7TH GRADE SCIENCE

INTRODUCTORY PACKET: WHAT IS A SCIENTIST?

NAME: _____

My name is Aliscia Payne. I'm so excited having you in my 7th grade Science classroom at Westviews Middle School! I wanted to share a little bit of information about me. I've been an educator for 13 years, however this is my second year teaching in my own classroom. I am mother of 4 beautiful, smart, talented young ladies. Their ages are 20, 10, 9, and 5. We have a pet rabbit named Flower. I'm a winter 'baby' who enjoys working with gadgets, drawing cartoon pictures, computer technology, making new healthy recipes, roller skating, and power walking. My girls and I usually spend our summers at the pool, however because of Covid our pool remained closed this year.

I'm looking forward to knowing each and everyone of you. Even though we're not in a typical classroom I'm certain you'll enjoy your Virtual Environment.

Sincerely, Ms. Payne

I eagerly await meeting each and everyone of my students and their families/caretakers. I'd first like to share my personal ideas and beliefs about teaching and learning inside of my classroom. My goal is to include valuable instructional time with engaged learning. I love to incorporate student/peer discussions with curriculum standards, this may happen spontaneous and simultaneous during our learning process. I'm a big stickler when it comes to collaborative teamwork. Behavior management is key during this type of instructional design. Students and I will move constantly through material while communicating with one another. Students and families/caretakers need to know my class is conducted with positive language, respect of all, voice control, 'I can' statements and strategic listening techniques.

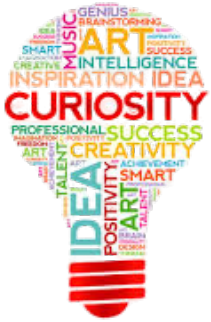
SCIENTISTS AT WESTVIEW ARE...

Which of the five C's do you think you are best at right now? Write the word here:

AT WESTVIEW, OUR SCIENTISTS STRIVE TO LIVE INTO THE FIVE C'S.

5 C's

CURIOUS



STUDENTS WHO ARE CURIOUS ASK QUESTIONS AND SEEK ANSWERS. THEY ARE OPEN MINDED. THEY EXPERIMENT.

CREATIVE

STUDENTS WHO ARE CREATIVE THINK IN NEW BOXES. THEY THINK ABOUT THINGS FROM ANOTHER POINT OF VIEW. THEY ARE WILLING TO FAIL.

COLLABORATIVE

STUDENTS WHO ARE COLLABORATIVE WORK WITH OTHER SCIENTISTS. THEY ASK QUESTIONS WHEN THEY HAVE THEM. THEY KNOW THE IMPORTANCE OF A TEAM.

CRITICAL THINKERS

STUDENTS WHO ARE CRITICAL THINKERS MAKE INFERENCES. THEY PROBLEM SOLVE. THEY ASK WHY AND ANALYZE THE DATA. THEY DO NOT ACCEPT THINGS THAT CANNOT BE PROVEN.

CONFIDENT

STUDENTS WHO ARE CONFIDENT BELIEVE IN THEMSELVES. THEY KNOW THAT THEY ARE CAPABLE OF COMPLETING HIGH QUALITY SCIENCE, MATH, ENGINEERING, AND TECHNOLOGICAL WORK!

DAY ONE: WESTVIEW SCIENTISTS ARE CURIOUS

DO NOW: WHAT QUESTIONS DO YOU HAVE FOR YOUR TEACHER ABOUT THIS YEAR? WHAT ARE YOU MOST EXCITED ABOUT? WHAT ARE YOU MOST NERVOUS ABOUT?

VOCABULARY

CURIOSITY: A QUALITY THAT SOMEONE HAS THAT INVOLVES EXPLORING, INVESTIGATING, AND LEARNING

WHAT IS SOMETHING YOU ARE SUPER CURIOUS ABOUT? WHY ARE YOU CURIOUS ABOUT IT?

_____

_____

ESSENTIAL QUESTION: WHY DO YOU BELIEVE THAT IT IS IMPORTANT FOR SCIENTISTS TO BE CURIOUS?

_____

_____

ACTIVITY #1: INQUIRY CUBES

ACTIVITY #2: CURIOSITY SCENARIOS

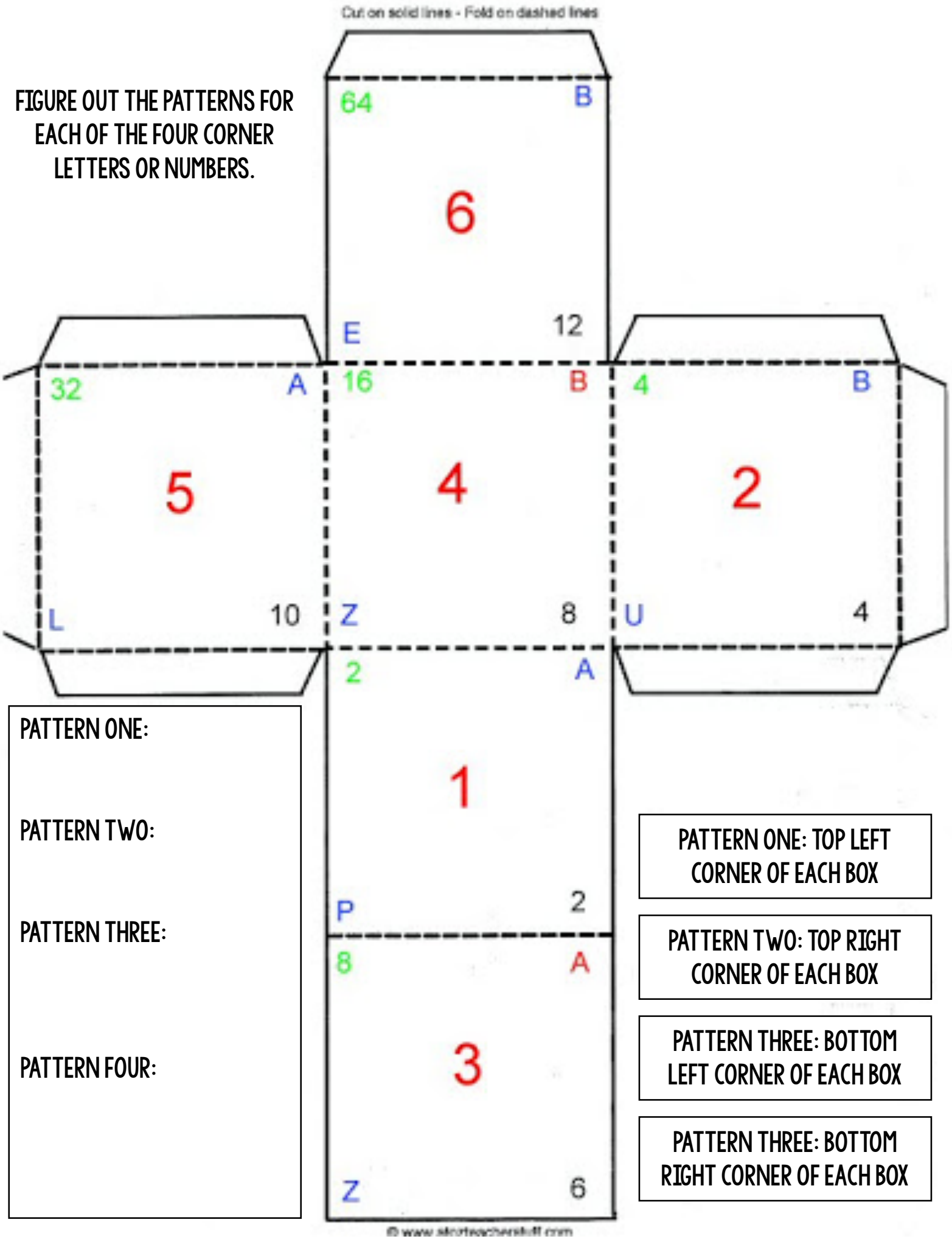
ACTIVITY #3: GETTING TO KNOW YOU!

