ISD Grade Level: 4th Grade
ISD Content: ELA
Week: April 27- May 1

Inspiring Greatness

INDEPENDENCE SCHOOL DISTRICT

Work Page

Weekly Reading Journal

April 27th - May 1st, 2020

Use the strategy of determining importance during reading to strengthen understanding.

	Log your reading!	Express your reading!
Mon. 4/27	Book:_____ _____ Circle: Fiction Non– Fiction Pages Today: _____	What is my reading goal? _____ _____ What information did I gain reading today?_____ _____ Reading Rating 
Tues. 4/28	Book:_____ _____ Circle: Fiction Non– Fiction Pages Today: _____	What is my reading goal? _____ _____ What information did I gain reading today?_____ _____ Reading Rating 
Wed. 4/29	Book:_____ _____ Circle: Fiction Non– Fiction Pages Today: _____	What is my reading goal? _____ _____ What information did I gain reading today?_____ _____ Reading Rating 
Thurs. 4/30	Book:_____ _____ Circle: Fiction Non– Fiction Pages Today: _____	What is my reading goal? _____ _____ What information did I gain reading today?_____ _____ Reading Rating 
Fri. 5/1	Book:_____ _____ Circle: Fiction Non– Fiction Pages Today: _____	What is my reading goal? _____ _____ What information did I gain reading today?_____ _____ Reading Rating 

What are some things that stood out to you during reading? What did you learn that was new?

_____

_____

_____

_____

_____

Choice Board
Weekly Reading Skill

April 27th – May 1st, 2020

Determining Importance:

Deciding what information is important for comprehension. This includes being able to filter out things in the reading that make it interesting, but are not important.

-Pick 1-2 activities per day to complete to practice determining importance.

1

Stellar Stems

After you read today, pause to complete the following thinking stems!

1: ____ is important because _____.

2: I want to remember _____ because _____.

2

Throw Away the Fluff!

As you read today, determine what the "fluff" could be.

Make a list of what you notice that your consider not crucial or extremely important, to the story.

3

Movie Madness

If you were to make this book into a movie:

- What important details would you make sure to include?
- What parts do you think you could leave out?

Plan out the movie.

4

Book Blurb

Write a new summary for the back of your book.

Make sure to include important parts that would make a reader want to read that book!

5

Read aloud to someone at home!

6

Important vs. Interesting

While reading, write down information from the text. Sort important information that is interesting, but not necessary for understanding.

7

News Report

After reading a nonfiction text, write a news report script to present your topic.

Present to a family member or make a video presentation.

8

Cue The Clues

As you read, look for the important things in the book, like solving a mystery.

See if you can link all the clues of the mystery before the book gives it away.

9

Notable Nonfiction

In a nonfiction book, look for he important_things that tell all about your topic.

Make a presentation that shows how Nonfiction features helped you find the important things.

Practice Page for April 27th

Fill in the blanks for the definitions of Cast of Characters, Setting, and Acts and Scenes. Then complete the extra practice.

1. The _____ is where and when the play or story takes place.
2. The _____ is the characters listed at the beginning of the play.
3. _____ and _____ are the different parts of the play.

Extra Practice - Think of a movie or play you have watched. What was the setting and who were the characters? Describe one scene or act.

_____

_____

_____

_____

Related Words

Related words are words that share a root word and meaning.

Example: "On a cloudy day the sun will suddenly **appear** and then **disappear**."

The root word: **appear**

Directions: Below use the following two related words in a sentence. You may create two sentences if needed.

1. paid / repaid

_____

_____

2. appear / disappear

_____

_____

April 27th--Writing Practice

Summarizing

Read the following passage and then fill out the graphic organizer using the information below.

- **Somebody- Who is the main character?**
- **Wanted- What did the main character want?**
- **But- What is the problem that the character has?**
- **So- How does the character solve the problem?**
- **Then- What is the Resolution?**

The Little Boy Who Cried Wolf

There was once a boy who lived in a village up in the mountains. His family owned many sheep. The boy had a job, and that job was to watch the sheep. If a wolf came near, he needed to call for help. His sheep stayed on a hill near the village where he watched them every day.

One day, he thought of a trick he could play on the people who lived in the village. He was bored, so he thought this would be a way to have fun. He ran toward the village crying out loudly for help.

He shouted, "Wolf! Wolf! Come and help! The wolves are at my lambs! The wolves are trying to eat them!"

There were many villagers in the town. They heard him crying and thought that they had to help. So, the kind villagers left their work and ran to the field to help him. They would try to help him chase away the wolves and protect his lambs. However, when the villagers got there, the boy laughed at them. There was no wolf there. He just wanted to watch them come running! He thought it was funny.

Then another day the boy tried the same trick. Once again, the villagers came running to help him out, and once again the boy laughed at them.

Then, one day, a wolf really did come and it started chasing the lambs. In great fright, the boy ran for help. "Wolf! Wolf!" he screamed. "There is a wolf! Help! Please! Help! Please!"

All the villagers heard him, but this time they did not come. They thought he was pulling another mean trick. They had learned their lesson and did not need to be laughed at again. So, no one paid attention to him and the shepherd-boy lost all his sheep –they all ran away.

When people in the village found out what had happened, they were sorry, but they told the boy it was his fault. That is the kind of thing that happens to people who lie. Even when they tell the truth, no one believes them. People are just so used to their lies.

Somebody	Wanted	But	So	Then

Use the information from the above graphic organizer to write a summary paragraph on your own paper about what you read above.

Elements of a Play

Read the sentences below. Choose which element of a play is underlined.

Character: a person or thing that does the action in the play
Stage Directions: tell the actor what to do and appear in parentheses ()
Narrator: provides the audience with information about what is happening in the play
Dialogue: lines the characters speak in the play

1. Wilbur [*shivering*]: Oooooh, Roy. This place gives me the creeps!

   a. character b. stage directions c. narrator d. dialogue

2. King: Your story is too short, I say! Away with him, guards! Away!

   a. character b. stage directions c. narrator d. dialogue

3. Sixteen years has passed. The princess grew up to become beautiful.

   a. character b. stage directions c. narrator d. dialogue

Definitions

Directions: Read the definition, and write down the spelling word that relates to the definition.

Answer Key	
pride	dipper
raid	praise

1. a cup with a long handle used to lift liquids.

_____

2. a sudden, surprise attack.

_____

3. a sense of personal value that comes from what one has or can do.

_____

4. words that show admiration or respect.

_____

April 28th--Writing Practice

Create Your Own Character

Create your own character. Write down your character's name, where they're from, what they look like, their skills and hobbies, the problems they face in their story, and their dreams for the future.

Read the drama below and answer the questions.

Caylee's Excuses
By Selena Cruz

Characters (2)
Caylee
Tina

Tina: Hey Caylee, want to go learn how to ride a bike without training wheels? It will be really fun!
Caylee: No no no! I'm scared!
Tina: Don't worry, I'll teach you! When I was little like you, I was scared too. Now I'm competing in the 5th grade bike rodeo next week. If I can do it, you can do it!
Caylee: But my friend Lauren said she fell.
Tina: I will do my best not to let you fall. I won't let go until you tell me to. Want to give it a try now?
Caylee: But I'm scared a dog will chase me!
Tina: I'll keep all the dogs away from you!
Caylee: But what if a cat chases me?
Tina: Then I'll run that cat out of here!
Caylee: What if a bird poops on my head?
Tina: (Frustrated) We'll attach an umbrella to your bike so you'll even be protected from the rain and sun! Come on Caylee! I think you're just making excuses now. I know you can do it! Let's give it a try!
Caylee: Ok! Let's do it!
Tina: Yes!

1. How did Caylee feel about riding her bike at the beginning of the skit?
2. What made Caylee change her mind about riding her bike?

Rewrite the fragments to create a complete sentence

The pencil was

_____

She wanted to go over

_____

Went to the camp

_____

Had to get

_____

I have never

_____

Over the fence.

_____

Didn't hear the

_____

Tips for Writing a Good Beginning Sentence

The first sentence of a story should make the reader want to continue reading.

1. Start with a **question**.
example: How did I ever get into this fix?

2. Start with a strong or surprising **statement**.
example: For the first time in her life, Mia was happy to be last.

3. Start with **action**.
example: Everyone was fast asleep until something big and heavy landed on our roof.

4. Start with **dialogue** between two characters.
example: "Don't go in there, Jamie!" Grandpa warned me, but I pretended not to hear him.

Create four stronger beginning sentences to replace the underlined sentence in the paragraph below.

