8th Grade

Week 1

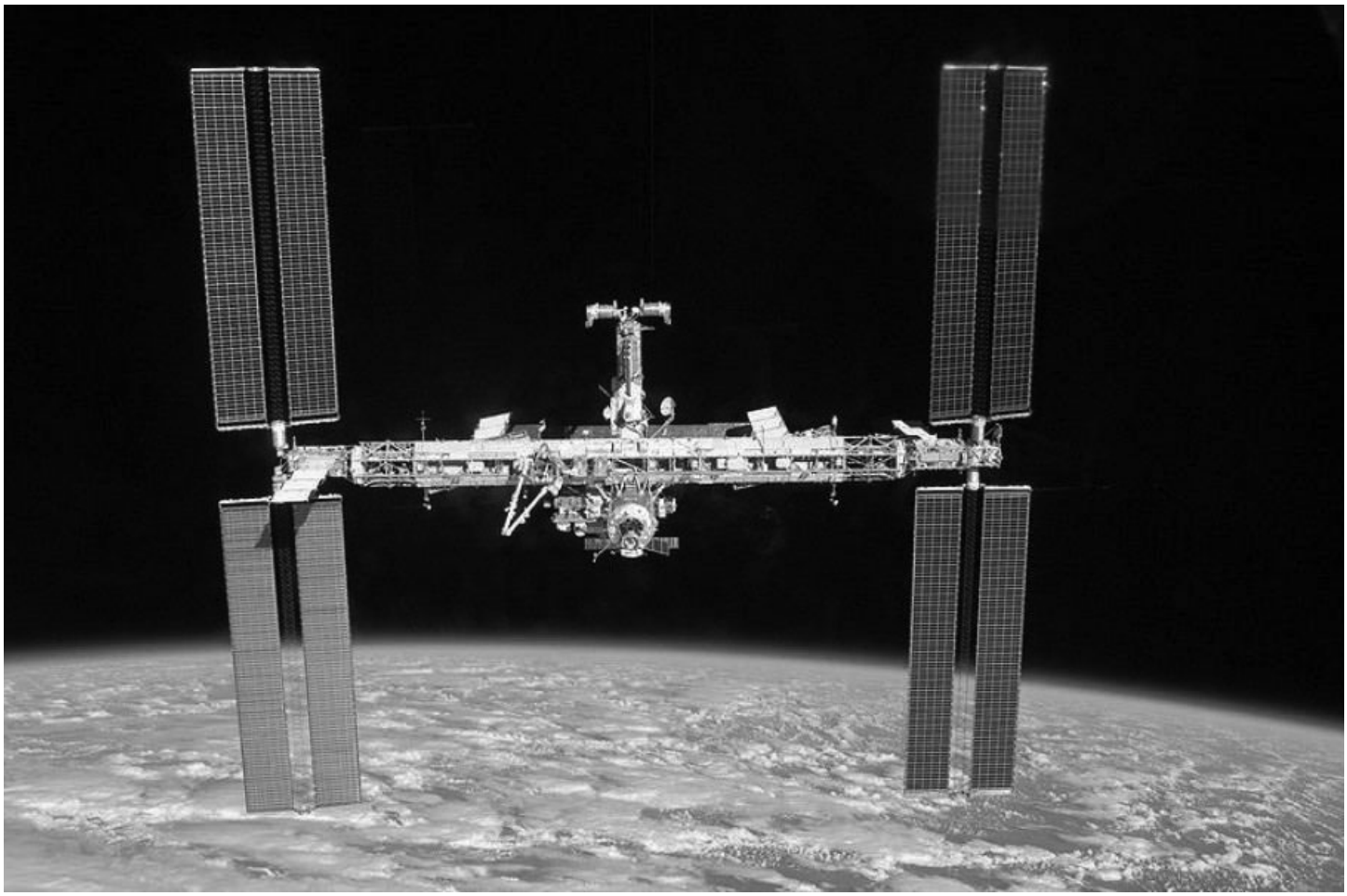
March 23, 2020

Please work with your child to complete the activities in the packet.

Your child may do these on their own or you may support them as needed.

The Most Expensive House in the Universe

by ReadWorks



Do you know where the most expensive house in the universe is located? Some might guess Hollywood, where some of the richest and most famous movie stars have their homes. Others might think of New York City, where a one-bedroom apartment in Manhattan can cost more than a mansion in the suburbs. But they would all be wrong, because this is a trick question. The most expensive house isn't even properly located on Earth. It's the International Space Station (ISS), which is circling in orbit above us right now. The cost to build this engineering marvel, which is roughly the size of a football field, is around 150 billion dollars.

