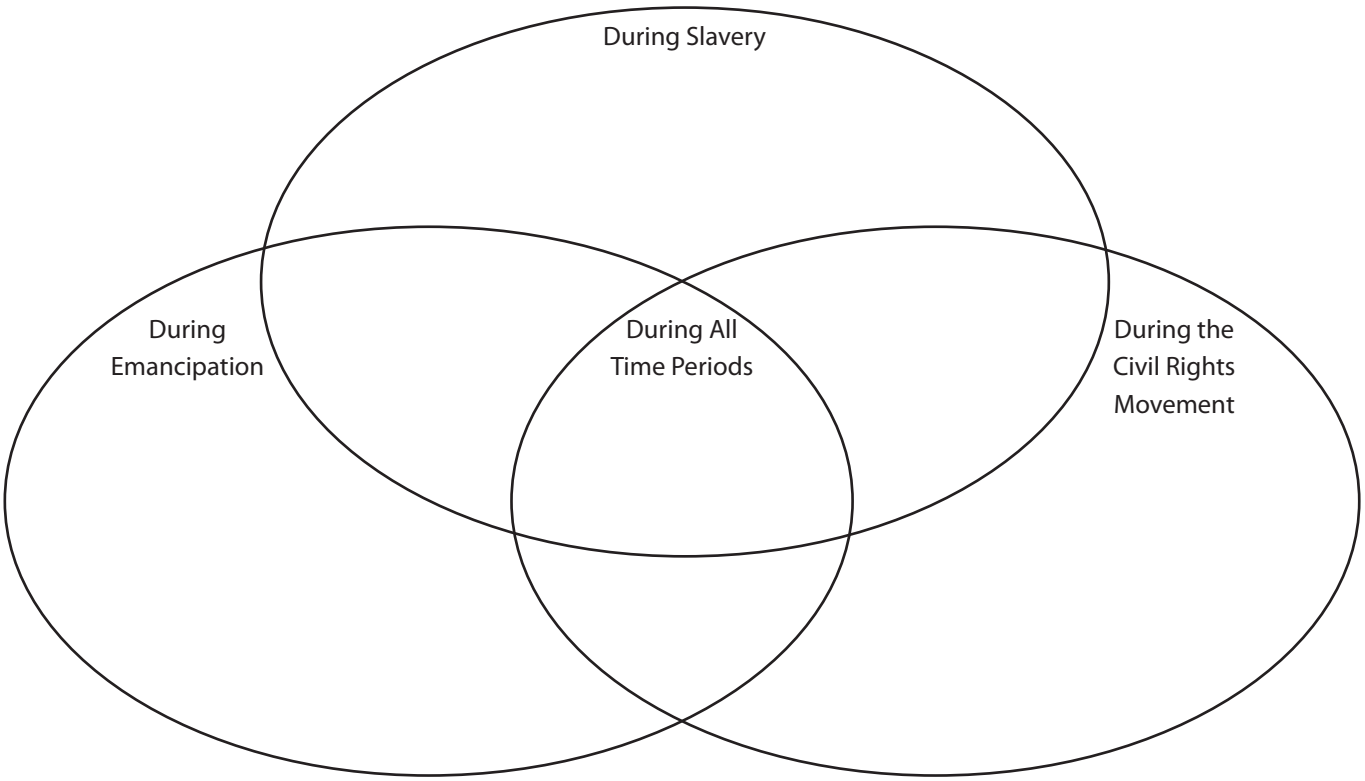
Name _____ Date _____

The History of African American Spirituals

Directions: Complete the table with information from the text.

Write key details about spirituals during enslavement.
Write key details about spirituals during the emancipation period.
Write key details about spirituals during the civil rights movement.

Use the details of the different types of spirituals to compare spirituals in the Venn diagram.



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History of American Money

Study this timeline of important events in the history of money in the United States.

Timeline events

1792

The original U.S. Mint is established in Philadelphia, Pennsylvania, which was temporarily the country's capital city. The mint produces only coins, such as the $10 coin, one-cent coin, and half-cent coin.