I felt an earthquake last night. My bed was shaking so hard it woke me up. I heard glass and china rattling in the cupboards. My toy robot fell off the shelf. At first, I thought our new house must be haunted. Then, I remembered that I was living in California now. We didn't have earthquakes back in Texas, but we sure have them here!

1. _____
Use a **question.**

2. _____
Use a strong or surprising **statement.**

3. _____
Use **action.**

3. _____
Use **dialogue.**

Practice Page April 30th

Read the skit below.

Narrator: It was summertime and the fields were filled with insects. A grasshopper was hopping in the field and saw a line of ants passing by. The ants were carrying seeds. The grasshopper called...

Grasshopper: Come play with me, let's have some fun!

Narrator: But the busy ants kept moving as he called to them...

Ant Chorus: We can't stop now. Work must be done.

Narrator: One day the grasshopper asked an ant...

Grasshopper: Why are you working so hard? You could be playing in the warm summer sun.

Ant: I am helping store food for the winter. I think you should do the same.

Grasshopper: Why bother about winter now? There is plenty of food to eat.

Narrator: The grasshopper hopped away to play. The ant went back to work. When winter came, the ants were never hungry as they ate from the food they had stored for the winter. But the poor grasshopper could find nothing to eat.

Grasshopper: Now I see why the ants worked so hard. When you have a lot, you can save some for later.

1. What did the grasshopper want at the beginning of the story? How do you know that?

2. What changed about the grasshopper at the end of the story?

3. Why do you think he changed?

Stop the Sentence Thief!

Correct the following run-on sentences to help our super team stop the sentence thief!

Run-on-Roy woke with a bolt he heard a noise outside.

_____

_____

He saw a shadow in the corner of the yard he shouted, "Who's there?"

_____

_____

It was the sentence thief Run-on-Roy had to stop him.

_____

_____

The thief was startled he dropped all the sentences he'd collected he was never heard from again.

_____

_____

April 30th--Writing Practice

Supporting Details

What is the best pet to have? A dog, cat, turtle, fish?

Use the following table to write:

- Which pet is your favorite
- 3 details that tell why the pet you chose is the best
- Wrap it up with a conclusion sentence
- Use complete sentences

Topic Sentence	**I think the best pet is a _____.**
Detail #1	
Detail #2	
Detail #3	
Conclusion **RESTATE YOUR TOPIC SENTENCE**	

Use the information from the table above to write a complete paragraph about why the pet you chose is the best one:

_____

_____

_____

_____

_____

_____

_____

Practice Page for May 1st

Read the play below.

ANNOUNCER: And now, ladies and gentlemen, the hula hoop champion of the world!
CHAMPION: Thank you, Thank you. (Bows) I am truly an incredible athlete.
ANNOUNCER: Alright then, let's go ahead and show off your incredible skills! Start with one hula hoop around your waist.
CHAMPION: Just one? Alright, easy. (Starts hula hooping) Let's add two more. This is boring.
ANNOUNCER: Three hoops at one time! Incredible. Give our champion a hand, folks!
CHAMPION: Now, I will start with one on my ankles (put it on), and up to my knees. Next, it will move to my waist... up to my neck... and off! (onto your hand) (Bow)
ANNOUNCER: Fantastic! That's called 'Around the World'! Round of applause for our Champion!
CHAMPION: Oh that's nothing. One on my waist... one on my right leg... my left arm...my neck...and my right arm.
ANNOUNCER: Well, what about that! Now, watch as the champ puts all the hoops around his/her neck!
CHAMPION: And here we go! (Get all hoops to neck, make head swing faster and faster, and eyes get wide, whole-body starts spinning) "OHoooooooooo" (fall to ground)
ANNOUNCER: (Look down) Well, I guess our champ is now the ex hula hoop champion of the world. Sorry, Ladies and Gentlemen.
(Champion runs off stage, crying)

1. **What was the champion like at the beginning of the story? How do you know that?**

2. **What changed about the champion at the end of the story?**

3. **Why do you think the champion changed?**

Editing for Run-ons and Fragments

Look at the sentences below. Mark whether they are a run-on (R), fragment (F), or a complete sentence (C). Revise any run-on sentences or sentence fragments to create a complete sentence on the line provided.

1. Went to the movies. (R/F/C)

   _____

2. I went to the beach the clouds were out. (R/F/C)

   _____

3. We went for a jog. (R/F/C)

   _____

4. The boys wanted a chocolate cake the girls wanted a vanilla cake. (R/F/C)

   _____

5. Asked to go to the bathroom. (R/F/C).

   _____

Look at the following example of a student's narrative. Rewrite the conclusion using any of the strategies you learned about today.

When I became interested in a inventoin, a girl named Kaylee wanted to help. She wasn't the first thing that came to mind when I thought about help so I didn't except her at first. She bothers me so much in school!

I told my friends they could come help be on my project but most of them couldn't. When me and three friends that could come started building, we relized right away that we needed another person. But the only person who was free was Kaylee! When I told my friends that we needed her help they all groaned.

"She slapes me on the back wenever I'm getting a drink so water comes up my nose"! One said. "She drops my cake in the trash at lunch when I'm not looking"! Another said. "Her and her possy are so rude"! Said the last one. "But guys"! I said. "This is our last chance with this Okay"? "Fine". They said. "But only if you tell her not to be rude"."Okay"! I promisted.

I rode my bike to her house and told her she could particapaite. Our invention was a go-cart and she helped a lot to make the tiers! We rode the amasing vehicle around and around! She thanked us for letting her help and said she was sorry for all the mean things she did to me and my friends. I forgived her asked if she wanted lunch at my house. "Sure". She said. and we became good friends!

Your conclusion:

_____

_____

_____

_____

_____

_____

_____

_____

_____

ISD Grade Level: 4th Grade
ISD Content: Social Studies
Week: April 27- May 1

Work Page

Monday, April 27th-- Economics

Match the word problem to the appropriate profit.

Profit: The money that is left over after expenses are subtracted from earnings.

Example:
You want to make cookies to sell. You have to buy all the ingredients to make the cookies. Let's pretend that cost $7.00. That would be your ***expense***.

When you made and sold all your cookies, you made $13.00. That would be your ***earnings***. Take your earnings and subtract your expense. That would be your ***profit.***

$13.00 (earnings) - $7.00 (expense) = $6.00 (profit).

1. Jacob bought a toy car for $6.75. He fixed it up and sold the toy car for $15.00. What was his profit? ____

2. Zack's parents gave him $6.00 to mow the lawn. He spent $2.50 on gas. The rest of the money was his profit. ____

3. Ely set up a lemonade stand. She spent $4.00 on supplies. At the end of the day, she made $12.00. What was her profit? ____

Profit
a. $6.00
b. $8.00
c. $3.50
d. $8.25

Tuesday, April 28th-- Economics

Match the word problem to the appropriate profit.

Profit: The money that is left over after expenses are subtracted from earnings.

Example:
You want to make cookies to sell. You have to buy all the ingredients to make the cookies. Let's pretend that cost $7.00. That would be your ***expense***.

When you made and sold all your cookies, you made $13.00. That would be your ***earnings***. Take your earnings and subtract your expense. That would be your ***profit.***

$13.00 (earnings) - $7.00 (expense) = $6.00 (profit).

1. Logan bought a used skateboard for $7.00. He painted the skateboard and fixed the wheels. The paint cost $2.00 and the new wheels cost $4.00. He sold the skateboard for $10.00. What was his profit or loss? ____

2. Karolina sold a painting she made for $15.00. She spent $2.00 on brushes, $5.00 on paint, and $3.00 for the canvas. What was the profit or loss? ____

Profit
a. $3.00
b. - $3.00
c. $5.00
d. - $5.00

Wednesday, April 29th-- Economics

What is Profit and Loss?

When you buy a pair of skates for $10 and sell them for $15, your ***profit*** is $5. But suppose you spend $7 on classified ads before you sell the skates? Then you have a ***loss*** of $2! Complete the table below to find the profit and loss of a business.

Quick Reference:

Total sales: the sum of the amounts you receive from customers.

Cost of goods sold: the amount you paid for the things you sell.

Profit: Money that you make more than it cost you to buy or make.

Loss: Money that you spent more than you have earned.

