Name: _____ **Teacher:** _____ **Period:** _____

8th Grade ELA Power Standard Review

In this section, you will read 2 passages and answer questions 1-5.
Before you begin planning and writing, you will read the passages and answer four questions about what you have read. As you read the passages, think about what details from the passages you might use in your informational essay. These are the titles of the passages you will read:

1. Robots Long Ago
2. Robot Farmers

Robots Long Ago

By: Jim Gillebrand

When we think of robots, we often think of science fiction. After all, robots are a form of advanced technology and are sometimes the topic for stories. But for centuries, people have dreamed of robotic technology that would make life easier for humans. Robots can take many forms, but they all have one thing in common. Every robot is a device that can carry out a complex series of actions automatically.

Around the year 270 BCE, a Greek scientist named Ctesibius dreamed of creating objects that would help people complete certain tasks. He created a musical instrument that is like a modern-day pipe organ. He also invented a clock that used mechanical technology to keep track of time. These inventions helped people accomplish tasks, but they also inspired physicists and scientists in the years that followed to ream big in order to develop new ideas for robot inventions. In 1495, Leonardo da Vinci designed a robot that looked like a person. In the drawings, the robot looks like a knoght in armor, and it could even move its arms and legs! In 1898, Nikola Tesla invented a way to drive a boat using a remote control. People were thrilled and amazed with this invention. The future was wide open for new robotic creations.

Years after these inventions, the term “robot” was coined. In 1921, a European writer used the word in one of his plays. In 1941, an American author named Issac Asimov wrote about “robotic technology” in his science-fiction writings. These may have been fictional accounts, but scientists took notice. In 1956, the real first robot company began operation, and in 1961, robots began working in automobile factories, assisting their human co-workers in assembling cars. Soon inventors were creating robotic arms that functioned like human limbs. These arms were used in factories as well, assembling large and small items without ever becoming tired.

Today, robots help people with everything from surgery to space exploration. Robots have opened up possibilities that few probably dreamed possible.

Robot Farmers

By: Veronica Appleton

It is a sunny autumn morning, and the lettuce field beckons the farmer. The full-size lettuce heads are on the brink of maturing, and in order to yield the freshest crop, the farmer must move quickly. But the field is enormous, and help is scarce. To make the greatest profit, the farmer hires the fewest workers. If they cannot complete the task, though, the crop will go to waste.

With a decreasing workforce, many farmers are faced with the problem of how to harvest quickly and effectively with the smallest staff. But there may be a solution that involves harvesting without the assistance of humans. Enter the LettuceBot.

In Sunnyvale, California, a company called Blue River Technology is promoting a line of agricultural robots that could simplify the lives of farmers while making their harvest more profitable. The LettuceBot is programmed to analyze fields of lettuce at all stages of development. During the growing season, the robots roam the fields locating weeds and less healthy lettuce heads for quick removal. They analyze the soil for proper nutrients and moisture, alerting the farmer to where attention is needed.

The potential for robot farmers is not limited to wok on the ground. Unmanned aircraft called frones can be used to fly over and analyze crops. They can detect which crops are healthy and thriving and which need additional attention. Some drones are even equipped to apply necessary fertilizers and pesticides.

Back on the ground, farmers can use robots to manage their animals, as well. Robots are being used to milk cows, and the process is beneficial to both the farmer and the animals. Robots are also being used to herd and manage animals such as sheep. The robot acts as a shepherd, guiding the group and keeping them from danger.

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If you think that all robots are large and bulky, think again. Tiny flying robots the size of insects are being created to mimic bees. These little bee 'bots can pollinate plants in areas where the bee population has decreased or vanished.

Robots are precise and efficient and can complement the work of humans in many ways. There seems to be no end to their use on the farm.