EXIT QUESTION: DO YOU BELIEVE WE WOULD EVER MAKE NEW TECHNOLOGY OR ADVANCEMENTS WITHOUT CURIOSITY? WHY OR WHY NOT?

_____

_____

FIGURE OUT THE PATTERNS FOR EACH OF THE FOUR CORNER LETTERS OR NUMBERS.



PATTERN ONE:

PATTERN TWO:

PATTERN THREE:

PATTERN FOUR:

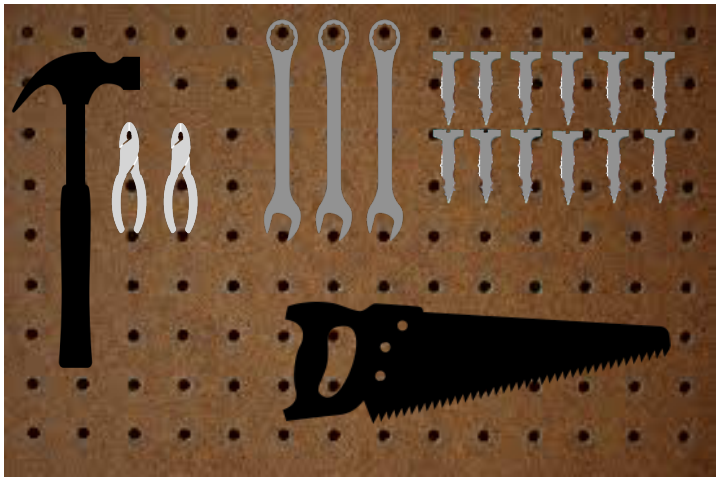
PATTERN ONE: TOP LEFT CORNER OF EACH BOX

PATTERN TWO: TOP RIGHT CORNER OF EACH BOX

PATTERN THREE: BOTTOM LEFT CORNER OF EACH BOX

PATTERN THREE: BOTTOM RIGHT CORNER OF EACH BOX

TOOLS TO WORK WITH



SCENARIO #1: THE PLAYGROUND AT A LOCAL PARK IS REALLY WOBBLY AND UNSAFE FOR KIDS TO PLAY ON.

QUESTION #1: WHAT INFORMATION DO YOU NEED TO KNOW IN ORDER TO FIX THIS PROBLEM?

QUESTION #2: WHAT QUESTIONS WOULD YOU HAVE FOR SOMEONE WHO TOLD YOU THIS WAS A PROBLEM?

QUESTION #3: WHAT TOOLS WOULD YOU USE TO START FIXING THIS PROBLEM? WHY?

TOOLS TO WORK WITH

SCENARIO #2: THE KITCHEN AT A RESTAURANT IS OUT OF FOOD BUT STILL HAS CUSTOMERS. THEY CANNOT CLOSE THE DOORS OR ELSE THEY WILL HAVE TO SHUT DOWN FOREVER.

QUESTION #1: WHAT INFORMATION DO YOU NEED TO KNOW IN ORDER TO FIX THIS PROBLEM?

QUESTION #2: WHAT QUESTIONS WOULD YOU HAVE FOR SOMEONE WHO TOLD YOU THIS WAS A PROBLEM?

QUESTION #3: WHAT TOOLS WOULD YOU USE TO START FIXING THIS PROBLEM? WHY?

QUESTION #4: WHAT OTHER TOOLS OR ITEMS WOULD YOU NEED?

GETTING TO KNOW YOU CARD

Directions: answer the questions in the boxes below.

What is your favorite food or beverage?	**What is your favorite restaurant or place to eat?**	**If you were a crayon, what color would you be?**	**If you could be anywhere right now, where would you like to be?**
What is your dream job?	**Do you have any siblings?**	**What is the best book you've ever read?**	**What superpower would you want to have?**
What is something that is very important to you?	**Describe yourself using only three words**	**What is your favorite movie?**	**If you had $1000, what is the first thing you would buy?**
What is your favorite thing to do in your free time?	**What is your favorite subject?**	**If you could have dinner with one person (living or not), who would it be?**	**What is your favorite song?**

DAY TWO: WESTVIEW SCIENTISTS ARE CREATIVE

DO NOW: IF WE HAD TO MOVE TO A NEW PLANET WITH NOTHING ON IT (NO LIFE, NO WATER, NO STORES), WHAT ARE FIVE THINGS YOU WOULD TAKE WITH YOU? WHY?

VOCABULARY

CREATIVITY: USING IDEAS TO MAKE SOMETHING NEW, OR MAKING SOMETHING OUT OF NOTHING

WHEN IS A TIME YOU WERE CREATIVE?

_____

_____

FINISH THE DRAWING

DIRECTIONS: YOU CAN MAKE THESE TWO PARTIAL SHAPES INTO ANYTHING THAT YOU WANT, BUT YOU HAVE TO ADD A **MINIMUM** OF 6 NEW LINES OR SHAPES TO COMPLETE THE DRAWING.

ACTIVITY #1: CREATIVITY PROMPT

ACTIVITY #2: WEARING MANY HATS

ACTIVITY #3: GETTING TO KNOW YOU!

ESSENTIAL QUESTION: WHY DO YOU BELIEVE THAT IT IS IMPORTANT FOR SCIENTISTS TO BE CREATIVE?

_____

_____

PICK ONE OF THESE PROMPTS:

1. Describe a problem in your life and an invention that would solve that problem.
2. Describe the ideal laboratory for a scientist.

WRITE ABOUT IT:

Directions:

1. Your writing has to be FULL sentences with a capital letter to start and a punctuation mark at the end.
2. You must write at least five sentences.

_____

_____

_____

_____

_____

_____

_____

DRAW A PICTURE OR A DIAGRAM:

Directions:

1. Your drawing should be based on the sentences you wrote.
2. Your drawing does **NOT** have to be perfect! Just do your best.

WEARING MANY HATS

People think differently. Some people have a brain that always thinks in ways that are creative, some people think about the worst case scenario for every situation. Some people wear a different hat depending on the situation.

People who wear blue hats are organized. They want to know the answers. They try to figure out what thinking is needed to find solutions.

Who do you know that is like this?

People who wear orange hats are data driven. They want to know what they do not know. They ask: What are the facts? What do I need to know? What information am I missing?

Who do you know that is like this?

People who wear green hats are creative. They see the possibility in everything. They are open minded and try to find new solutions to old problems. They ask: What is possible?

Who do you know that is like this?

People who wear purple hats are worriers. They are constantly worried about the risks and looking at the other side.

Who do you know that is like this?

People who wear yellow hats are extremely positive. They see good in everything. They ask: What are the positives in this? What is the bright side?

Who do you know that is like this?

People who wear red hats use their emotions to help them decide what to do. They “go with their gut” when problem solving.

Who do you know that is like this?