You bought a t shirt for $3.99. The iron on letters you put on it were $2.50. How much should you sell it for if you want to make a profit of $4.00? Cost of plain T-shirt: _____ Cost of letters: + _____ Total Cost = _____ Profit + _____ Selling price = _____	**Nobody wanted to buy your t-shirt for your selling price. So, you sold it for $5.00. Did you make a profit or have a loss?** Selling price: _____ Total cost of T-Shirt - _____ Loss =_____

Thursday, April 30th-- Economics

Renewable resources are natural resources that will not run out. Nonrenewable resources are natural resources that are used up quicker than they are made. Read the list of resources below. If they are Renewable write an "R" next to it. If they are Nonrenewable write a "NR" next to it.

____Oil
____Water
____Solar Energy
____Coal
____Wood
____Natural Gas
____Air
____Nuclear

Friday, May 1st-- Economics

Natural resources are resources that come from nature. These are things that are not man made, and are found naturally.

Below, please circle all of the **natural resources**.

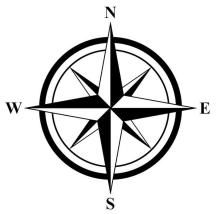
Water	Ruler	Oil
Television	Phone	Plastic
Trees	Sun	Paper
Car	Glass	Plants

Midwest--States & Capitals

Use this map to help you label the Midwest region states and capitals.

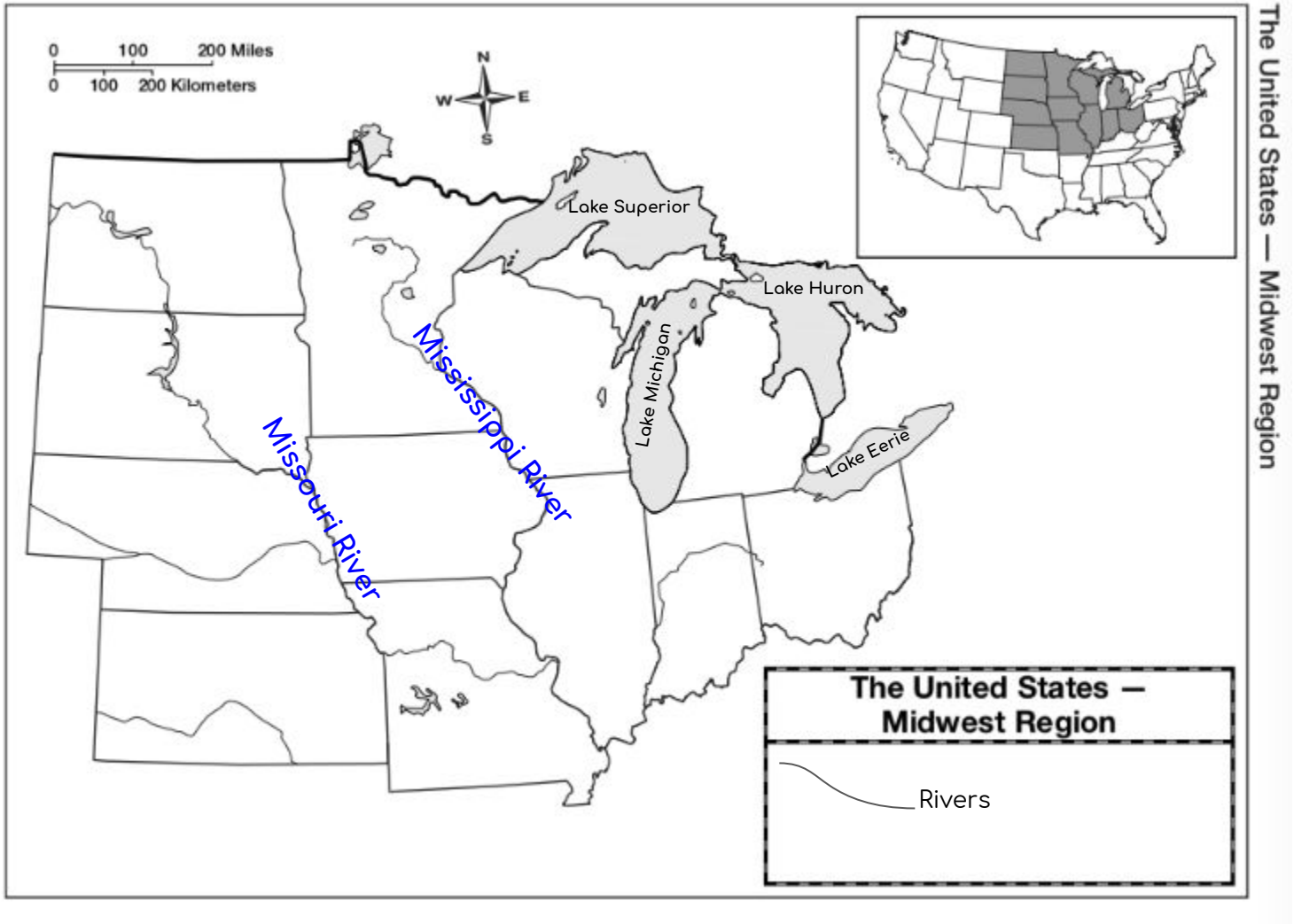
Midwest State Abbreviations:

Ohio- OH
Michigan- MI
Indiana- IN
Wisconsin- WI
Illinois- IL
Minnesota- MN
Iowa- IA
Missouri- MO
North Dakota- ND
South Dakota- SD
Nebraska- NE
Kansas- KS



Midwest--States & Capitals

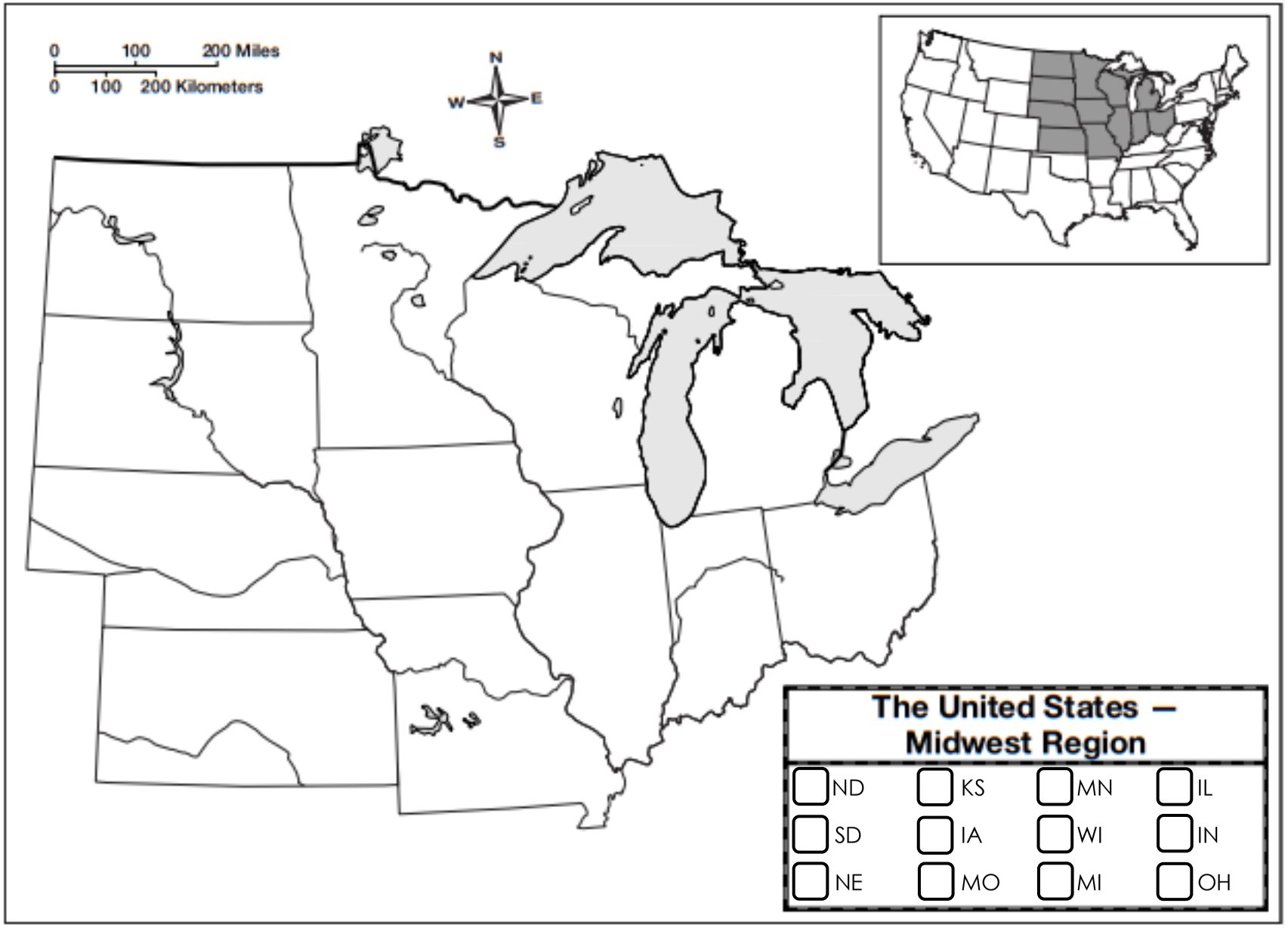
Use this map to help you label the Midwest rivers.