1. Which sentence from "Robots ong Ago" BEST describes the ability all robots share?
    a. "After al, robots are a form of advanced technology and are sometimes the topic for stories."
    b. "Robots can take many forms, but they all have one thing in common."
    c. "Every robot is a device that can carry out a complex series of actions automatically."
    d. "Today, robots help people with everything from surgery to space exploration."
2. Which of the following sentences from "Robot Farmers" suggests that farm robots are intended to help, but not replace farmers?
    a. "But there may be a solution that involves harvesting without the assistance of humans."
    b. "They analyze the soil for proper nutrients and moisture, alerting the farmer to where attention is needed."
    c. "The potential for robot farmers is not limited to work on the ground."
    d. "There seems to be no end to their use on the farm."
3. Which main idea is expressed in both "Robots Long Ago" and "Robot Farmers"?
    a. Robots can be designed for every task and in every shape and size.
    b. Robots cannot function without some amount of human participation.
    c. Robots came about because artists and writers dreamed of a better future.
4. In "Robots Long Ago," the author states that early mechanical technology inspired scientists to "dream big in order to develop new ideas for robot inventions." Explain how this idea is connected to the descriptions of robots in "Robot Farmers."

    Support your response with details from the passage. *Write your response on a separate sheet of paper.*
5. **Writing Task:** Please write on a separate sheet of paper and attach it to your packet work.

You have read about how robots can assist humans in doing jobs, and even replace them at doing certain tasks.

How else might robots contribute to the way we live our lives? Think about ideas, facts, definitions, details, and other information and examples you want to use. Think about how you will introduce your topic and what the main topic will be for each paragraph. Be sure to identify the sources by title or number when using details or facts directly from the sources.

Write an **informational essay** about a job or task you think a robot could do. What features would the robot need? What might it be made of? How would it make humans' jobs lives easier?

Be sure to use information from BOTH passages. Write your answer on a separate sheet of paper.

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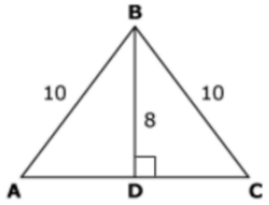
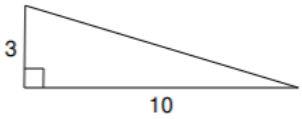
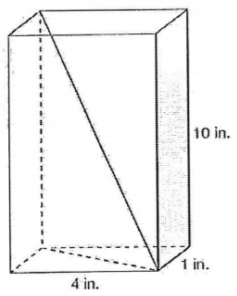
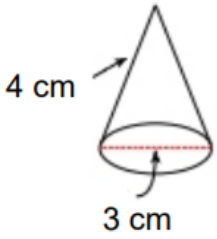
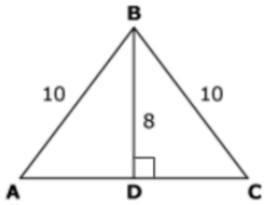
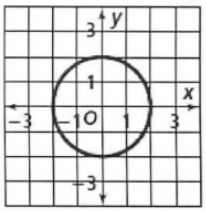
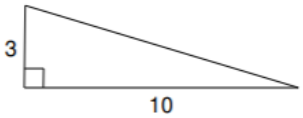
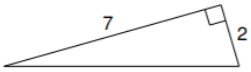
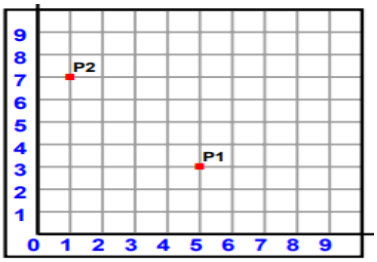
8th Grade Math Power Standards Review