A MANY HAT SCENARIO: Restaurants throw away a lot of unused food because of public health laws. Consider new and unusual uses for discarded foods.

DIRECTIONS: Thinking from the point of view of each type of hat, think of a solution that they would come up with to the above scenario. Write down ideas under each below.

BLUE HAT SOLUTION	ORANGE HAT SOLUTION	GREEN HAT SOLUTION

PURPLE HAT SOLUTION	YELLOW HAT SOLUTION	RED HAT SOLUTION

Which solution do you think is best? Why?

_____

_____

_____

_____

WOULD YOU RATHER...

DIRECTIONS: CIRCLE YOUR ANSWER. WHEN WE ARE IN CLASS TOGETHER: HOLD A 1 FOR THE FIRST OPTION OR A 2 FOR THE SECOND.

BE READY TO ARGUE YOUR SIDE BECAUSE NOT ALL OF YOUR CLASSMATES WILL AGREE WITH YOU!

1. Watch Netflix or watch Hulu?
2. Eat pizza or eat French fries?
3. Never be able to speak or never be able to hear?
4. Be an elephant or be a lion?
5. Have legs as arms or have arms as legs?
6. Laugh even when nothing is funny or cry even when nothing is sad?
7. Have candy for teeth or have pasta for bones?
8. Never be allowed to text again or never be allowed on social media again?
9. Have Instagram or have Tik Tok?
10. Be famous or be rich?
11. Be smart or be resilient?
12. Play video games or play sports?
13. Hangout with your family or hangout with your friends?
14. Discover a cure for cancer or discover a gold mine?
15. Be excellent (best of all time) at one thing or be good at everything?

Are there any would you rather questions you have for the class? Write them in the space below.

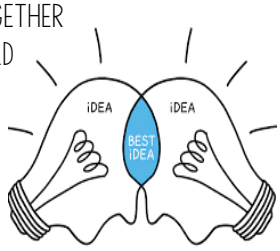
DAY THREE: WESTVIEW SCIENTISTS ARE COLLABORATORS

DO NOW: DO YOU PREFER TO WORK IN A GROUP OR BY YOURSELF? WHY?

VOCABULARY

COLLABORATION: WORKING WITH OTHER PEOPLE, LISTENING TO THEIR IDEAS, COMING UP WITH GREAT THINGS TOGETHER

WHAT IS SOMETHING THAT YOU COULD NOT DO BY YOURSELF? WHAT IS SOMETHING THAT YOU COULD NOT DO WITH ANYONE ELSE?



ESSENTIAL QUESTION: WHY DO YOU BELIEVE THAT IT IS IMPORTANT FOR SCIENTISTS TO BE COLLABORATIVE?

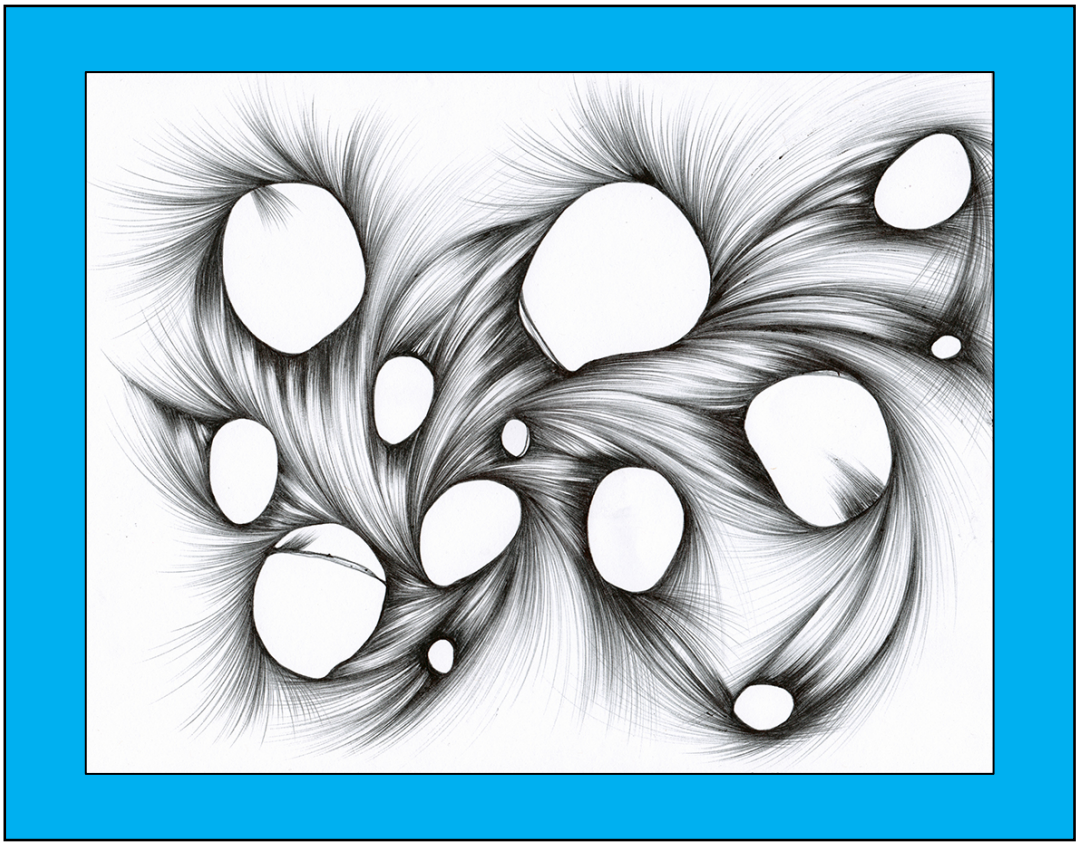
ACTIVITY #1: COMMUNICATING THROUGH ART?