Midwest State Abbreviations:

Ohio- OH
Michigan- MI
Indiana- IN
Wisconsin- WI
Illinois- IL
Minnesota- MN
Iowa- IA
Missouri- MO
North Dakota- ND
South Dakota- SD
Nebraska- NE
Kansas- KS

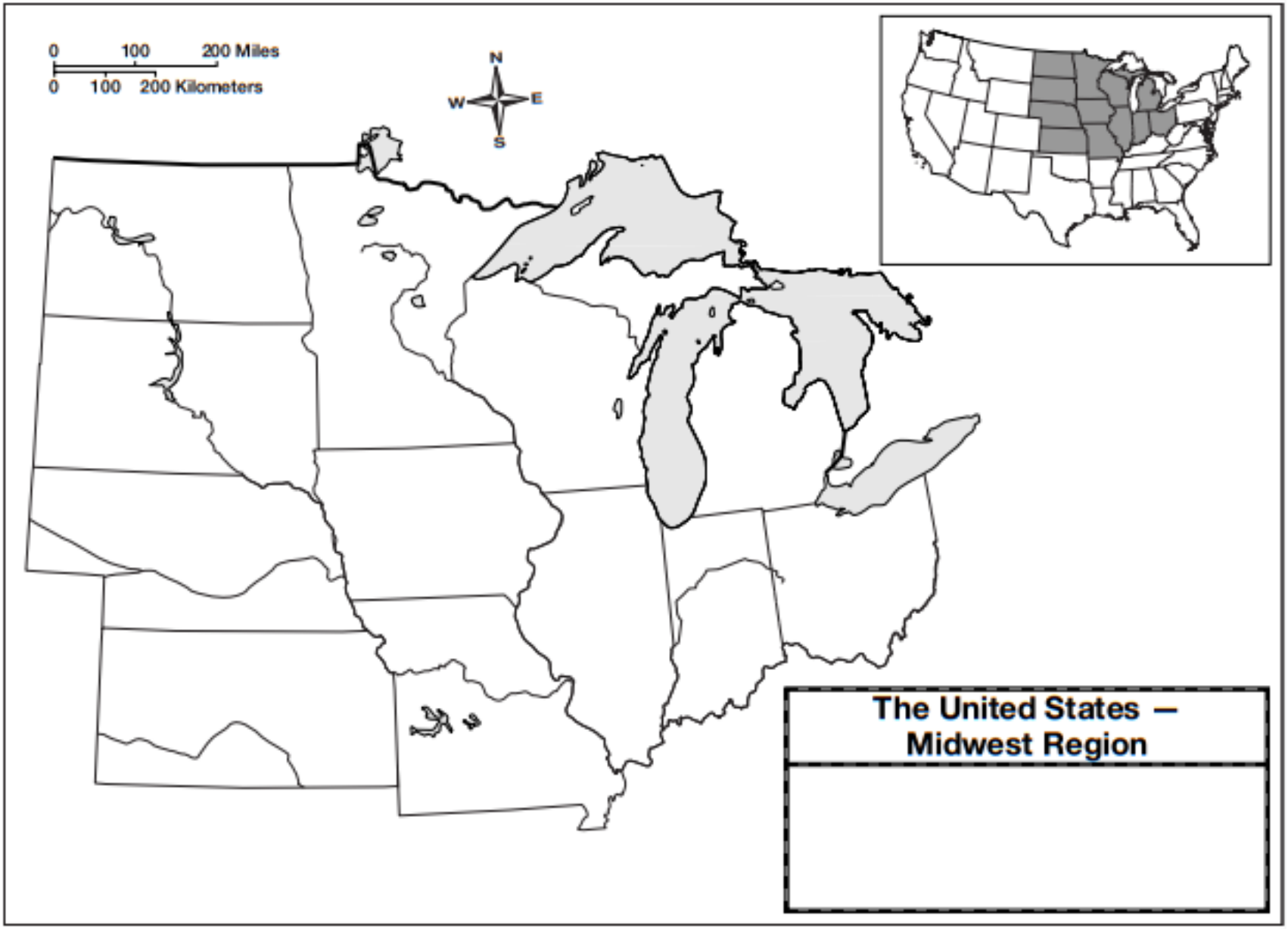
Midwest States and Capitals



Directions:

1. Carefully look over the map of the Midwest region of the United States. Label all 12 states in this region.
2. Use 12 different colors/shades to create a key. Represent each state with a different color. Color in each state.
3. Once you have learned the state capitals, add them to your map using a star and label for each.

Midwest Rivers



Directions:

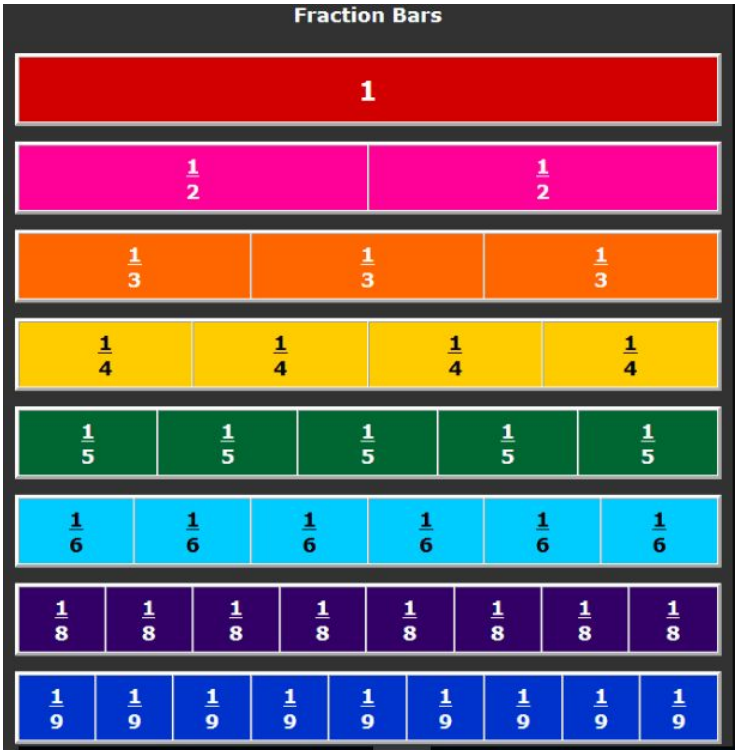
1. Look over the map of the Midwest region of the U.S. Label all 12 states in this region with abbreviations.
2. Create a key to show what symbols/colors you will use to represent rivers.
3. Mark and label the Mississippi River and Missouri River. *There are no major mountain ranges in the region.*

ISD Grade Level: 4th Grade
ISD Content: Math
Week: April 27- May 1

Inspiring Greatness

INDEPENDENCE SCHOOL DISTRICT

Choice Board
4th Grade /Math
Comparing Fractions



Use the fraction bars above to compare fractions.

What is a fraction greater than ½?	What is a fraction equal to 3/6?	What is a fraction less than ¾?
What is a fraction greater than ⅜?	What is a fraction equal to ¾?	What is a fraction less than ½?
What is a fraction greater than ⅛?	What is a fraction equal to ⅔?	What is a fraction less than ⅓?