1796

The dime and quarter are produced by the mint for the first time.

1861

Congress needs money to finance the Civil War and authorizes the mint to print paper money. People could redeem the bills for coins on demand, which created the term "demand notes." Paper bills were nicknamed "greenbacks," a term that is still used today to refer to U.S. currency.

1862

The first $1 bill is printed bearing the picture of President Abraham Lincoln's treasury secretary, Salmon P. Chase.

1869

George Washington's portrait appears on the $1 bill for the first time. His picture remains on the bill today.

1877

1877: The U.S. Treasury Department's Bureau of Engraving and Printing (BEP) becomes the single producer of American paper currency.

1957

The $1 bill becomes the first U.S. currency to bear the motto "In God We Trust."

1969

The treasury secretary announces that bills in denominations larger than $100 will no longer be produced.

1991

The BEP begins production of the first $100 bills that contain an embedded security thread and microprinting.

1996

New $100 bills are released that have a larger portrait and new features to prevent counterfeiting.

2010

The mint begins producing quarters with national parks pictured on them. This is part of the mint's "America the Beautiful Quarters" program.

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Answer these questions about the history of American money.

1. Where was the first U.S. Mint?_____

2. What was Salmon P. Chase's position in the U.S. government when he appeared on the $1 bill? _____

3. What was the major difference between the original U.S. Mint and the BEP?_____

_____

_____

In 1792, coins were practically made by hand. It took coiners three years to produce the first million coins. Today, it takes 22.2 hours to produce the same number of coins.

4. What was the official name for "greenbacks" in 1861? _____

5. In what year did the U.S. Mint start making its "America the Beautiful Quarters"? _____

Before paper money, Americans traded animal skins, such as those from deer and elk bucks. This is why dollars are sometimes called "bucks."

6. If you could create a new denomination in U.S. currency, what would be the amount? Whose picture would you put on your new currency, and why?

_____

_____

_____

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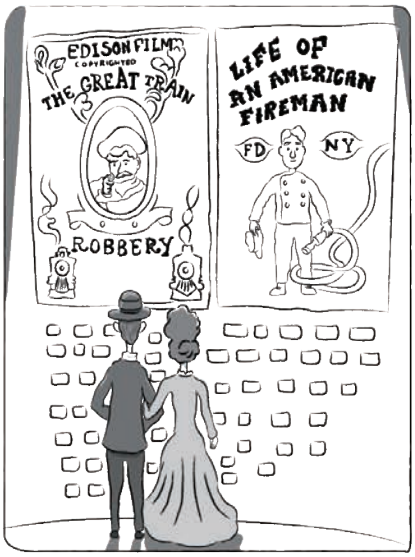
Before we dive into the exciting world of cinema, let's get familiar with the major events of early movie history. Cut out the years and events below and paste them onto the historical timeline on the next pages to get an idea of when these exhilarating events took place.

1906
The first animated cartoon is made.

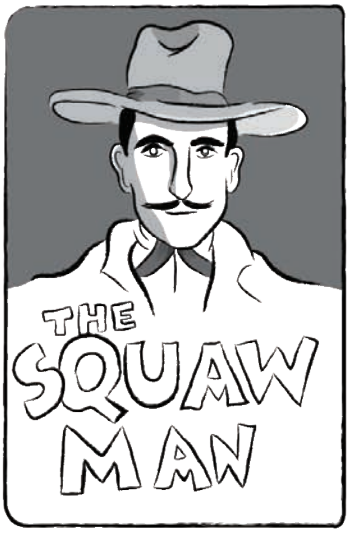
1893
Thomas Edison invents a device in which film is moved past light. They name it the Kinetoscope.

1878
Photographer Eadweard Muybridge successfully captures motion using photography.



1903
The push toward storytelling in film begins with films such as *The Great Train Robbery* and *The Life of an American Fireman*.

1903
Louis and August Lumière present the first paid exhibition of projected motion pictures in Paris.



1913
The first feature-length film, Cecil B. DeMille's *The Squaw Man*, is produced in Hollywood.

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1875

1896 **U.S.**
Utah becomes a State.