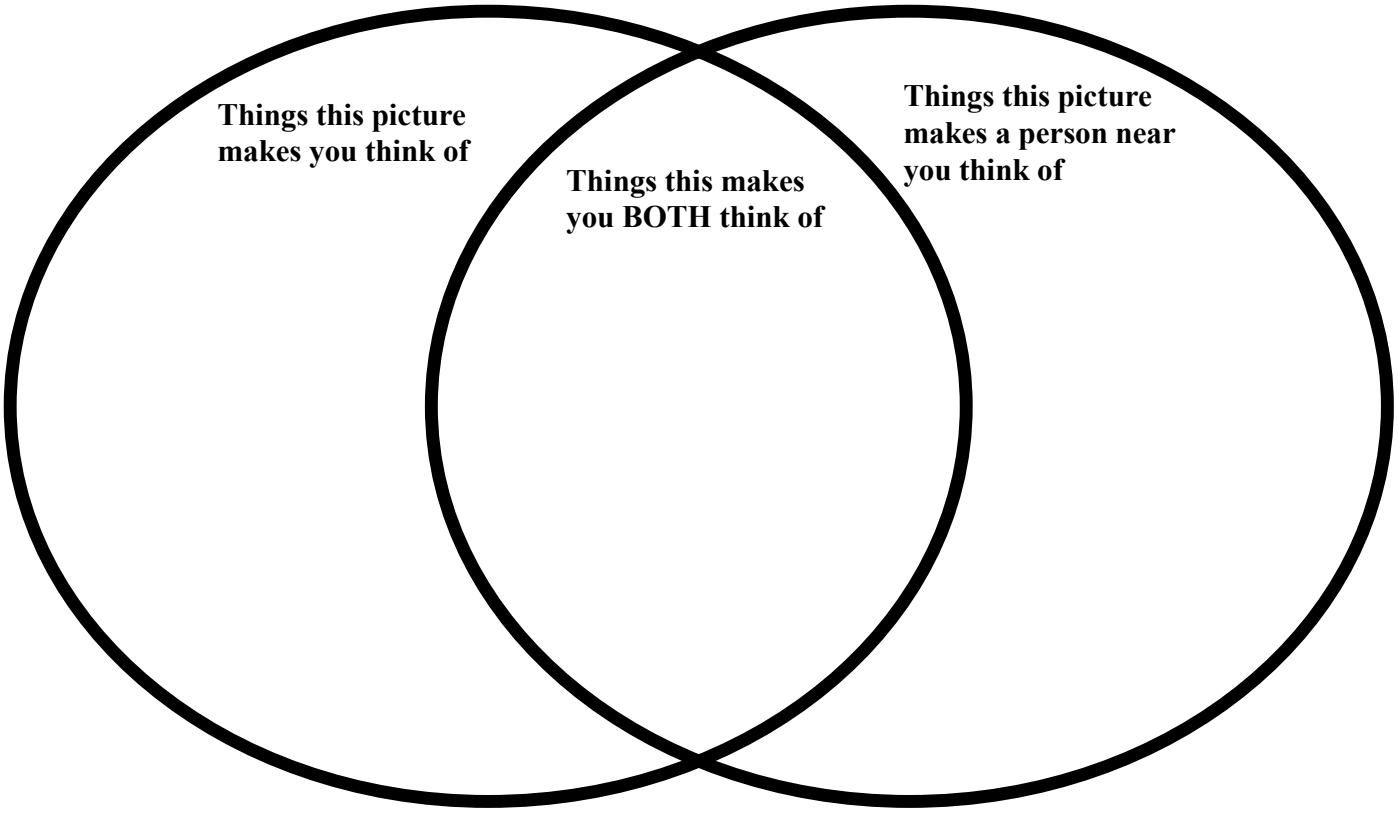
ACTIVITY #2: MAD LIBS

ACTIVITY #3: WRITE A STORY

ACTIVITY #4: GETTING TO KNOW YOU!

COMMUNICATING THROUGH ART?





MADLIBS

Directions: Ask someone nearby to give you a descriptive word when the word under the line says adjective, ask for a person/place/thing when the word says noun, and an action when the word says verb. DO NOT read the story before hand. They should just give you random words that you fill in based on what it asks for (adjective, city, noun, etc).

BOOKish Mad Libs

There are many _____ ways to choose a/an _____ to
ADJECTIVE NOUN
read. First, you could ask for recommendations from your friends and
_____. Just don't ask Aunt _____—she only
PLURAL NOUN PERSON IN ROOM (FEMALE)
reads _____ books with _____-ripping goddesses
ADJECTIVE ARTICLE OF CLOTHING
on the cover. If your friends and family are no help, try checking out the
_____ Review in *The* _____ *Times*. If the _____
NOUN A CITY PLURAL NOUN
featured there are too _____ for your taste, try something a little
ADJECTIVE
more low-_____, like _____: *The* _____
PART OF THE BODY LETTER OF THE ALPHABET CELEBRITY
Magazine, or _____ *Magazine*. You could also choose a book the
PLURAL NOUN
_____-fashioned way. Head to your local library or _____
ADJECTIVE A PLACE
and browse the shelves until something catches your _____.
PART OF THE BODY
Or, you could save yourself a whole lot of _____ trouble and log on
ADJECTIVE
to www.bookish.com, the _____ new website to _____ for
ADJECTIVE VERB
books! With all the time you'll save not having to search for _____,
PLURAL NOUN
you can read _____ more books!
NUMBER

WRITE A STORY

Directions: Ask someone nearby to help you write a short story. To do this, you will say the first word, and they will say the second. You switch back and forth until you have around five (5) sentences of a story.

For Example:
Mrs. Moser: Once
Ms. Hyde: I
Mrs. Moser: gave
Ms. Hyde: my
Mrs. Moser: dog
…
The story continues.

When I write this story on the page, I would write: Once I gave my dog…

CONTACT & GET TO KNOW YOU INFORMATION

Name: _____

Who should we contact at home? _____

Email Address: _____

Phone Number: _____

Birthday: _____

Favorite Snack: _____

What is your favorite hobby?

_____

_____

Who is your favorite TV star, actor, fictional character, or super hero? Why?

_____

_____

DAY FOUR: WESTVIEW SCIENTISTS ARE CRITICAL THINKERS

DO NOW: WHAT DOES A SCIENTIST LOOK LIKE? DRAW A PICTURE OR WRITE ABOUT.

VOCABULARY

SCIENTIST: A PERSON WHO IS STUDYING A NATURAL OR PHYSICAL SCIENCE

DOES THIS DEFINITION CHANGE YOUR OPINION OF WHAT A SCIENTIST LOOKS LIKE? WHY OR WHY NOT?

_____

_____

CRITICAL THINKING: TO ANALYZE, GATHER DATA, DRAW, COMMUNICATE, APPLY, OBSERVE, QUESTIONING, ETC SOMETHING THAT IS GOING ON IN THE WORLD SO THAT YOU CAN COME TO GOOD, CORRECT ANSWERS

INQUIRY: ASKING FOR MORE INFORMATION

WHEN IS A TIME YOU WERE A CRITICAL THINKER?

_____

_____

ESSENTIAL QUESTION: WHY DO YOU BELIEVE THAT IT IS IMPORTANT FOR SCIENTISTS TO BE CRITICAL THINKERS?

_____

_____

ACTIVITY #1: RIDDLE ME THIS

ACTIVITY #2: VALUES CONTINUUM

ACTIVITY #3: TAKE A STANCE

ACTIVITY #4: GETTING TO KNOW YOU!

RIDDLE ME THIS...

Give your best guesses or the correct answer to this questions. Read the words carefully and practice that critical thinking!

IF TWO'S COMPANY, AND THREE'S A CROWD, WHAT ARE FOUR AND FIVE?

Answer:

DURING WHICH MONTH DO PEOPLE SLEEP THE LEAST?

Answer:

WHAT TASTES BETTER THAN IT SMELLS?

Answer:

I AM AN ODD NUMBER. TAKE AWAY A LETTER AND I BECOME EVEN. WHAT NUMBER AM I?

Answer:

FORWARD I AM HEAVY, BUT BACKWARD I AM NOT. WHAT AM I?

Answer:

BROTHERS AND SISTERS I HAVE NONE BUT THIS MAN'S FATHER IS MY FATHER'S SON. WHO IS THE MAN?

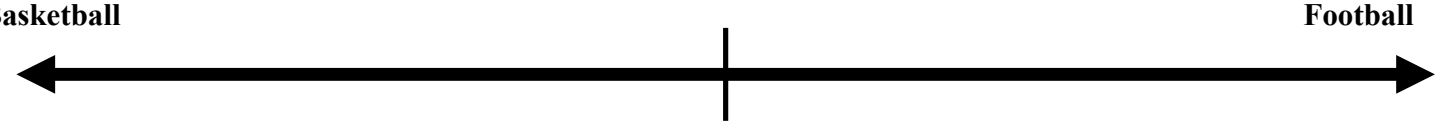
Answer:

VALUES CONTINUUM

Mark along the line where you "stand." Tell us which one you like more or agree with more. The only rule is that you cannot be in the exact center. You have to be closer to one side than the other, even if it is barely.