4th Quarter Math Practice

Acute Triangles- all 3 angles are acute angles (less than 90 degrees)

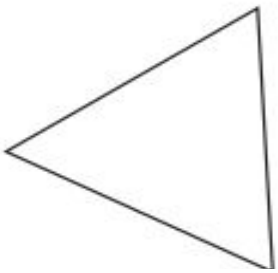
Right Triangles- one angle is a right angle

(*Remember, a 90 degree angle is when two angles meet perpendicularly)

Obtuse Triangles- one angle is an obtuse angle (greater than 90 degrees)

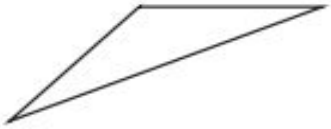
Identify each triangle based on angles. (Acute, Obtuse or Right)

1)



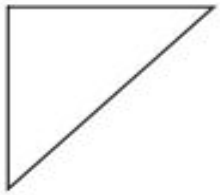
Acute Triangle

2)



Obtuse Triangle

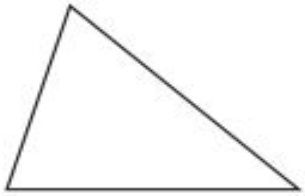
3)



Right Triangle

4)

5)



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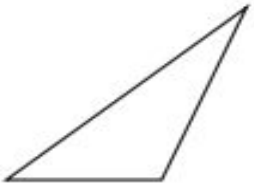

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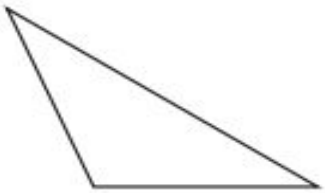

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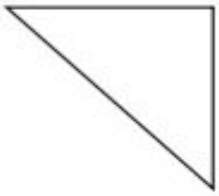

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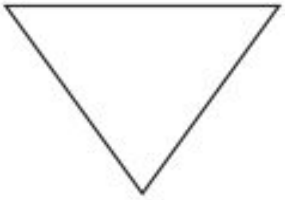
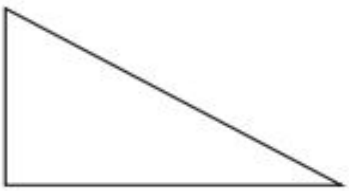


10)

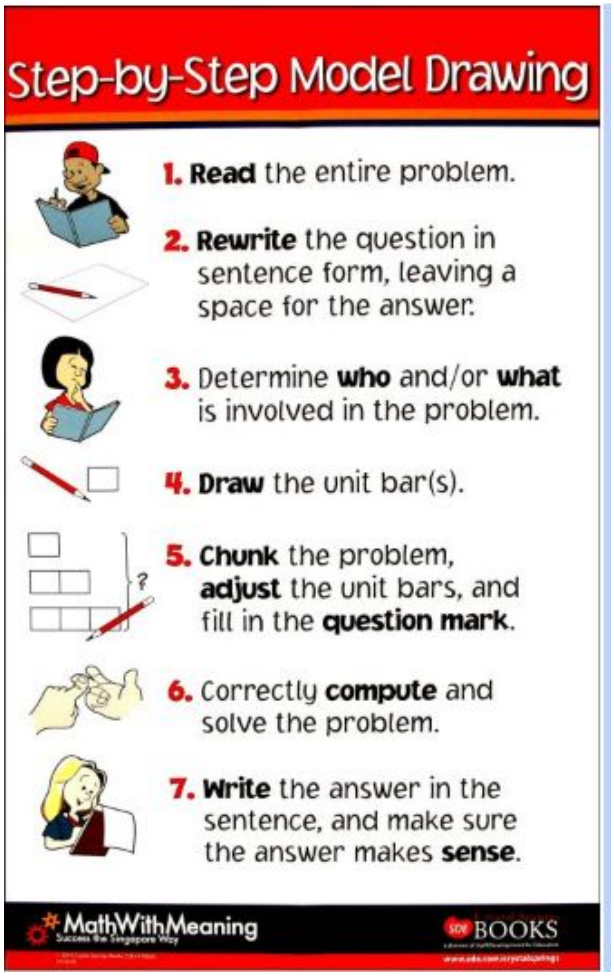


11)

12)

Number Sense & Word Problems

Use any multiplication strategy to solve the multiplication word problems below. Also, use the six steps for solving word problems to help you solve.



1. Sadie drew 235 circles on her art project. Harper drew 3 times as many circles on her art project. How many circles did Harper draw?

Harper drew _____ circles.

2. Sloan bought 166 chocolates to pass out to Trick or Treaters. Jill bought 4 times as many chocolates. How many chocolates did Jill buy?

Jill bought _____ chocolates.

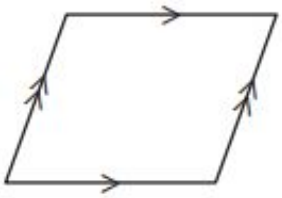
4th Quarter Math Practice

Identify each quadrilateral by writing the name of the polygon on the line. Remember, pay attention to the number of sides and characteristics of the sides.

*Challenge--label parallel sides, perpendicular lines, and any angles you know for fun!

Quadrilaterals

1)



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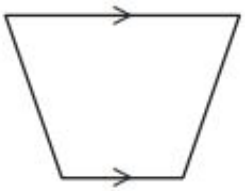

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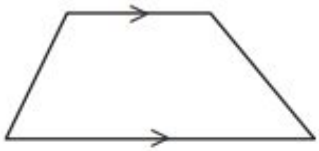

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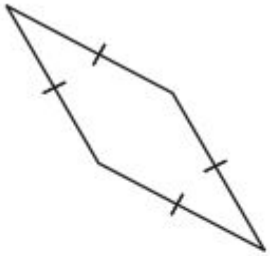

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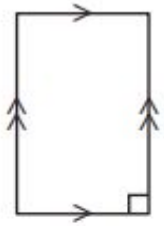

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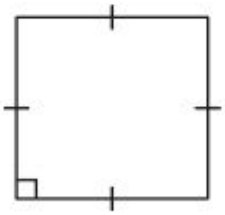

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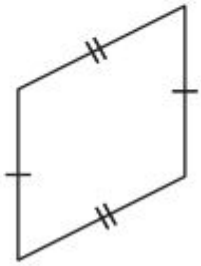

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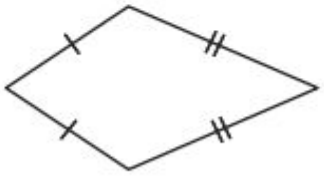

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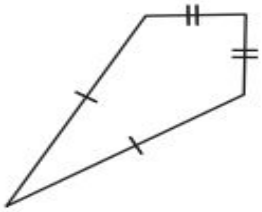

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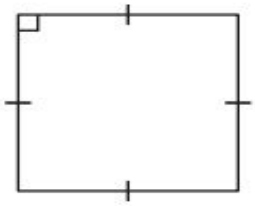

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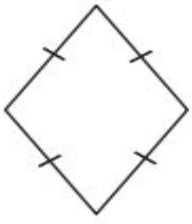
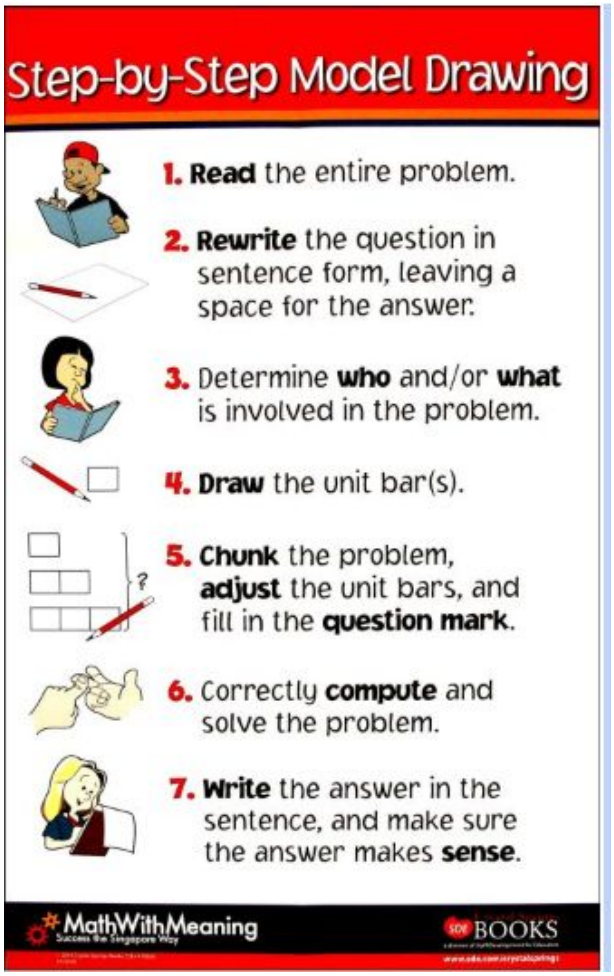


Number Sense & Word Problems

Use any multiplication strategy to solve the multiplication word problems below. Also, use the six steps for solving word problems to help you solve.



1. Faith baked 587 cookies over the course of a year. May baked 3 times as many cookies. How many cookies did May bake?

May baked_____cookies.