Many different governments cooperated in order to plan and build the ISS, including the USA, Russia, Japan, Canada, and Europe. These entities decided to work together on the project only after developing plans independently for related space projects. By combining forces, they reasoned, they could split the cost of constructing a space station and also share resources while onboard the station.

The countries envisioned three important purposes for their joint project: to support scientific research, to help astronauts continue to explore space, and to educate the public. Thus, the engineering criteria for the space station had to include facilities to support each of these important missions.

Construction began in 1998, after the countries decided to band together and merge their space missions to create the ISS. Many countries used their spacecraft to deliver the parts for the ISS, little by little, into space. First came the operating systems and hardware. Then, two years later, a Russian rocket delivered the living quarters (complete with beds, toilets, and a kitchen) that would make the ISS habitable for humans. The first "residents" of the ISS-two Russian astronauts and one American -arrived on *Expedition 1* in 2000. Over time, more space missions to the ISS added new parts to the space station, such as "docks" for incoming spacecraft that would make it easier for astronauts to come in and out of the station.

Throughout the construction of the ISS, which is partially solar-powered, engineers had to think constantly about the best way to keep the ISS running. They had to build and position the station's parts so that the space station could be powered by light from the sun. They also had to think about ways to protect it from meteoroids (including installing strong shutters on its seven windows). They installed robotic "arms" for the space station that could grab and hold both ships and astronauts securely while docking. And they had to install features that would make it easier to live for long stretches of time in space, such as exercise machines for the astronauts.

Astronauts can come and go on the ISS. They come to perform many of the experiments for which the station was designed, involving biology, physics, astronomy, and meteorology. Others test equipment to be used in missions to the moon and Mars. In a Japanese-built laboratory aboard the ISS called *Kibo* (which means "hope"), they can even grow plants and raise fish. However, most of the astronauts' space food is still delivered in sealed bags, and there isn't much variety. Thus, the crew aboard the ISS often looks forward to visiting shuttles that bring the astronauts fresh, different fruit to eat.

Life aboard the ISS has become relatively more comfortable thanks to technological improvements developed by engineers; however, it has not always been easy for the engineers back home to work on the space station. Space travel and construction of spacecraft are two of the most expensive projects a country can take on, and as the economies around the world shift, some countries have a harder time contributing financially. Sometimes, engineers from different countries will disagree about the best way to build something. And while some people on the space station project think it's a good idea to charge money to space "tourists" in order to provide more funds for the project or to charge companies a lot of money to advertise their business on the rockets that fly to the ISS, others think that these ideas do not align with the original purposes of the ISS. But the fact is, no country or individual can afford the giant price tag for this important space "house" alone, so they must keep working together. And the results-whether they include important new scientific discoveries, easier and more frequent missions to Mars, or better cultural relations between our countries-are sure to benefit us.

When the Empire State Building Was New

by W.M. Akers

Today, New York's Empire State Building is one of the most famous structures in the world. It stands hundreds of feet taller than the skyscrapers that surround it, and is visible from far away in New Jersey and Long Island. But it isn't the tallest building in the world. In fact, since the recent completion of One World Trade Center, it isn't even the tallest building in New York City!

But when the Empire State Building was constructed, it was more than just another skyscraper. It was the tallest, most remarkable building on the earth-and it stayed that way for close to forty years. To understand what people thought about the Empire State Building when it was first constructed, we can look at original newspaper reports from *The New York Times*. These are called primary sources, because they were written by people who witnessed history first-hand. With these *New York Times* reports, we can see the building through the eyes of the past, and perhaps have a chance to appreciate this most famous skyscraper as though it were new.

* * *

The Empire State Building was built at the site of the famous Waldorf-Astoria Hotel, a lavish structure that, by 1929, was no longer up to the demands of the modern world. A corporation headed by former New York governor Alfred E. Smith proposed to build an office building there-not just any office building, but the greatest in the world. At this time, there was fierce competition to see who could build the tallest building on the earth. The nearby Chrysler Building was set to claim the title, but Smith and his company wanted to steal it from them, by building something so big that it would be years before anyone could top it.