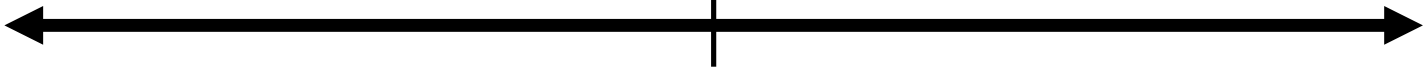
BASKETBALL OR FOOTBALL

Basketball — **Football**



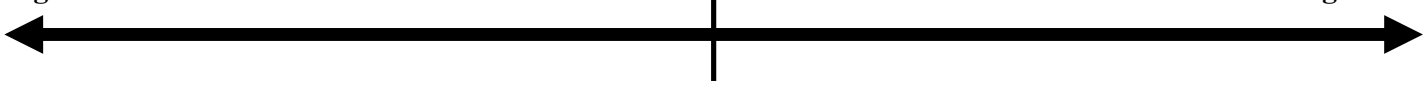
HAMBURGERS OR PIZZA

Hamburgers — **Pizza**



WHICH IS MORE IMPORTANT: BEING SMART OR WORKING HARD?

Being Smart — **Working Hard**



TAKE A STANCE

Write down three arguments that agree with the statement AND three arguments that disagree with the statement. Decide which side of the statement you agree with more. Tell me why you agree with it.

STATEMENT: Hot dogs are sandwiches.

AGREE

Argument #1: _____

_____

_____

Argument #2: _____

_____

_____

Argument #3: _____

_____

_____

DISAGREE

Argument #1: _____

_____

_____

Argument #2: _____

_____

_____

Argument #3: _____

_____

_____

FINAL STANCE: _____

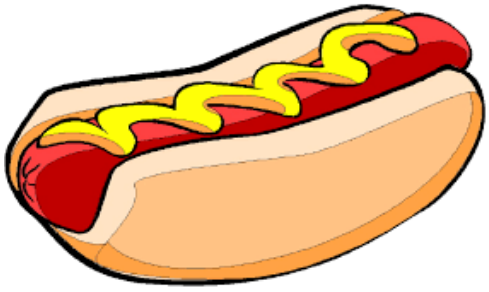
Why did you choose this side of the argument?

_____

_____

_____

_____



3G's

Write about one of the three G's:

1. A good joke
2. Something you are grateful for
3. Something great that happened recently

I will be writing about # ___

DAY FIVE: WESTVIEW SCIENTISTS ARE CONFIDENT

DO NOW: WHEN DO YOU FEEL YOUR BEST? WHAT DO YOU WANT TO BE WHEN YOU GROW UP? WHAT GOALS DO YOU HAVE FOR YOURSELF THIS YEAR?

VOCABULARY

CONFIDENCE: CONFIDENCE: THE FEELING THAT YOU ARE ENOUGH THE WAY THAT YOU ARE, FEELING GOOD ABOUT YOURSELF AND YOUR ABILITIES

WHAT IS SOMETHING YOU ARE CONFIDENT YOU CAN DO WELL?

_____

_____

ESSENTIAL QUESTION: WHY DO YOU BELIEVE THAT IT IS IMPORTANT FOR SCIENTISTS TO BE COLLABORATIVE?

_____

_____

ACTIVITY #1: I AM

ACTIVITY #2: LETTER TO FUTURE SELF

ACTIVITY #3: GETTING TO KNOW YOU!

Directions: On this page, write 10 positive thoughts about yourself. This can be things you are good at, traits you have, or your relationship to other people. You may decorate the page as you like. Make it colorful or add pictures to it!

I AM

Directions: On this page, write a letter to yourself at the end of 6th grade. Your teacher will keep this letter and give it back to you at the end of the year. Write a **minimum of 8 sentences**.

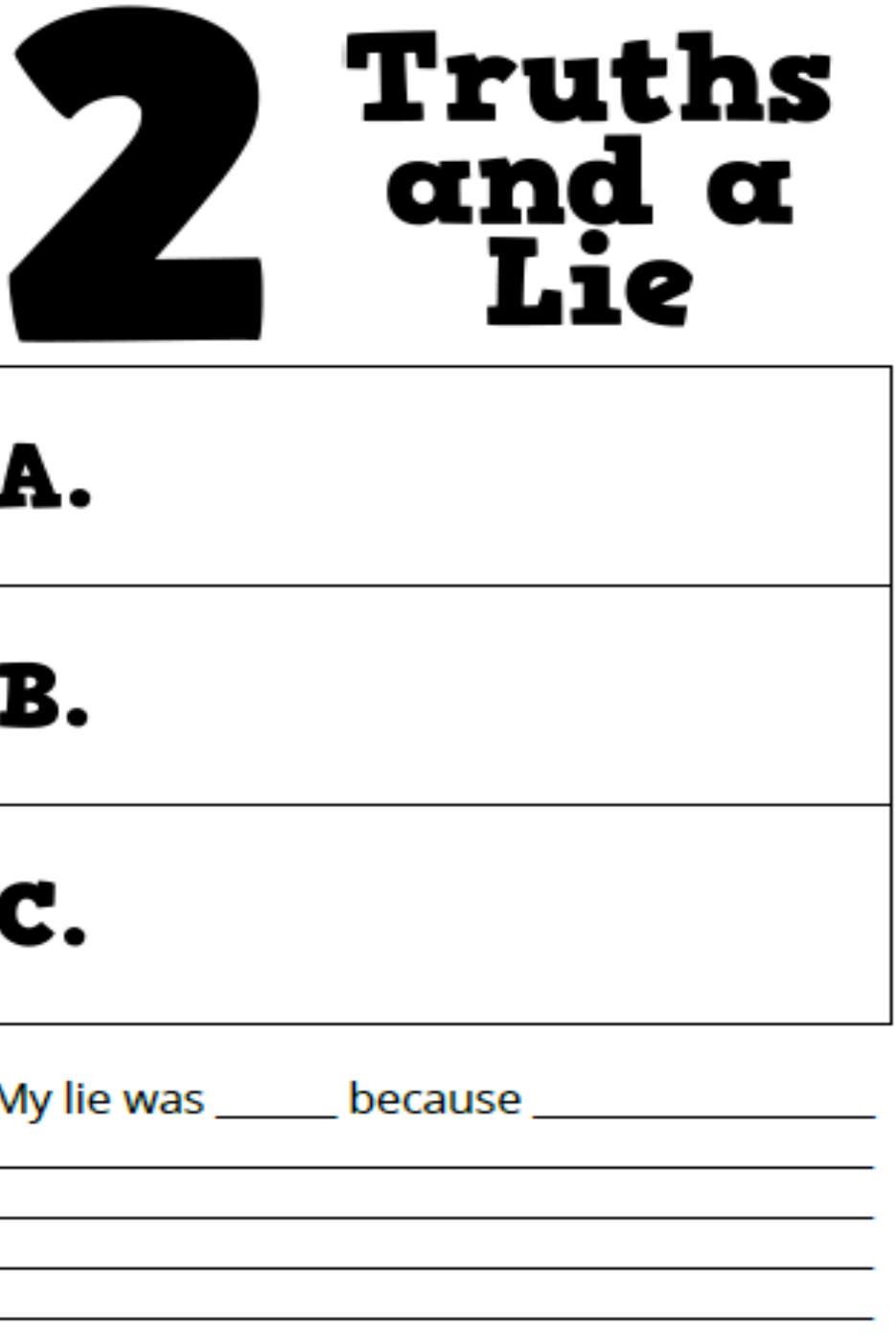
Questions to Guide You: What do you think you will be like? What do you think you will have learned? Do you think you'll still be friends with the same people? What advice would you give yourself?