Solve. $2x+12=18$	Solve. $2/3(n)=12$	Solve. $3/4(x)=21$
Add. $8x10^7 + 5x10^5$	Subtract. $8x10^7 - 5x10^5$	Distribute and Simplify. $4(2x+5z-7x)$
Divide. $8x10^7/4x10^5$	Multiply. $8x10^7 * 5x10^5$	Distribute and Simplify. $3(4x-3) - 3(2x+8)$
$R^2=64$ $P^2=196$ $M^2=16$	$P^2=121$ $M^2=400$ $B^2=256$	Answer the following: Line segment AC? 
Given the equation, determine if it is infinite/one/no solution. Write under equation. $4x+12=3x-12$	Given the equation, determine if it is infinite/one/no solution. Write under equation. $2(2x-6) = 4x+6$	Given the equation, determine if it is infinite/one/no solution. Write under equation. $5w+12-w = 4(w+3)$

Name: _____ **Teacher:** _____ **Period:** _____

Find the missing side length:  	Find the diagonal:  	Find the volume: 
Answer the following: Line segment AC?  	Function or Non-Function  	Function or Non-Function {(-2, -1), (0, 3), (5, 4), (-2, 3)}
Estimate the Following: List the perfect squares and consecutive integers √88 PS: CI: E:	Estimate the Following: List the perfect squares and consecutive integers √119 PS: CI: E:	Estimate the Following: List the perfect squares and consecutive integers √207 PS: CI: E:
Find the missing side length:  	Find the missing side length:  	Find the distance between two points: 

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HS Physical Science Power Standards Review

Unit 1 Review

1. Draw a model of each of the four states of matter.

2. Describe the particle motion and arrangement of each of the four states of matter.

3. As thermal energy is increased/absorbed, how will particle motion and arrangement be affected?

4. As thermal energy is decreased/released, how will particle motion and arrangement be affected?

5. Rank the states of matter from highest amount of thermal energy to lowest amount of thermal energy.

6. Rank the states of matter from slowest to fastest particle speed.

7. Fill in the PTV chart below.

Constant	Increase/Decrease	Increase/Decrease
Pressure	Increase Temperature	
Temperature	Decrease Volume	
Volume	Decrease Pressure	
Temperature	Increase Volume	
Volume	Increase Temperature	

Unit 2 Review

8. Which substance has the highest specific heat?

9. Which substance has the lowest specific heat?

10. Identify which substance will heat up the fastest if all samples are the same mass and they receive the same amount of thermal energy.
11. Conduction, Convection or Radiation: Heat we feel from the sun.

_____

Specific Heats of Selected Materials	
Material	**C (J/kg·K)**
Aluminum	897
Concrete	850
Diamond	509
Glass	840
Helium	5193
Water	4181

Name: _____ **Teacher:** _____ **Period:** _____

12. Conduction, Convection or Radiation: The heat you feel when you touch a hot stove. _____
13. Conduction, Convection or Radiation: Heat you feel when you put your hands above a fire. _____
14. Conduction, Convection or Radiation: A spoon is hot after leaving it on a pot that was on the stove. _____
15. Conduction, Convection or Radiation: This is responsible for making macaroni rise and fall in a pot on the stove. _____
16. Conduction, Convection or Radiation: The heat a snake feels from the heat lamp above him. _____
17. Conduction, Convection or Radiation: Transfer of heat by the actual movement of the warmed matter (i.e. gas or liquid). _____

Unit 3 Review

18. Carbon-14 has a half-life of 5730 years. A bone originally contained 1000 grams of Carbon-14. After, 5730 years, how much Carbon-14 remains?

19. Iron-59 has a half-life of 45 days. The original sample of Iron-59 had a mass of 2000 grams. How much of the original sample remains after 90 days?

20. If the half-life of uranium-232 is 70 years, how many half lives will it take for 10g of it to be reduced to 1.25 g?

21. A sample of Uranium-235 will decay to one-sixteenth (1/16) its original amount after 2000 years. What is the half-life of Uranium-235?