1900 **U.K.**
The London Underground railway system opens.

1903 **U.S.**
The Wright Brothers complete the first successful flight in Kitty Hawk, North Carolina.

1906 **U.S.**
The Great San Francisco Earthquake & Fire shakes the West Coast, centered in California.

1907 **U.S.**
Oklahoma becomes a state.

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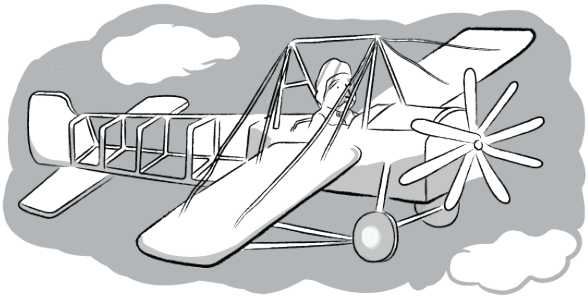
1909 **U.S.**
Louis Blériot crosses from France to Britain over the English Channel in an airplane. It takes 37 minutes.



1912 **U.S.**
New Mexico becomes a state. Arizona also becomes a state; another state will not be adopted into the Union until 47 years later.

1918
World War I ends and countries sign the Armistice, followed by the Treaty of Versailles in 1919.

1914 **SERBIA**
Archduke Franz Ferdinand is assassinated.

1914 **EUROPE**
World War I begins.

1920 **U.K.**
The first roadside gas station opens in Great Britain.

1919 **U.S.**
Congress passes the 19th Amendment, which guarantees American women the right to vote. (It's put into law August 18, 1920.)

1922 **EGYPT**
Archaeologists discover the tomb of King Tutankhamun.

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Name _____ Date _____

Timeline of Sonia Sotomayor's Life (So Far)

Sonia Sotomayor is the first Latina Supreme Court Justice in United States history. The Supreme Court is the highest court in the country, meaning its decisions on court cases are final. The Justices are nominated by the President and serve a lifetime appointment after the Senate approves their nomination.

Directions: Use the timeline about Sonia Sotomayor's life to answer questions about her.

1. What event happened after Sonia Sotomayor joined the law firm of Pavia & Harcourt?

2. How many years was Sonia Sotomayor a lawyer before becoming a judge?

3. In what year did Sonia Sotomayor become a judge in the Southern District of New York?

4. What do you wonder about Sonia Sotomayor that you cannot find on the timeline?

Born on June 25	1954
Diagnosed with Diabetes	1961
Father died	1963
Got a set of encyclopedias	1966
Graduated from high school	1972
Graduated from Princeton University	1976
Graduated from Yale Law School	1979
Became an Assistant District Attorney in New York County	1979
Joined the law firm of Pavia & Harcourt	1984
Became a U.S. District Court Judge for the Southern District of New York	1992
Joined the U.S. Court of Appeals for the Second Circuit as a Judge	1998
Nominated by President Barack Obama to be a U.S. Supreme Court Associate Justice on May 28	2009
Sworn in as the 111th Justice of the Supreme Court on August 8	2009

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Name _____ Date _____

Timeline of Sonia Sotomayor's Life (So Far)

4. Write on the lines the missing information from this piece of the timeline.

Graduated from Princeton University	_____
Graduated from Yale Law School	1979
_____	1979
_____	
Joined the _____ of Pavia & Harcourt	1984
Became a U.S. District Court Judge for the Southern District of New York	1992
Joined the U.S. Court of Appeals for the Second Circuit as a Judge	_____
Nominated by _____	_____
to be a U.S. Supreme Court Associate Justice on May 28	
Sworn in as the _____ Justice of the Supreme Court on August 8	2009

5. Do some research about Sonia Sotomayor. What events would you like to add to the timeline? What events would you eliminate? Explain your choices.

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U.S. SPACE MISSIONS

Apollo 11

Apollo 11 astronauts Neil Armstrong, Michael Collins and Edwin Aldrin

Apollo 11 was the historic U.S. space mission where the first man walked on the moon. The mission completed the goal established by President John F. Kennedy in 1961 to put a man on the moon before the end of the 1960s.