There was just one little problem: the Great Depression. The stock market crashed at the end of 1929, destroying banks, emptying savings accounts and leaving millions out of work. But the men behind the Empire State Building would not be stopped. They finished tearing down the old Waldorf-Astoria by the beginning of 1930, and on March 17-St. Patrick's Day-the work on the skyscraper began.

"Time was an essential element," wrote Smith, to complete "the greatest structural accomplishment" the city had ever seen.

Because height was of the utmost importance, the building was designed from the top down. At the very top would be a "dirigible mooring mast." A dirigible is a kind of giant blimp, built to fly across the Atlantic Ocean in the days before jets. Although now that may seem silly, at the time, dirigibles were cutting edge technology, and the mooring mast, according to Smith, was "a logical development of this day of air transportation." Moreover, the 200-foot mast would allow the building to solidly surpass the Chrysler Building in height.

The mooring mast was planned to reach nearly 1,300 feet above Fifth Avenue. Below that was the building-as wide as a city block on the first floor, but narrower as it went up. The places where it got narrower are called "setbacks," and they started at the sixth floor, a design the architects said, "will save space and assure light and air to neighbors."

"We believe we have solved the problem of light and air in congested districts," said Mr. Smith.

Construction began on the bottom floors even before the designs for the top floors had been finalized. Once it started, it went fast. *Times* reporter C. G. Poore described the process as "a chase up into the sky, with the steel workers going first and all the other trades following madly after them." To illustrate this, Poore produced "some staggering figures":

The building of the skyscraper represents an investment of $50,000,000 and all other figures are in proportion. More than 50,000 tons of steel, 10,000,000 bricks, and 200,000 cubic feet of stone will be used before the frame is completed. There will be seventy-five miles of water mains and 2,000,000 feet of electric light and power wiring...More than 3,000 men are daily at work...Among them are 225 carpenters, 290 bricklayers, 384 brick laborers, 328 arch laborers, 107 derrick men.

Each day, those men walked to work past long unemployment lines, which reminded them how lucky they were to have such well-paying jobs. Building the Empire State Building was a dangerous job, performed without hardhats, harnesses, or any of the safety equipment required today. Imagine walking out on a narrow steel beam, 1,000 feet above the street, and then having to work up there all day!

On each floor, Poore tells us, there was "a miniature railway system," to haul the steel, wood and

marble brought up from street level. And to keep the men from having to go all the way down to eat lunch, there were "restaurants at various levels of the building" designed for the workers. At night, when the bosses went home, the workers could relax. They would pick a specific floor of the building and throw a party-laughing and having fun, knowing that they were higher above the city than any of the richest men in town.

* * *

The building was finished in just over a year. Of all the words written afterwards, perhaps the most interesting come from Mrs. Alice Liddell Hargreaves, an elderly English woman who visited the tower soon after its completion. Seventy years earlier, Mrs. Hargreaves had known a quiet country pastor named Lewis Carroll, who used her as the inspiration for his most famous book: *Alice's Adventures in Wonderland*. Now much older than the character she inspired, Mrs. Hargreaves "seemed almost as excited with her newest adventures in the wonderland of New York."

The Empire State Building, she said, was "just like the tumble down [the] rabbit hole."

Name: _____ Date: _____

Use the article "When the Empire State Building Was New" to answer questions 1 to 2.

1. When the Empire State Building was constructed, how did it compare in height to other buildings?

_____

_____

_____

2. Why did Alfred E. Smith and his company want to build the Empire State Building? Support your answer with evidence from the article.

_____

_____

_____

Use the article "The Most Expensive House in the Universe" to answer questions 3 to 4.

3. What is the most expensive house in the universe?

_____

_____

_____

4. Why was the International Space Station built?

Use the articles "When the Empire State Building Was New" and "The Most Expensive House in the Universe" to answer questions 5 to 6.

5. Compare the Empire State Building with the International Space Station. Support your comparison with information from both articles.

6. Contrast the reason(s) the Empire State Building was built with the reason(s) the International Space Station was built.