2. Dean planted 238 violets over the course of a few years. Ian planted 4 times as many violets. How many violets did Ian plant?

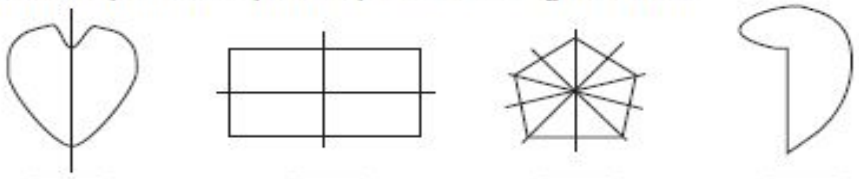
Ian planted _____ violets.

4th Quarter Math Practice

Symmetry- when a object, in this case a 2D shape, looks exactly the same on both sides. Follow the directions below to practice symmetry.

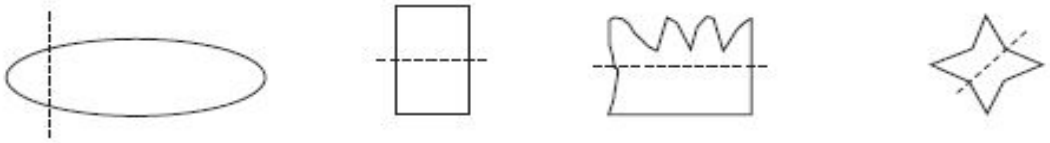
Symmetry

How many lines of symmetry does each figure have?



1 2 5 0

Is the dashed line a line symmetry? Write yes or no.



Draw the lines of symmetry. Write how many there are.

Draw the lines of symmetry. Write how many there are.

Draw the lines of symmetry. Write how many there are.

Number Sense & Word Problems

Use any multiplication strategy to solve the multiplication word problems below. Also, use the six steps for solving word problems to help you solve.

Charlotte has 8 boxes of bottle caps. Each box holds 329 bottle caps. How many bottle caps does Charlotte have?

Answer:

HyVee had a shipment of oranges. On each crate there were 507 oranges. There were 6 crates. How many oranges did HyVee receive in one shipment?

Answer:

The Independence School District is making packets for each grade level. There are 7 pickup locations and each location receives 1,052 packets total. How many students will be able to get a packet?

Answer:

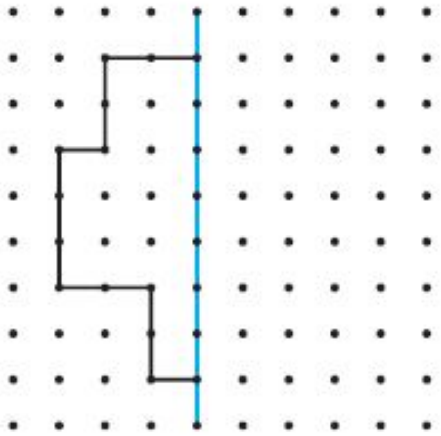
4th Quarter Math Practice

Symmetry- when a object, in this case a 2D shape, looks exactly the same on both sides. Follow the directions below to practice symmetry.

Symmetry Sketching

Draw the missing half of each shape. Each shape should be reflected on its line of symmetry.

1.



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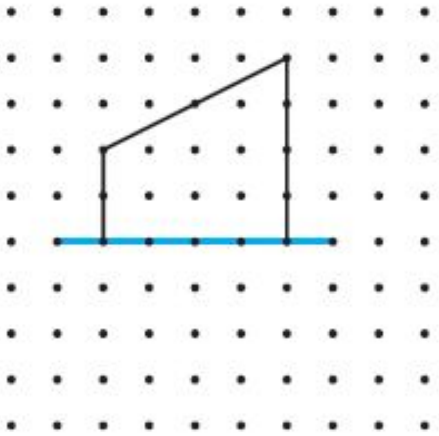

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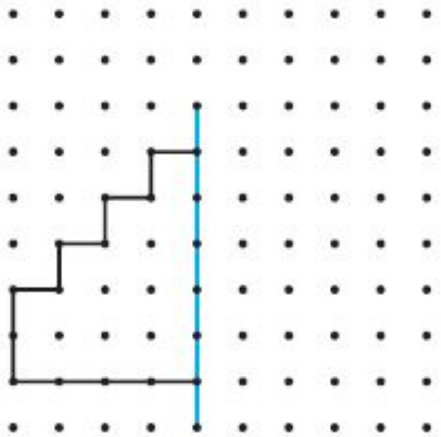

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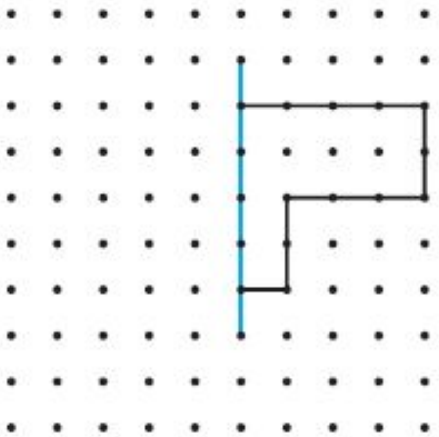

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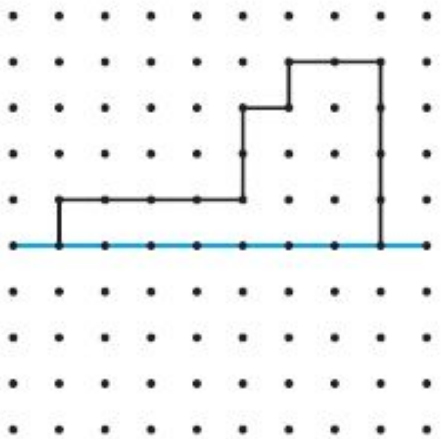

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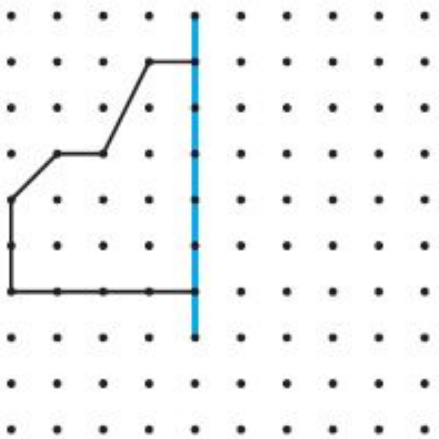
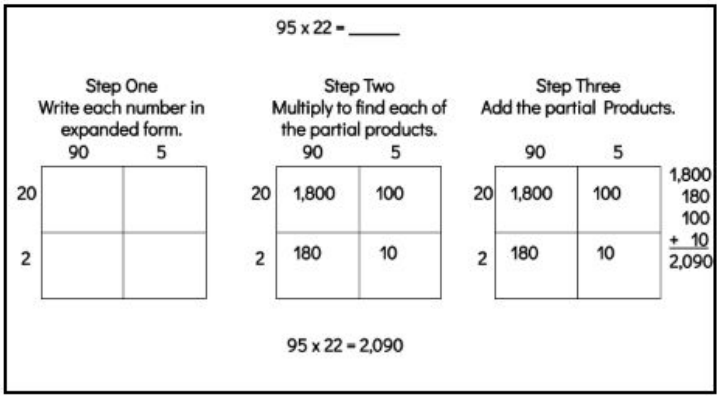
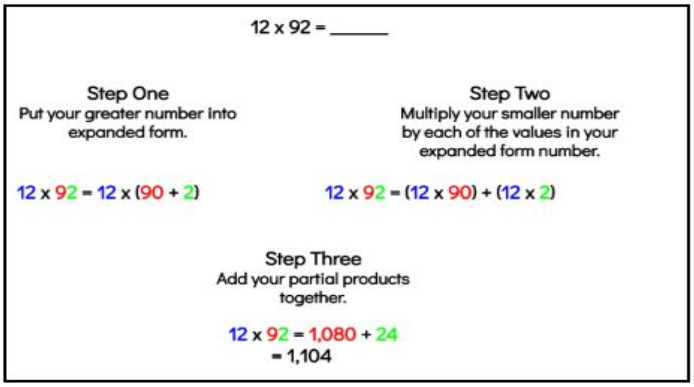
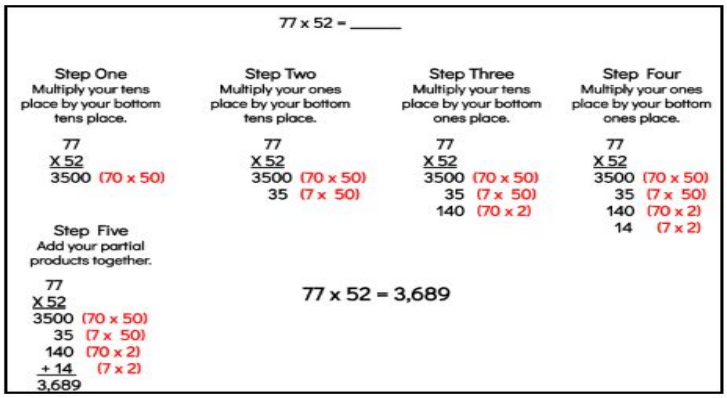