Apollo 11 launched on July 16, 1969 from the Kennedy Space Center in Florida. On board the command module, called Columbia, was the crew of three astronauts: Edwin Aldrin, Neil Armstrong and Michael Collins.

Launch of Apollo 11

On July 19, Apollo 11 reached the moon and orbited 30 times. The next day, Armstrong and Aldrin went on board the lunar module, named Eagle. Eagle would take them to the moon's surface. Collins remained on board Columbia and continued to orbit the moon.

Eagle landed on the moon's surface on July 20, 1969. Neil Armstrong was the first person to walk on the moon. Aldrin followed Armstrong and the two began a series of scientific experiments. They also placed a U.S. flag on the moon surface. The astronauts reported that walking on the moon, which has 1/6 the gravity of earth, was not difficult.

After almost 22 hours on the moon, Aldrin and Armstrong returned to Eagle and left the moon surface to rejoin Collins in Columbia. They then began the trip back to Earth.

Apollo 11 landed safely in the Pacific Ocean on July 24, 1969. A total of 12 men would walk on the surface of the moon before the Apollo program ended in 1972.

Q&A

What year did Apollo 11 launch?

_____

Who was the first man to walk on the moon?

_____

What was the name of the lunar module?

_____

The gravity of the moon is what fraction of the Earth's gravity?

_____

Astronaut Neil Armstrong on the moon

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Science

Continue thinking about cause and effect in science!
Environmental Impact
Tsunami Science
Cause and Effect Comic Strips

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Environmental Impact

Name: _____

Instructions: Improve your analytical thinking skills by studying the impacts of specific actions. After choosing a topic, research and write about the positive and negative effects of certain actions.

Topic: _____

Positive Causes and Effects

Action (Cause)		Effect
_____	⇨	_____
_____	⇨	_____
_____	⇨	_____
_____	⇨	_____

I noticed... _____

_____

Negative Causes and Effects

Action (Cause)		Effect
_____	⇨	_____
_____	⇨	_____
_____	⇨	_____
_____	⇨	_____

I noticed... _____

_____

Summarize what you learned.

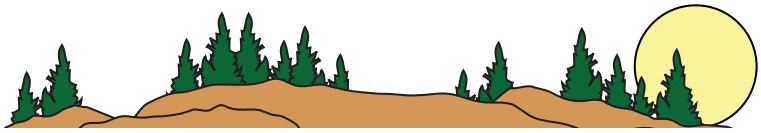
_____

_____

_____

_____

_____



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Explore Tsunamis!

phenomenal science

On **December 26th 2004**, a massive **tsunami** rose from the Indian Ocean. This **tsunami** was one of the most destructive natural disasters anyone had ever seen before. Where did these disastrous waves come from, and how was this **tsunami** able to hit so quickly, without warning?

There are several different situations that can cause a **tsunami**: **underwater volcanic eruptions**, **meteor strikes**, **coastal landslides**, and, most commonly, **underwater earthquakes**.

Earthquakes that cause **tsunamis** involve the earth's **tectonic plates**. These plates are constantly moving over and under one another. The upper plate can get stuck on the lower one, building pressure. When the pressure grows large enough, the upper plate will snap upwards *very* quickly. When the plate snaps up by several inches, it also pushes an entire section of the ocean with it. This part of the ocean will suddenly be several inches above sea level. Once this spike happens, the water will spread out in order to restore equilibrium. This bump will spread out with incredible speed, moving at *hundreds of miles per hour*. When the wave reaches the shallower waters of the coast, the compressed energy of the wave will transform it into a **tsunami**. A typical **tsunami** approaching land will slow down to speeds of 30mph as the wave grows to *heights of up to 90ft above sea level*. A **tsunami** almost always promises flooding, destruction, and sometimes loss of life.