Dear Future Me,

Two Truths And a Lie

Directions: Write down three statements about you in a random order. Two should be true, and one should be false. When we get together on Zoom, be ready to share your statements and your teammates will guess which one is a lie!

TWO TRUTHS & A LIE



DAY SIX: DATA DAY #1

DO NOW: DO YOU LIKE TAKING TESTS? WHY OR WHY NOT?

VOCABULARY
DATA: FACTS AND STATISTICS THAT ARE COLLECTED TO PROVE OR SHOW SOMETHING
MAP TESTING: THE STATE TEST THAT STUDENTS TAKE TO SHOW WHAT THEY HAVE LEARNED

DO YOU REMEMBER HAVING TO DO MAP TESTING? HOW DID YOU FEEL ABOUT THE MAP TESTS?

_____

_____

ESSENTIAL QUESTION: WHAT DO YOU ALREADY KNOW? WHAT DO YOU STILL NEED TO LEARN?

_____

_____

ACTIVITY: PRE-TEST PRACTICE DAY #1

This is not for a grade. This is to see what you already know at the start of our year together. Just do your best!

1. A student is comparing characteristics of three toy cars.

Characteristics of Three Toy Cars

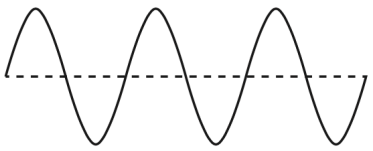
Toy Car	Speed (meters/second)	Mass (kilograms)	Kinetic Energy (Joules)
1	2	1	2
2	2	2	4
3	2	4	8

Circle a word or phrase from each set of options to complete the following sentence based on the data provided in the table.

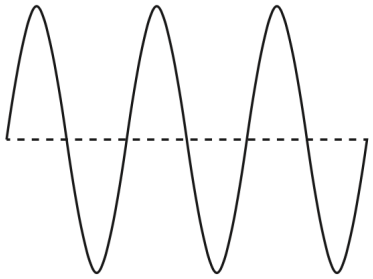
As the (speed / mass) increases, the kinetic energy of the car (increases / decreases / stays the same).

2. The drawings show two waves.

Wave 1



Wave 2



Which statement **best** compares these two waves?

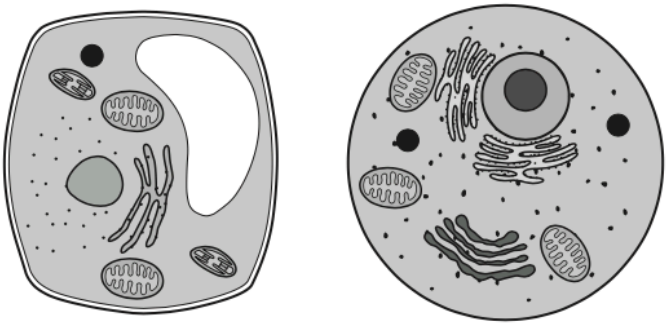
A. Wave 1 has a higher frequency because it has a longer wavelength than wave 2.
B. Wave 1 has a higher frequency because it has a higher amplitude than wave 2.
C. Wave 2 has more energy because it has a higher amplitude than wave 1.
D. Wave 2 has more energy because it has a higher frequency than wave 1.

3. Circle a word in each set of options to **best** describe relationships between interacting parts of the human body.

The human body is composed of systems with interacting parts. Organ systems are made of (organs / organelles / tissues), which are composed of specialized cells that work together to form (organs / organelles / tissues). Each cell of the human body contains (organs / organelles / tissues) with a specific function.

4. The diagrams show a plant cell and an animal cell.

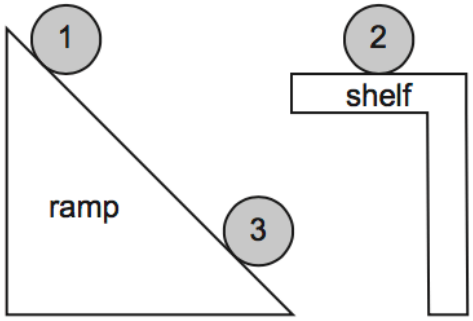
Plant Cell **Animal Cell**



Part A: Identify two organelles that are present in plant cells that are absent from animal cells.

Part B: Explain why one of the organelles identified in Part A is **not** necessary for animal cells to survive.

5. A student draws a diagram to model the potential energy of objects. The diagram includes three rubber spheres of equal mass, one ramp, and one shelf.



Part A: Identify two spheres that have the same potential energy. Explain how this can be determined from the diagram.

Part B: Identify two spheres that have unequal potential energy. Identify the sphere which has more potential energy.

DAY SEVEN: DATA DAY #2

DO NOW: WHAT ARE YOU LOOKING FORWARD TO LEARNING OR DOING IN SCIENCE THIS YEAR? DID YOU EVER DO COOL LABS OR FUN ACTIVITIES?

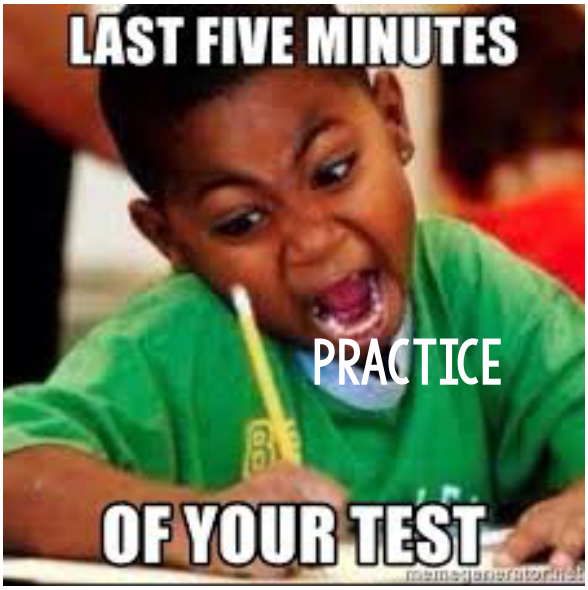
WHY IS IT IMPORTANT FOR TEACHERS TO KNOW WHAT YOU ALREADY KNOW?

_____

_____

ESSENTIAL QUESTION: WHAT SCIENCE DID YOU LEARN ABOUT IN ELEMENTARY SCHOOL? WHAT DO YOU STILL NEED TO LEARN?

ACTIVITY: PRE-TEST PRACTICE DAY #2



You will use this scenario to help you answer the remainder of questions in the section (#8-#12)

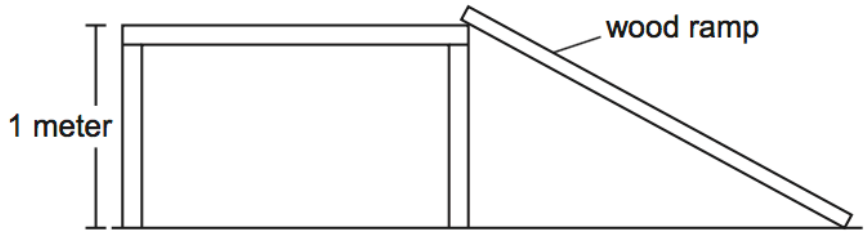
Energy in Motion

Students want to design an investigation to learn about energy and motion. They start their investigation by making two setups.