WRITING PROMPT

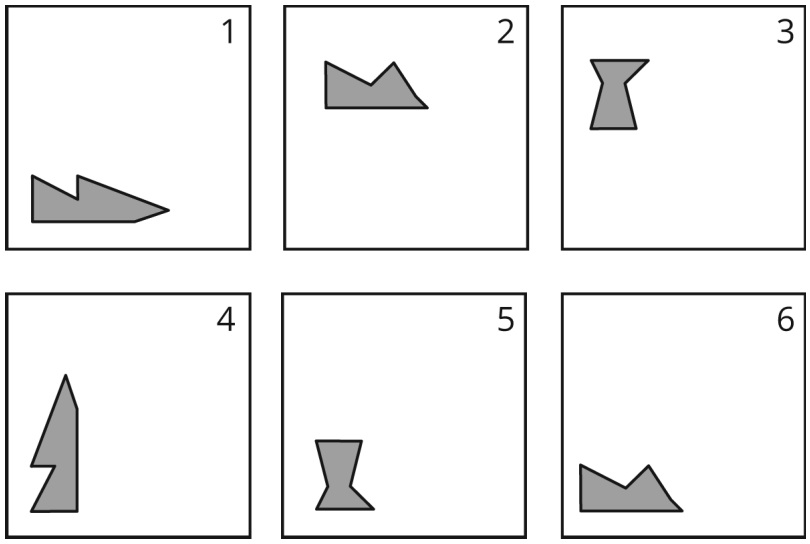
Week 1:

Imagine a giant box is delivered to your doorstep with your name on it. What's inside and what happens when you open it.

NAME DATE PERIOD

8.G.A.1- Very experimentally the properties of rotations, reflections, and translations.

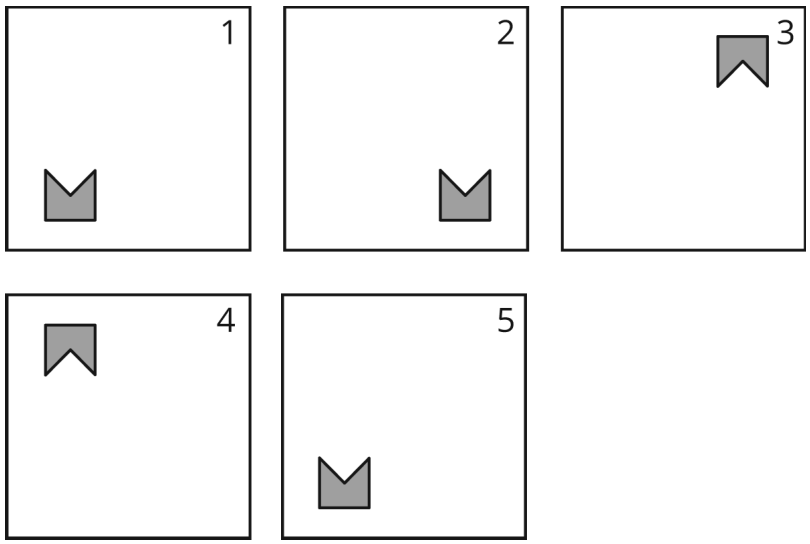
1. Each of the six cards shows a shape.



   a. Which pair of cards shows a shape and its image after a rotation?

   b. Which pair of cards shows a shape and its image after a reflection?

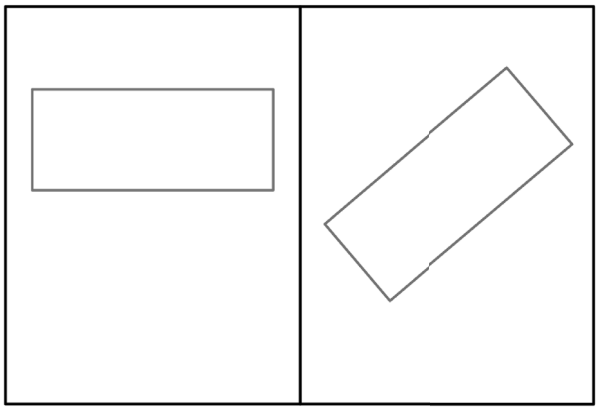
2. The five frames show a shape's different positions.



   Describe how the shape moves to get from its position in each frame to the next.

3. The rectangle seen in Frame 1 is rotated to a new position, seen in Frame 2.

NAME DATE PERIOD



Select **all** the ways the rectangle could have been rotated to get from Frame 1 to Frame 2.