Scientists have the equipment to detect underwater earthquakes, just before a **tsunami** can hit the coast. However, because these giant waves form so quickly and hit coastal areas at hundreds of miles per hour, these detections often come too late. If you live near the coast, be aware of **tsunami zones**. Make sure your family has a plan in case you are caught near the wave.

Historical Tsunamis

1755 — Lisbon Tsunami
Following the devastating Lisbon earthquake, the tsunami nearly destroyed the Portuguese city of Lisbon.

1883 — Krakatoa Tsunami
The volcanic island of Krakatoa destroyed two-thirds of the Indonesian island, and sent high waves across the Indian Ocean, killing 36,000 people.

2004 — Indonesian Tsunami
Over 230,000 people in 14 countries died after this tsunami hit. It was one of the deadliest natural disasters in recorded history.

2011 — Tohoku Tsunami
Following one of the most powerful earthquakes, a series of giant tsunamis hit Japan. The disaster cost Japan 15,000 lives and $235 billion in economic loss.

Safety Tips

1. If you live near the coast, look up your local tsunami broadcast.
2. Be aware of nature's warning signs. Tsunamis often follow after earthquakes, landslides near the coast, volcanic eruptions, and meteor strikes.
3. If you see a tsunami happening, leave the beach immediately and go to higher ground.
4. If you don't have an emergency kit, help your family put together one that includes a first aid kit, a supply of fresh water and canned food.

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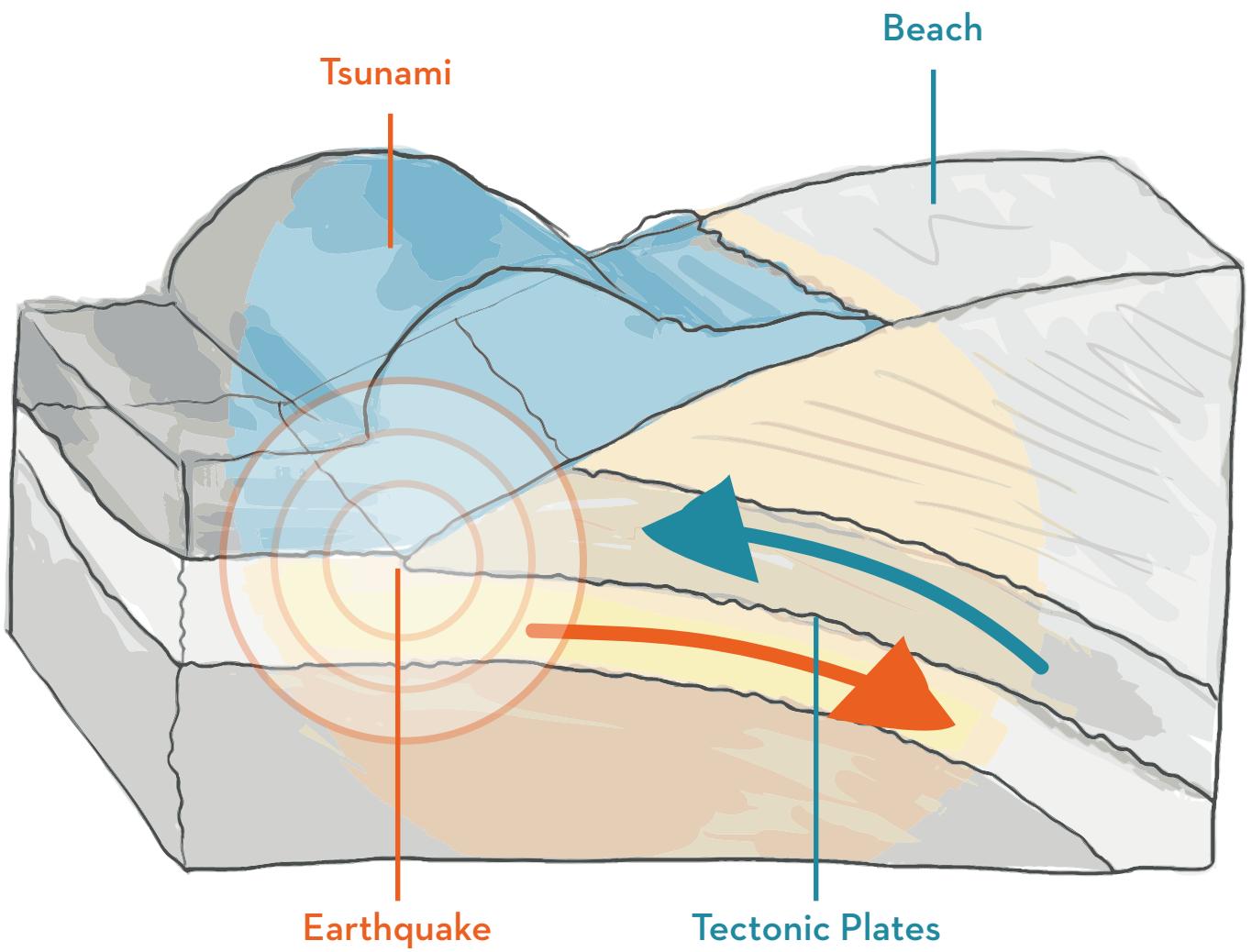
Explore Tsunamis!