For Setup 1 they attach three shelves at the following heights: 1 meter, 2 meters, and 3 meters. The students place a 1-kilogram ball at each shelf height. The students observe the ball stays at rest when set on each of the shelves.

For Setup 2 they build a ramp using wood and a table.

Setup 2



They roll the 1-kilogram ball from the top of the ramp and record the speed of the ball as it travels down the ramp.

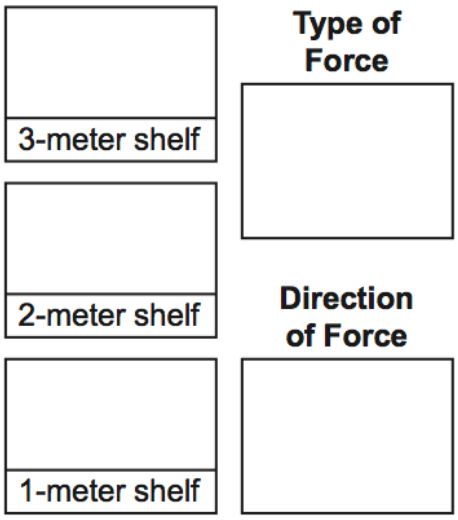
Setup 2 Data

Time in Motion (seconds)	Ball Speed (meters per second)
0	0
1	2
2	4

8. One student is drawing a model to represent the investigation for Setup 1. Complete the student's model using the following steps.

- Draw a ball on one of the three shelves where it will have the most potential energy.
- Write the number of the type of force that causes the ball to have the most potential energy in the box.
- Draw the arrow to show the direction of the force that causes the ball to have the most potential energy in the box.

Model Components	
Ball	
Type of Force	1. electrical 2. magnetic 3. gravitational
Direction of Force	



9. Based on the data collected for Setup 2, a student made the following claim about the energy of the ball.

Student Claim

As the ball travels down the ramp the kinetic energy increases and the potential energy stays the same.

Which statement **best** evaluates the student's claim?

A. The claim is incorrect because the potential energy increases when the speed of the ball increases.

B. The claim is incorrect because the potential energy of the ball is being transferred to kinetic energy as it travels down the ramp.

C. The claim is correct because the speed of the ball increases, causing the ball to remain in motion as it travels beyond the ramp.

D. The claim is correct because the speed of the ball is the same as its kinetic energy, and the speed of the ball increases as it travels down the ramp.

10. A student adds a material to the ramp that causes less friction between the ramp and the 1-kilogram ball. The student plans on rolling the ball from the top of the modified ramp.

    Circle the word or phrase from each set of options to complete the statements that **best** predict the results from using the modified ramp.

    Less friction acting on the ball will create (balanced / unbalanced) forces resulting in the speed of the ball to (increase / decrease / stay the same) as it travels down the ramp.

    The ball traveling down the modified ramp with less friction will have (a slower speed than / a faster speed than / the same speed as) the ball traveling down the first ramp.

11. **This question has two parts.**

    A student shapes a piece of clay into a small cube. The student places the clay cube at the bottom of the ramp in Setup 2. The student rolls the 1-kilogram ball down the ramp and observes the collision between the ball and the clay cube.

    Part A: Select one variable the student could change to Setup 2 to reduce the force of the ball during the collision.

    A. Replace the wood ramp with a ramp made of smoother material.

    B. Reduce the height of the ramp from 1 meter to 0.5 meters.

    Part B: Which statement provides the **best** support for the variable you selected in Part A?

    A. This would decrease the force of friction acting on the ball causing it to increase in speed.

    B. This would increase the force of friction acting on the ball causing it to decrease in speed.

    C. This would increase the potential energy of the ball resulting in an increase in kinetic energy.

    D. This would decrease the potential energy of the ball resulting in a decrease in kinetic energy.

12. The student switches the ball used in Setup 1 with a ball that has a mass of 2 kilograms. Another student states that the potential energy of the 2-kilogram ball would be the same as the potential energy of the 1-kilogram ball since they would be placed at the same heights.

    Which statement **best** explains whether the student's statement is correct or incorrect?

    A. The statement is correct because the gravitational force acting on objects with different masses is the same.

    B. The statement is incorrect because an object with more mass has less potential energy due to increased air resistance.

    C. The statement is incorrect because more force is needed to lift an object with more mass to the same height as an object with less mass.

    D. The statement is correct because the potential energy of any object with mass is based on an object's height above the ground and the speed at which it travels.

13. A student rolls a 3-kilogram ball down the same ramp used in Setup 2. The speed of the ball after 2 seconds was 4 meters per second. The student concludes that the kinetic energy of the 3-kilogram ball is identical to the 1-kilogram ball after it has rolled down the ramp for 2 seconds.

    Explain whether the student's conclusion is correct or incorrect. Use evidence from the investigation to support your answer.

DAY EIGHT + DAY NINE: FUTURE CITY CHALLENGE

DO NOW: IF YOU COULD FIX ONE PROBLEM IN THIS WORLD, WHAT WOULD IT BE? WHY?

VOCABULARY

ENGINEERING: A BRANCH OF SCIENCE THAT REQUIRES PEOPLE TO DESIGN, BUILD, AND USE MACHINES OR STRUCTURES
DESIGN: A PLAN OR DRAWING OF A PRODUCT THAT WILL BE BUILT
PLANNING: CREATING A LAYOUT, OUTLINE, OR PROPOSAL FOR DOING SOMETHING
BLUEPRINT: A DESIGN PLAN OR A SPECIFIC DRAWING
ORIGINALITY: SOMETHING THAT IS NEW OR UNIQUE, NEVER BEEN DONE BEFORE

ESSENTIAL QUESTION: WHAT CAN THE WORLD LOOK LIKE? HOW CAN WE MAKE THE WORLD A BETTER PLACE?

_____

_____

ACTIVITY: DESIGNING A FUTURE CITY

CHALLENGE: 50% OF THE PEOPLE LIVING IN YOUR CITY DO NOT HAVE ENOUGH FOOD TO EAT THE RECOMMENDED THREE MEALS PER DAY.

EXPECTATIONS: STUDENTS WILL DRAW A BLUEPRINT OF A CITY THAT IS DESIGNED SO THAT PEOPLE LIVING IN YOUR CITY WILL NO LONGER FACE THE CHALLENGE OF A LACK OF FOOD.

Drawing	Writing	Originality
Draw your city on the blank page labeled "your city drawing". The city should include anything you would see in a normal city. Think about: - Water & Food - Stores - Homes - Gyms - Schools - Offices - Parks - Amusement parks or landmarks - INCLUDE YOUR SOLUTION in the drawing	The written portion should be 5 or more sentences long, explaining what it is like to live in your city AND what you did to get rid of the challenge the city was facing.	Your city should be special, unique. It should not just be a copy of what everyone is is doing. Come up with cool, fun, crazy solutions!

HOW WOULD YOU SOLVE THE CHALLENGE?

Questions to consider:

1. How do people get food?
2. Where does food come from?
3. What foods do people need to survive and be healthy?
4. Who is going to pay for the food? Or how will the food be paid for?

Write about it: What will it be like to live in your city? What is your solution to not having enough food for your citizens?