A. 40 degrees clockwise

B. 40 degrees counterclockwise

C. 90 degrees clockwise

D. 90 degrees counterclockwise

E. 140 degrees clockwise

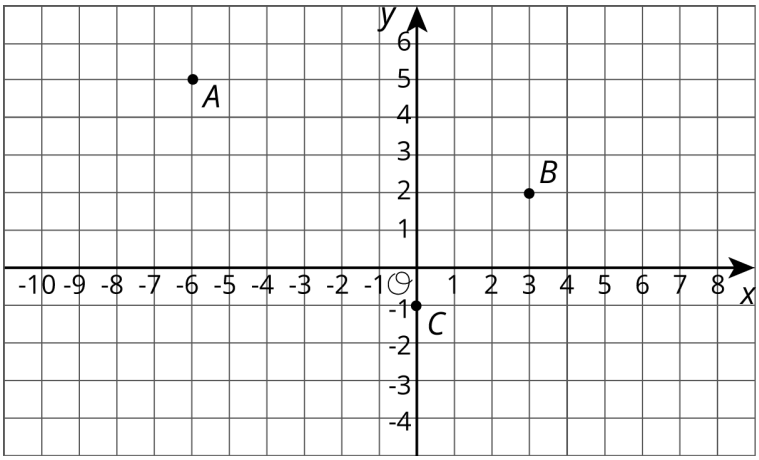
F. 140 degrees counterclockwise

NAME DATE PERIOD

8.G.A.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

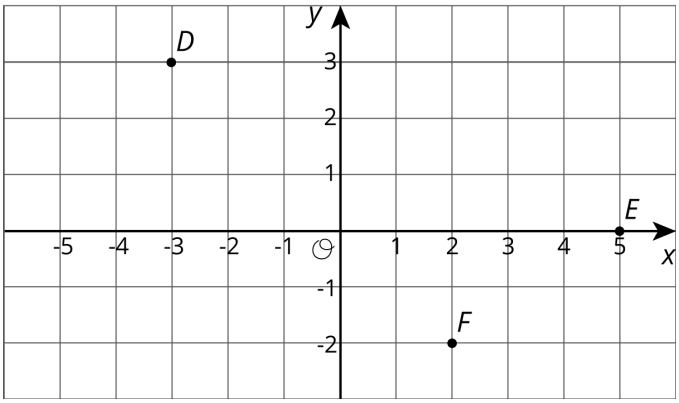
1.

a. Here are some points.



What are the coordinates of A, B, and C after a translation to the right by 4 units and up 1 unit? Plot these points on the grid, and label them A', B' and C'.

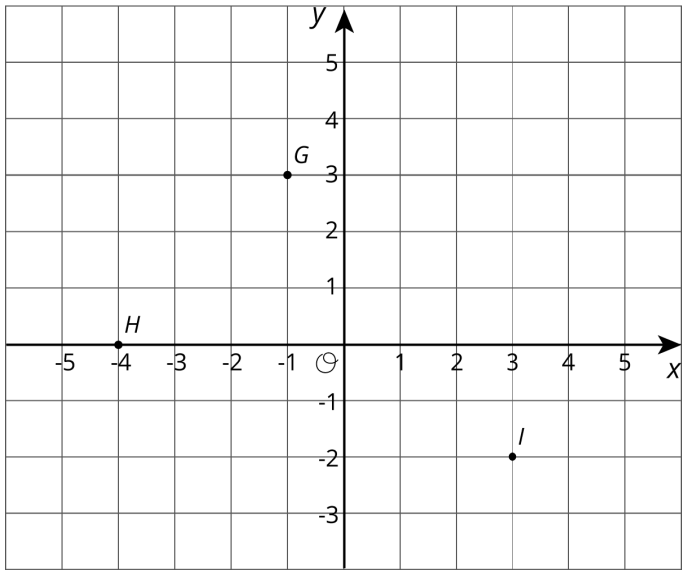
b. Here are some points.



What are the coordinates of D, E, and F after a reflection over the y axis? Plot these points on the grid, and label them D', E' and F'.

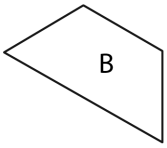
NAME DATE PERIOD

c. Here are some points.



What are the coordinates of G, H, and I after a rotation about $(0,0)$ by 90 degrees clockwise? Plot these points on the grid, and label them G', H' and I'.

2. Describe a sequence of transformations that takes trapezoid A to trapezoid B.



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Speed, Velocity and Acceleration Calculations Worksheet

***s* = distance/time = d / t** **v = displacement/time= $\Delta x/t$**

Part 1 - Speed Calculations: Use the speed formula to calculate the answers to the following questions. Be sure to show your work for each problem (write the formula, numbers with correct units, and the answer with the correct units).