phenomenal science



After reading the article on tsunamis, please answer the following questions:

Name two different events that would cause a tsunami._____

How do tectonic plates cause earthquakes?_____

What are some ways you can prepare for a tsunami?_____

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Name_____ Date_____

Cause and Effect Comic Strips

Think of some examples of cause and effect from your recent science unit. Write and draw the "cause" in the first square and the "effect" in the second square. Come up with three different cause and effect comic strips. Don't forget to be creative with captions, pictures, speech bubbles, and sound effect bubbles!

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Name_____ Date_____

Cause and Effect Comic Strips

Think of some examples of cause and effect from your recent science unit. Write and draw the "cause" in the first square and the "effect" in the second square. Come up with three different cause and effect comic strips. Don't forget to be creative with captions, pictures, speech bubbles, and sound effect bubbles!

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Optional

Activity
Make a Better Paper Airplane
Make a Rube Goldberg Machine

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Make a Better Paper Airplane

What child hasn't spent time making a paper airplane? Why not turn this common pastime into a lesson on the physics of aerodynamics and flight? This is a great activity for students of all ages, but older students should have a greater understanding of fluid dynamics and be able to push the outer limits of paper airplane design!

What You Need:

- Various types of paper (any paper around the house is fine, but try to locate papers with different weights and thicknesses)
- Stopwatch
- Possible other materials include paper clips, stapler, scissors, and glue as needed by design

What You Do:

1. Brainstorm ideas with your kid about what makes a good paper airplane. Talk about the different variables that can be changed (a type of paper, folding pattern, other materials used) and how each of these may influence the flight of the plane. Physics concepts to consider:
    - Archimedes' Principle – An object surrounded by air is buoyed up by a force equal to the weight of the air displaced. If your budding Orville Wright uses heavier materials in the plane construction, your learner needs to take into account that more air must be displaced in order to keep the plane aloft. Your child should consider compensating with a broader wingspan.
    - Bernoulli's Principle – When the speed of a fluid increases, pressure in the fluid decreases. In this case, the fluid is air. In order for a plane to stay airborne, there must be less pressure above the wing then below it. This allows the greater bottom pressure to exert an upward force on the wing, giving the plane lift. In order to accomplish this, wings tend to have a greater surface area on the tops than the bottoms. Picture the curved, slightly upturned, top of a wing. Now, as the plane moves through the air, wind must travel faster over the curved top of the wing than the flat bottom of the wing, providing lift.
    - Air Resistance – Friction causes drag, an opposing force to the forward motion of the plane. In order to decrease air resistance, your child should consider an aerodynamic design that allows the plane to "slice" through the air. Possible design accommodations should include a pointed nose and smooth body.
2. Gather the materials and each of you make an airplane that you think will stay airborne the longest.
3. Let the competition begin! Either head outside on a calm day or find a large enough space to fly your planes indoors. Each person should take a few practice throws, then take turns having one person fly his plane while the other person times the flight. See whose plane stays airborne for the longest time!
4. Discuss the differences between your planes and why the winning plane flew longer than the other plane. Consider hitting the drawing board with new designs for a rematch! There are loads of sites on the Internet with various paper airplane designs. Consider visiting a few and seeing how their designs compare to the designs used by your child.
5. Turn up the heat on the competition and change the goal! Who can design the best trick airplane? Highest flying? Fastest?