22. List the charge each of the following Groups would have if their elements formed ions: Group 1, Group 2, Group 13, Group 15, Group 16, Group 17

23. What are the 3 main sections of the Periodic Table?

24. What are the 3 subatomic particles of an atom? Where are they located? What are their charges?

25. List a property from each of the family groups on the Periodic Table.

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8th Grade Science Power Standards Review

Part One – Answer the following questions:

1. The smallest unit of matter that cannot be broken down by ordinary means is the _____.
2. Neutrons have a _____ charge.
3. Electrons have a _____ charge.
4. Protons have a _____ charge.
5. Electrons are organized in _____ around the nucleus.
6. Where in the atom are the protons found? _____
7. Where in the atom are the neutrons found? _____
8. Using the Periodic Table, find the number of protons in one aluminum atom. _____
9. Using the Periodic Table, find the number of protons in one gold atom. _____
10. Using the Periodic Table, find the number of neutrons in one oxygen atom. _____
11. Using the Periodic Table, find the number of neutrons in one sulfur atom. _____
12. Using the Periodic Table, find the atomic number of chlorine. _____
13. Using the Periodic Table, find the atomic number of calcium. _____
14. Using the Periodic Table, find the atomic mass of potassium. _____
15. Using the Periodic Table, find the atomic mass of phosphorous. _____
16. Using the Periodic Table, find the symbol for the element beryllium. _____
17. Using the Periodic Table, find the symbol for the element argon. _____
18. Using the Periodic Table, find the element whose symbol is “Na”. _____

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19. Using the Periodic Table, find the element whose symbol is "Cu". _____

20. About how many elements are there? _____

21. Is "Fe_2O_3" an element symbol? Yes/No
    How can you tell? _____

22. Is "HE" an element symbol? Yes/No
    How can you tell? _____

23. Is "Mg" an element symbol? Yes/No
    How can you tell? _____

24. An element's atomic number shows the number of _____ in the nucleus.

25. An element's atomic mass is the number of _____ PLUS the number of _____ in the nucleus of one atom of that element.

26. What is a "family" or a "group" on the periodic table? _____

27. What types of things does every element in a family have in common?_____

    _____

28. On the periodic table, what is a "period"?_____

29. The periodic table is organized so that each elements _____ can be predicted by its _____ on the table.

Part Two: Follow these step-by-step directions to complete this section:

Step 1: Complete the squares for each element by adding the atomic number, name, and atomic mass.
Step 2: Determine the number of protons, neutrons, and electrons in each element.
Step 3: Create a diagram for each element, placing electrons, neutrons and protons where they each belong. (For protons and neutrons you can just write, for example, "5p, 6n" in the nucleus.)

24. (4 points)

Boron

Number of Protons = _____

Number of Neutrons = _____

25. (4 points)

Nitrogen

Number of Protons = _____

Number of Neutrons = _____

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8th Grade Social Studies Power Standard Review

THE COLONY OF GEORGIA

SS8H2 The student will analyze the colonial period of Georgia's history.
a. Explain the importance of James Oglethorpe, the Charter of 1732, reasons for settlement (charity, economics, and defense), Tomochichi, Mary Musgrove, and the city of Savannah.
b. Evaluate the Trustee Period of Georgia's colonial history, emphasizing the role of the Salzburgers, Highland Scots, malcontents, and the Spanish threat from Florida.
c. Explain the development of Georgia as a royal colony with regard to land ownership, slavery, government, and the impact of the royal governors.

_____ was an English man who was concerned with helping _____ people. During this time period, if you could not pay your _____, you went to _____. Oglethorpe had an architect friend, Robert Castell, who died in debtor's prison. This inspired him to help _____. He asked King _____ II (the colony is named after him), for permission to start a new _____. The king granted permission, and the colony of _____ was established with its charter in _____.