1. Calculate the speed for a car that went a distance of 125 kilometers in 2 hours time.

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

2. A baseball is thrown a distance of 60 meters. What is its speed if it takes 0.5 seconds to cover the distance?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

3. How much time does it take for a bird flying at a speed of 45 kilometers per hour to travel a distance of 1,800 kilometers?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

4. A comet is cruising through the Solar System at a speed of 50,000 kilometers per hour for 4 hours time. What is the total distance traveled by the comet during this time?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

Part 2 - Speed and Velocity Calculations: For problems 5 – 10 use the speed and velocity formulas to solve the following problems. Show your work (formula, numbers with correct units and answer with correct units).

5. Bob rides his bicycle on a bike path that is 75 kilometers long to get to his house that is due east of the bike path. If it takes Bob 15 hours then

a. What is his speed?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

b. What is his velocity?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

6. Jessica jogs on a path that is 25 kilometers long to get to a park that is south of the jogging path. If it takes Jessica 2.5 hours then

a. What is her speed?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

b. What is her velocity?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

7. What is the velocity of a motorcycle traveling 10 km west in 3 hours?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

8. How much time does it take a person to walk 12 km north at a velocity of 6.5 km/h?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

9. If the velocity of a car is 45 km/h west, how far can it travel in 0.5 hours?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

10. What is the velocity of a rocket that goes 700 km north in 25 seconds?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

Part 3 – Acceleration Calculations: For problems 11- 13 use the acceleration formula to solve the following problems. Show your work (formula, numbers with correct units and answer with correct units).

$$a = (Final\ Velocity - Initial\ Velocity) / Time = (v_f - v_o) / t$$

11. A driver starts his parked car and within 5 seconds reaches a speed of 60 km/h, as he travels east. What is his acceleration?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

12. A slug traveling at 3 mm/h, East decided to race the slug next to him increasing his velocity to 5 mm/h, East in one hour. What was the slug's acceleration?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

13. In a summer storm, the wind is blowing with a velocity of 8 m/s north. Suddenly in 3 seconds, the wind's velocity is 23 m/s north. What is the wind's acceleration?

Equation:	
Plug numbers into the equation	
Final Answer w/ units	

Writing Prompt

Quick Write: What does the phrase "We the People" mean to you?

Student Handout #2: Historical Reading Skills

Historical Reading Skills	Questions	Students Should Be Able To:	Student Prompts
Sourcing	• What kind of artifact is it? • Who created/published this? • When was it created/published? • Where was it created/published? • What is the author's perspective? • Why was it created/published? • Is it reliable? Why? Why not?	• Identify the author's position on the historical event • Identify and evaluate the author's purpose in producing the artifact • Hypothesize what the author will say before reading the document • Evaluate the source's trustworthiness by considering genre, audience, and purpose	• The author probably believes . . . • I think the audience is . . . • Based on the source information, I think the author might . . . • I do/don't trust this document because . . .
Contextualizing	• When was the artifact/document created? • Where was the artifact/document created/published? • What was different then? • What was the same? • How might the circumstances in which the artifact/document was created/published affect its content?	• Understand how the context/background information influences the content of the document • Recognize that documents are products of the environment in which they were created	• Based on the background information, I understand this document differently because…. • The author might have been influenced by _____(historical context) • The document might not give me the whole picture because….
Close Reading	• What claims does the author make? • What evidence does the author use? • What language (words, phrases, images, symbols) does the author use to persuade the document's audience? • How does the document's language indicate the author's perspective? • For pictures/photographs – consider what is observable in the image and what message it is sending.	• Identify the author's claims about an event • Evaluate the evidence and reasoning the author uses to support claims • Evaluate the author's word choice; understand that language is used deliberately	• I think the author chose these words in order to … • The author is trying to convince me…. • The author claims…. • The evidence used to support the author's claims is ….
Corroborating	• Is the document consistent with itself? To what extent does the source contradict itself (internal consistency) • What do other documents/sources say? • Do the other sources agree? If not, why? (external consistency) • What are other possible sources? • What sources are most reliable?	• Establish what is probable by comparing sources to each other • Recognize disparities between accounts/sources	• The author contradicts himself/herself when… • The author agrees/disagrees with … • These sources all agree/all disagree about… • Another document or source to consider might be….

Adapted from the Stanford History Education Group

Student Handout #3: Homework Assignment

Directions:

1. You are to locate and bring in an artifact from your experience in elementary school. The artifact should help answer the question, “What was elementary school like?” The artifact can be a document, such as a homework assignment, letter from a teacher, an award, a copy of a picture, a yearbook or some other source that reflects something about your time in elementary school.