YOUR CITY DRAWING

DAY TEN: LAB SAFETY

DO NOW: WHAT SHOULD BE IN A SCIENCE LAB? WHAT SHOULDN'T BE IN A SCIENCE LAB? HAVE YOU EVER DONE COOL SCIENCE EXPERIMENTS? WHAT MATERIALS DID YOU NEED FOR IT?

VOCABULARY
SAFETY: PROTECTING YOURSELF FROM HARM, INJURY, OR PAIN

ESSENTIAL QUESTION: WHAT DOES IT LOOK LIKE TO BE SAFE IN A LAB? WHY IS IT IMPORTANT TO BE SAFE?

_____

_____

BACKGROUND INFORMATION: SAFETY EXPECTATIONS IN THE LAB

ACTIVITY: LAB SAFETY SCENARIOS

CHECK POINT: SAFETY QUESTIONS

Safety Scenario #1:
Denym and Jaylen are in the classroom playing with dangerous chemicals while the teacher is not in there. After touching one of the chemicals, Denym rubs his eyes to scratch them because they are itchy. His eyes get puffy and red.

What did Denym and Jaylen do wrong?

_____

_____

What should they have done?

_____

_____

Safety Scenario #2:
Dymund walks into the classroom with high heels on and her best outfit during a lab day. While completing the lab, she walks to the front of the room to get a chemical, but trips on a marker. She falls into the table with the chemicals and they spill everywhere.

What did Dymund do wrong?

_____

_____

What should she have done?

_____

_____

Safety Scenario #3:
Antoinette and Sherrell are joking around in the science room and spill chemicals onto the table that end up getting all over Emanuel's clothes. They apologize, but Emanuel has to be taken to the nurse.

What did Antoinette and Sherrell do wrong?

_____

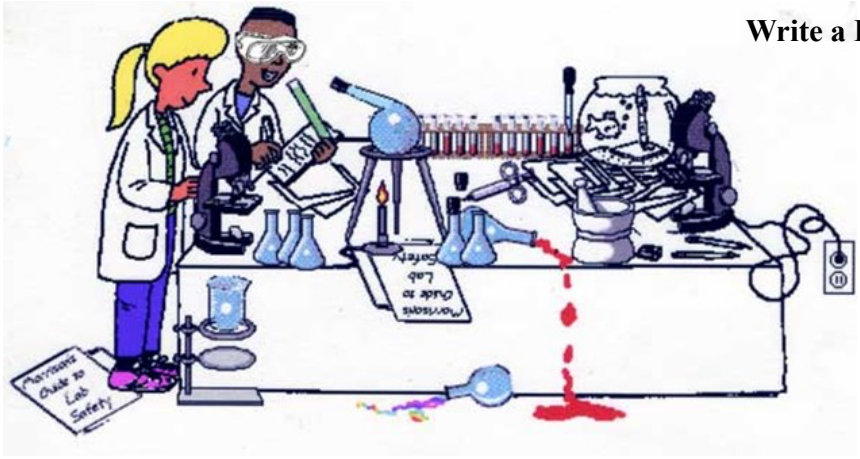
_____

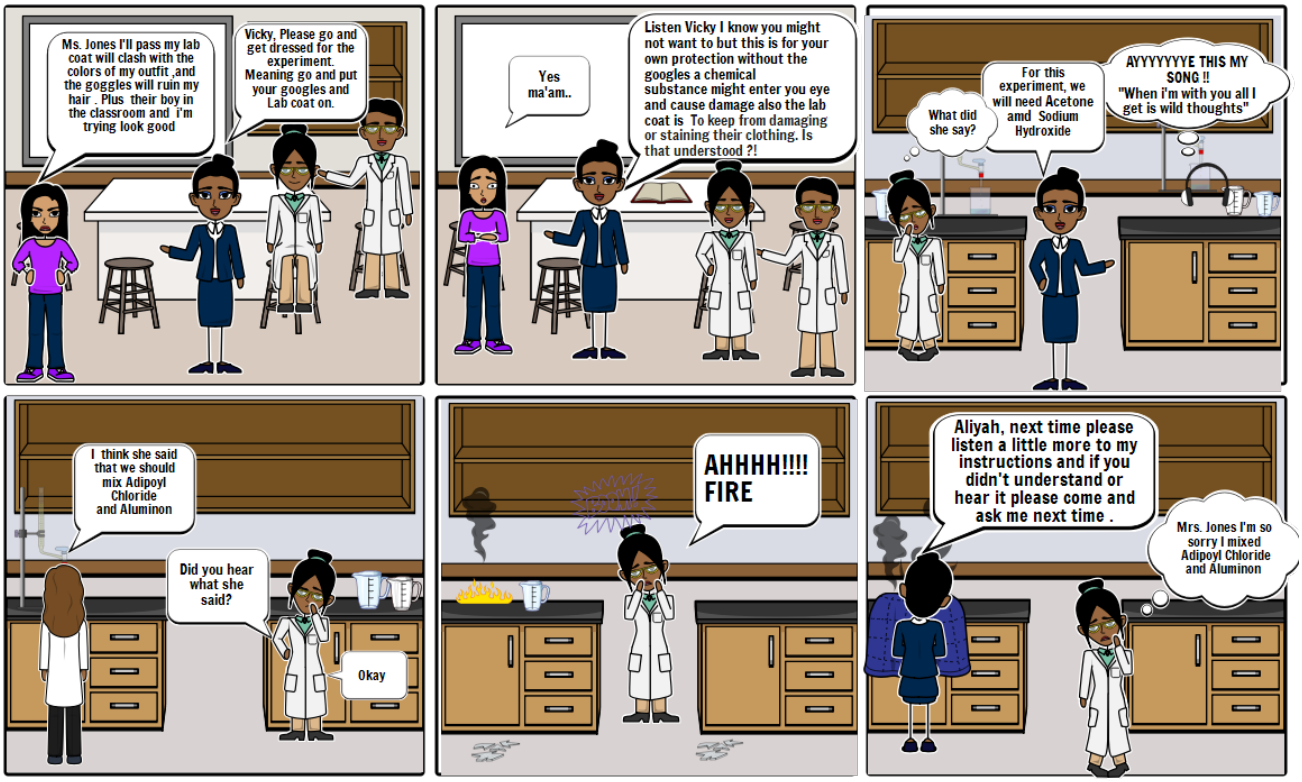
What should they have done?

_____

_____

Write a List: What is wrong with this picture?





Create your own at Storyboard That

Write about it: What does it look like to be safe in a lab?

_____

_____

_____

_____

SAFETY CHECKPOINT

Write **S** for safe or **N** for unsafe.

___ Wearing goggles during a lab

___ Wearing high heels during a lab

___ Rubbing your eyes after touching chemicals

___ Pushing people in the lab

___ Wearing clothes that are okay to get dirty

___ Wearing close-toed shoes during a lab

___ Listening to the teacher for directions

___ Yelling to a classmate while the teacher is talking

___ Touching things that you have not been told to

___ Using science materials

___ Throwing things in the lab

Select the best answer.

1. When performing an experiment, it is best to:
    A. Stay at your table.
    B. Run around the room.
    C. Mess with other students.

2. When performing an experiment, it is best to wear:
    A. Goggles
    B. Glasses
    C. Contacts

3. When dealing with chemicals, we should assume that they are dangerous unless we are told that they are safe:
    A. True
    B. False

DECORATE YOUR MASK

Using whatever you have, decorate your face mask. And remember: Wear a mask when you are in public! It keeps you safe!