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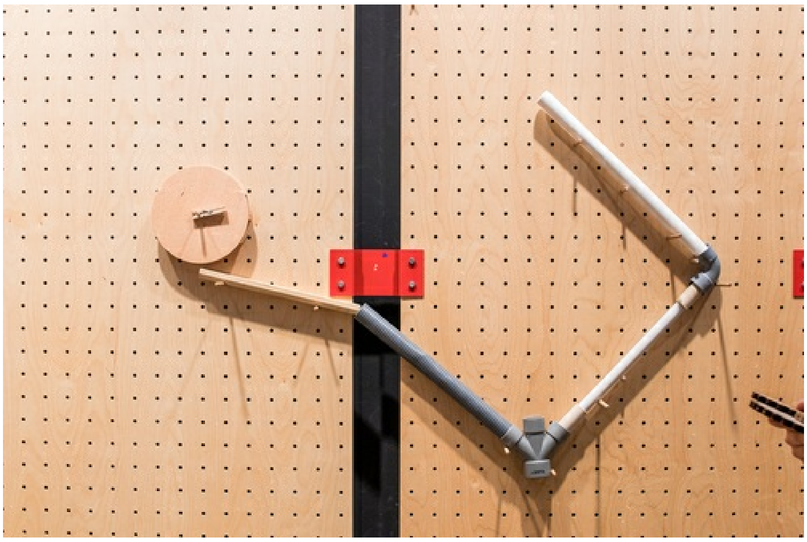
Design Challenge: Make a Rube Goldberg Machine



In this design challenge, your child will make their very own Rube Goldberg Machine! They will use household reusable materials to make a complex machine that completes a simple task. This activity allows for your child to be creative with their ideas and follows the design thinking process of brainstorming, prototyping, and then redesigning to improve their machine.

What You Need:

- Any materials found around the house, such as:
  - Cardboard
  - Popsicle sticks
  - Cotton balls
  - Dominoes
  - Legos
  - Paper cups
  - Toy cars
  - Duct tape
  - Marbles
  - String
- Pencil and paper for notetaking and brainstorming
- Scissors
- Tape and/or glue

What You Do:

1. Explain the purpose of the Rube Goldberg Machine to your child. Explain that rather than simplifying a complicated task, these machines perform a simple task in a complicated way. Consider showing your child a video of Rube Goldberg Machines online. (Here is a possible example video of a Rube Goldberg machine) Ask your child what makes these machines different from others they have seen.
2. Ask your child to brainstorm tasks for their machine to complete. Some of these could be:
   - Turning on or off a light switch
   - Turning off an alarm clock
   - Squeezing toothpaste on a toothbrush
   - Turning on a faucet
   - Opening a phone app
   - Popping a balloon
3. Have your child choose which task they would like to use for their machine.
4. Ask your child to collect various materials that they think might be useful in creating a machine to complete their chosen task. Remind your child that they will not have to use all of the items in their machine.
5. After collecting materials, have your child brainstorm different ways they can use their materials to complete their task. Ask them to write or draw several ideas on a piece of paper, and ensure that they remember the purpose of their machine: completing a simple task in a complicated and creative way.
   - Consider having your child design their machine backwards, working from the completion of the task itself and adding on more elements to the beginning of the machine.
6. After your child has finished brainstorming, ask them to choose the design they think will work best. Once again, emphasize the purpose of their Rube Goldberg Machine: to complete a simple task using a complicated machine. This is an important step of the design thinking process because it teaches your child to prioritize the functionality of their design over personal preferences, and it prevents them from getting too emotionally attached to one design.

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