2. Answer the following sourcing questions about your artifact:

a. What kind of artifact is it?

b. Who created/published the artifact?

c. When was the artifact created/published?

d. Where was the artifact created/published?

e. What is the perspective of the artifact’s creator/publisher?

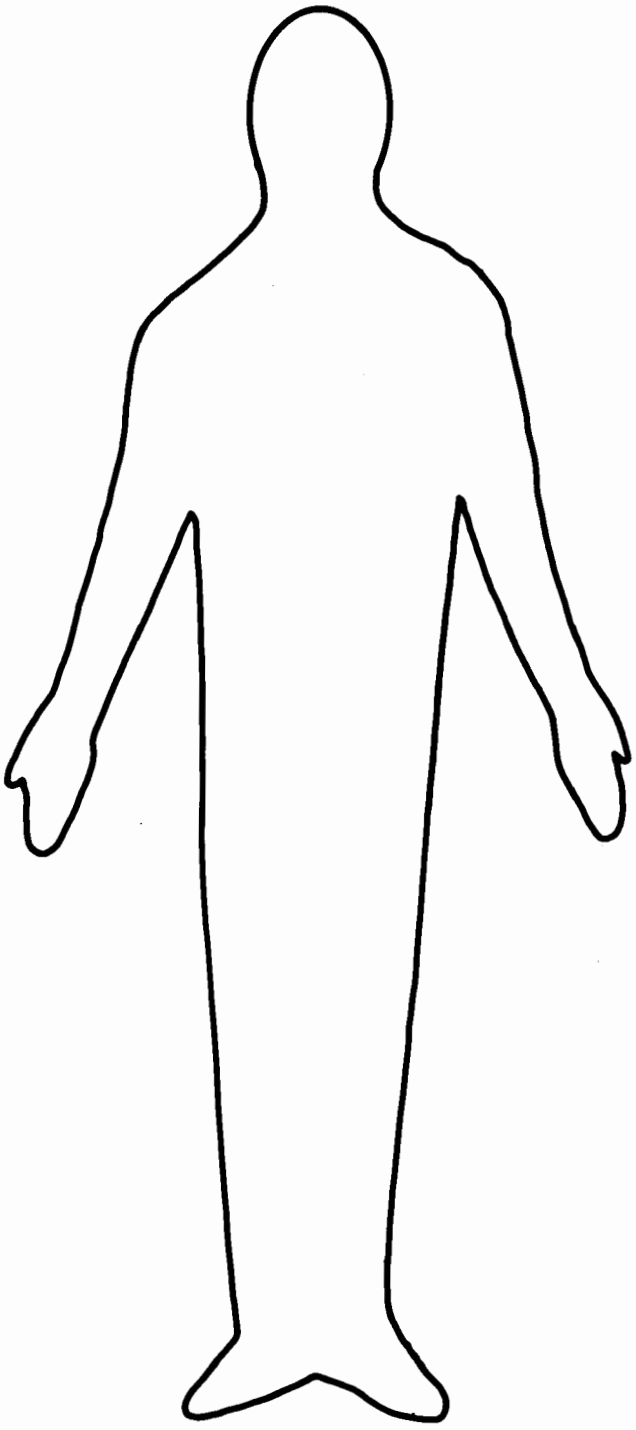
f. Why do you think the artifact was created/published?

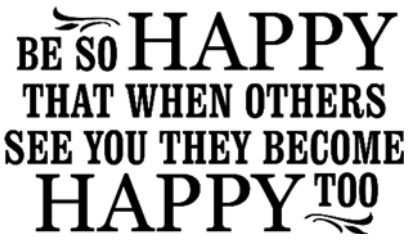
g. Is it a reliable piece of evidence to explain your elementary school experience? Why or why not?

Name _____ Date _____

Choose an Occupation

Decorate the figure below for any occupation you choose. Then on the back of this sheet, list at least five responsibilities or things that this person must do for the job you have selected.





SOMETHING TO WRITE ABOUT…

1. How do you feel when you witness happiness?
2. How can you give back happiness t those who give you joy?

Week 1

SOMETHING TO WRITE ABOUT…

1. What are you grateful for? Make a list of things that make you feel grateful and choose one to write about. Share your writing with someone. Talk to someone about what they are grateful for and why.