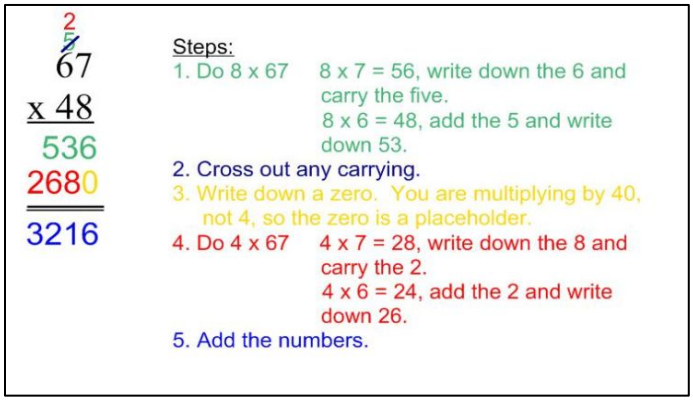
Number Sense & Word Problems

Use any multiplication strategy to solve the multiplication word problems below. Also, use the six steps for solving word problems to help you solve.









There are 22 fish tanks in a pet store. Each tank holds 15 fish. How many fish are in the pet store?

There are ____ fish in the pet store.

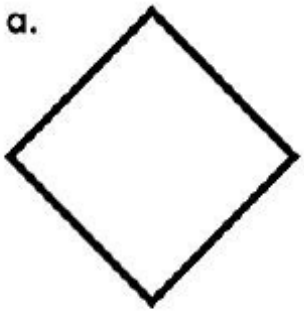
4th Quarter Math Practice

Symmetry- when a object, in this case a 2D shape, looks exactly the same on both sides. Follow the directions below to practice symmetry.

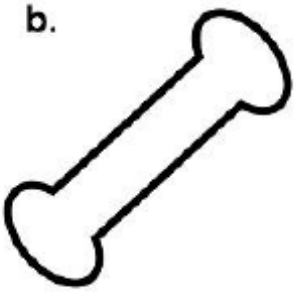
Symmetry

Draw lines of symmetry on the shapes below. Some shapes may have more than one line of symmetry.

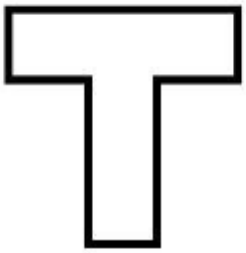
a.



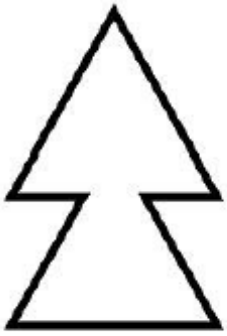
b.



c.

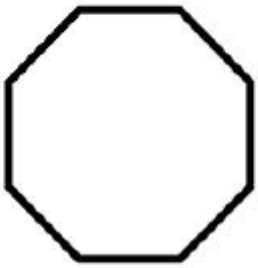


d.

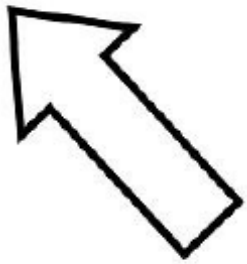


e.

f.



g.



h.

i.

Number Sense & Word Problems

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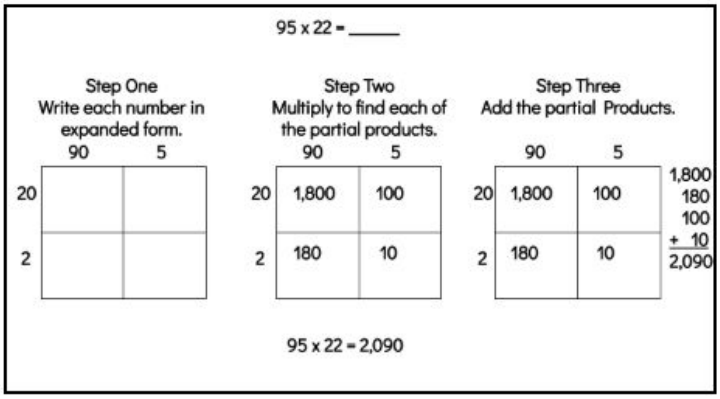
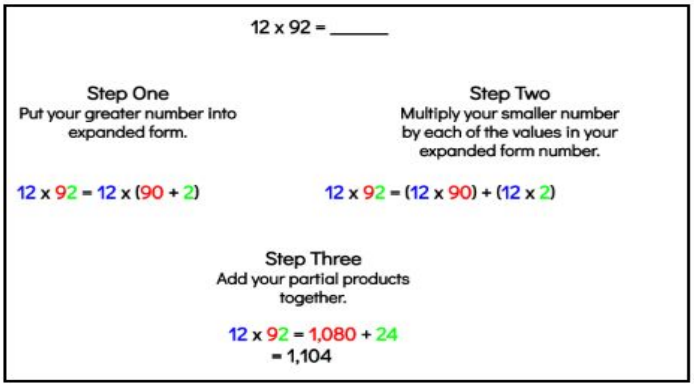
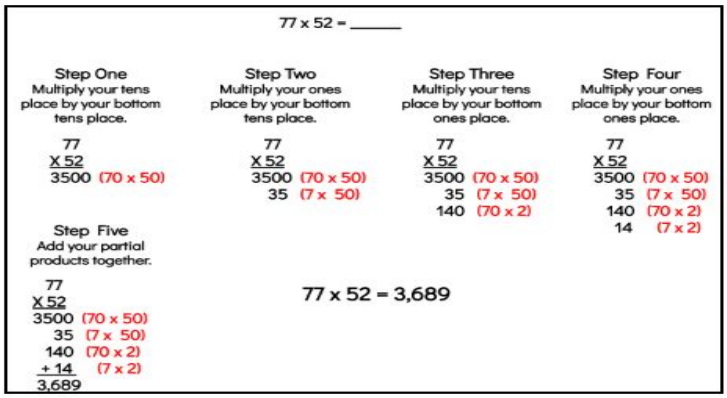
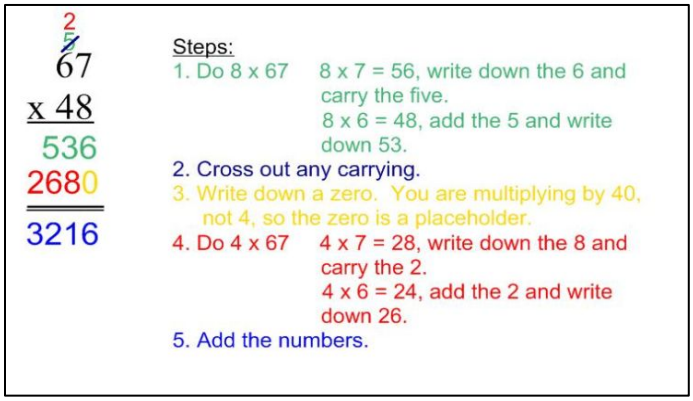








Millie has 13 bags of dog bones. Each bag contains 24 bones. How many bones does Millie have?

Millie has _____ bones.

Work Page

Work Page

ISD Grade Level: 4th Grade
ISD Content: Science
Week: April 27- May 1

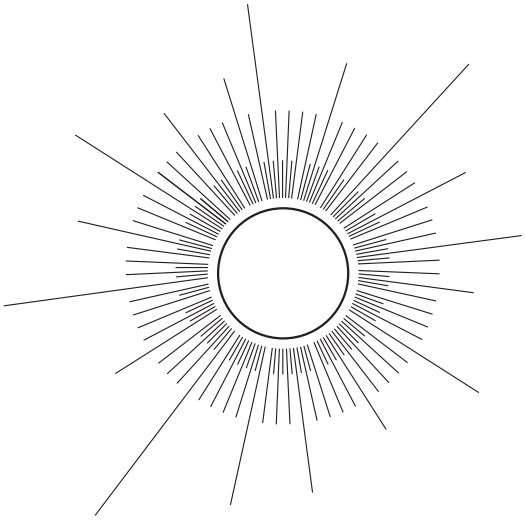
Work Page

 Name _____ Date _____

Transfer of Energy by Light

PAGE KEELEY SCIENCE PROBES

Energy from Sunlight



Two friends were arguing about energy from the Sun. They each had a different idea about using the Sun's energy. Here is what they said:

Violet: *The Sun's energy is only useful when the Sun is shining. When there is no sunlight, you can't use the Sun's energy.*

Liam: *The Sun's energy can be captured and used later. The Sun does not have to be shining in order to use the Sun's energy.*

Who do you agree with the most? _____

Explain why you agree.

_____

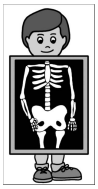
_____

_____

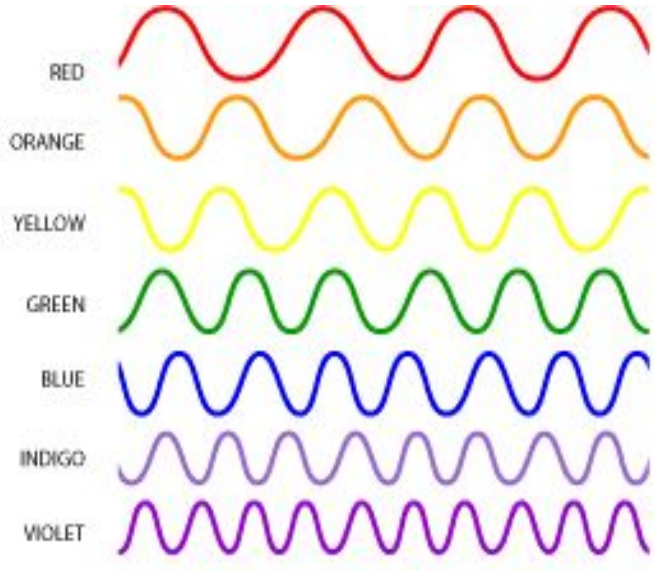
_____

Electromagnetic Spectrum & Waves

Light is a form of electromagnetic radiation. It travels in different waves.

Radio Waves	Microwaves	Infrared Waves	Visible Light	Ultraviolet Waves (UV)	X-Rays	Gamma Rays
- Longest and highest waves -Lowest frequencies -Weakest waves -We use these waves for music and seeing shows on our TVs	- Can heat our food (yum!) -Used by police to predict the speed of our cars - Can locate airplanes in the sky	-Make heat -can be used by security cameras, hunting equipment, military equipment	-Small part of the light spectrum -The light humans see -these waves are seen as colors (ROYGBIV)	-these waves come from the sun and cause sunburns	- Doctors use these types of waves to see our bones	- shortest waves - highest frequency - strongest and most powerful (this is what superheros tend to use!)
						

Visible Light: This is the light we see with our eyes. We see it in colors. The color we see is ***always*** in order of the rainbow colors. Red, orange, yellow, green, blue, indigo, and violet.



Red has the longest wavelength and violet light has the shortest wavelength.

The shorter the wavelength, the more scattered the light particles are.

We see visible light from the reflection of light on an object. The color that appears is the color that is being reflected from the light source, the other color wavelengths are absorbed.

Why do you think stoplights are red, yellow, green?

Find a few objects in your home. Describe WHY you see the color you do.

Name Date

LIGHT AND OBJECTS

Did you know that light interacts with the world in three different ways? The way light passes through objects can be transparent, translucent, or opaque.

Transparent means that light can pass through an object uninterrupted, as if the object is not even there.

Translucent means that light can sort of pass through. The light is somewhat clear but hazy when it hits the object. **Semi-transparent** is another word for **translucent**.

Opaque means that when the light hits an object, it will not pass through it. Another word for **opaque** is **obscured**.

Use a flashlight and try to shine a light through the objects listed below.
Circle if the light is transparent, translucent, or opaque.
Describe what happens when you try to shine the light through the object.

1) Cardboard : Transparent / Translucent / Opaque

Describe:

2) Plastic Wrap : Transparent / Translucent / Opaque

Describe:

3) Tissue Paper : Transparent / Translucent / Opaque

Describe:

4) Drinking Glass : Transparent / Translucent / Opaque

Describe:

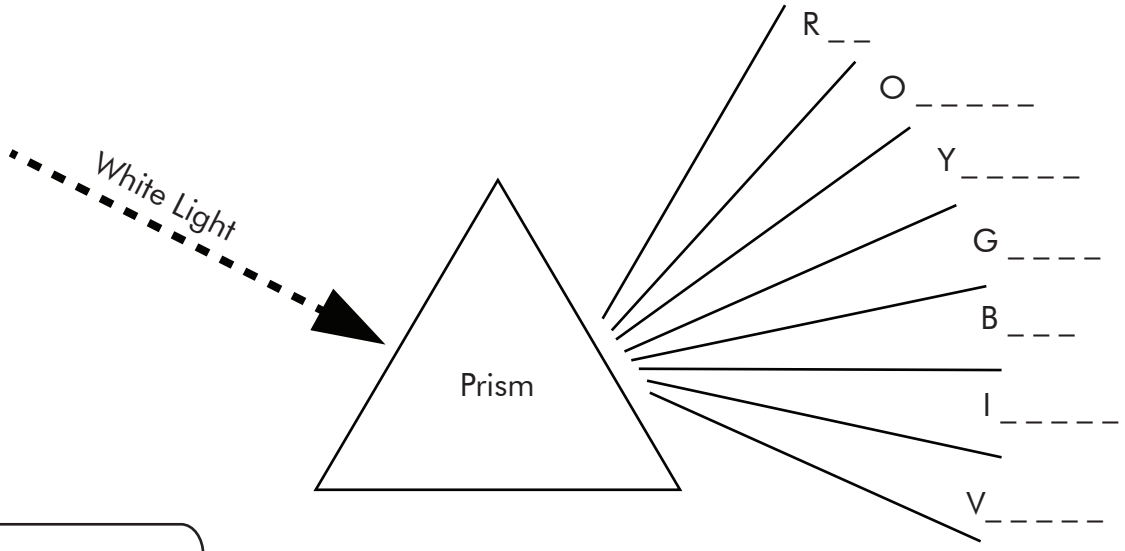
5) Your Hand : Transparent / Translucent / Opaque

Describe:

The Prism

While light appears white, it is made up of the colors of the rainbow. The colors can be separated by shining light through a **prism**, or a triangular glass object. This separation is called **dispersion**. This can be observed in a rainbow, when sunlight is refracted by droplets of water.

Use crayons or colored pencils to fill in the color spectrum below.



TRY THIS!

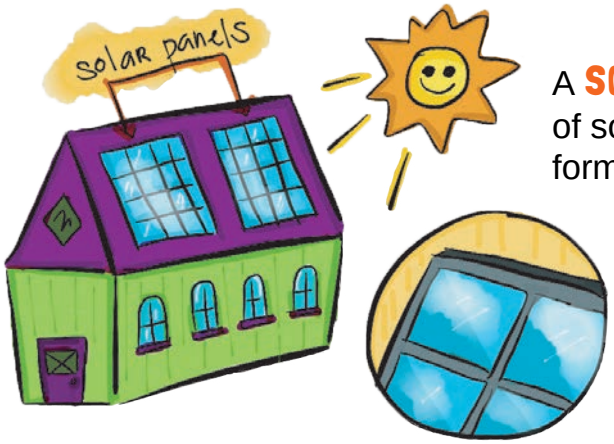
Make your own prism by shining light down through a glass of water onto white papers below, or shine a light on the back of a CD.

Be patient and experiment until you get the angle just right. Draw what you observe below.

WHAT IS SOLAR ENERGY?

Solar energy comes from the sun. The sun is an important resource, as it helps sustain life. Without the sun, our planet would have no life. Through the use of technology, we are able to harness the energy from the sun to convert it to electricity.

SOLAR CELLS are tools that change light energy from the sun and other light sources into electricity. Many calculators use solar cells to power them.



A **SOLAR PANEL** is a group of solar cells connected to form a large, flat surface.

THINK AND DRAW

What do you think a car powered by the sun would look like? Draw a picture.

Work Page

Work Page

Work Page

Work Page

Work Page