The colony of Georgia was settled for three main reasons. These are:

_____ – _____ wanted Georgia to be a colony to help _____ and poor (although no _____ went to the colony).

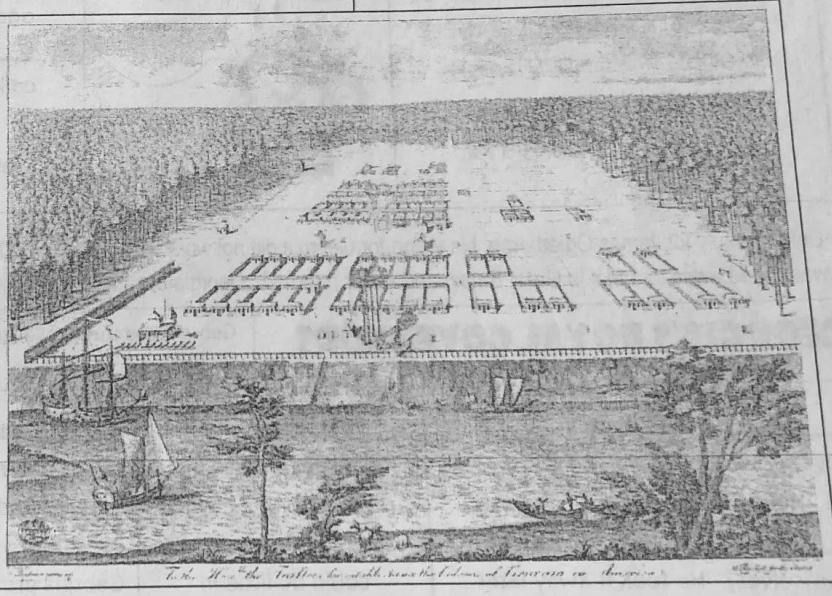
_____ – King _____ II wanted Georgia to produce rice, silk (through mulberry trees) and vineyards for wine.

_____ –Georgia was supposed to serve as a _____ (protective _____) between the rest of the British colonies and Spanish _____.

_____ sailed with the first Georgians on the ship *Ann* and landed near modern-day _____ in February of 1733. Through an interpreter, _____, Oglethorpe asked the local chief, _____, to settle there. The chief allowed them to _____.

Two Native Americans helped _____ settle peacefully on the colony of Georgia and establish the city of _____. These two are _____, who was the chief of the _____ (Creek) Indians. The chief allowed Oglethorpe to settle peacefully on Yamacraw Bluff (which later became _____). _____, who was half-Creek, ran an important trading post. She was also a _____ for Oglethorpe and _____.

The colony of Georgia became successful because of these two and their willingness to keep relations _____.



The _____ settled on an area called _____ and built Georgia's first city, _____. The design for _____ was created by Robert Castell, Oglethrope's friend who died in _____ prison.

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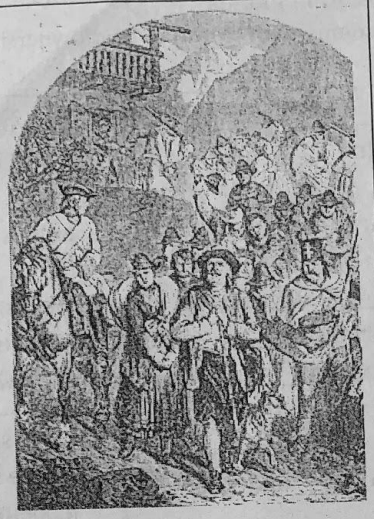
THE COLONY OF GEORGIA WAS AN EXPERIMENT FROM THE BEGINNING.

Instead of being a _____ colony (like the other 12 colonies) Georgia's _____ was created by _____ and the king with different regulations (rules). Georgia was controlled by a group of **21** _____ (_____ are people responsible for others), and was called a _____ _____. **Unlike a _____ colony, Georgia was not allowed to have _____, _____, _____, or _____.** Georgia's British colonists were soon joined by other ethnic groups, such as the _____ and Highland _____.

The _____ (pictured right) were a group of _____-speaking _____ (meaning they were not _____) from modern-day Salzburg, Austria. These people were being treated poorly because of their faith.

They came to Georgia seeking _____ _____ and Oglethorpe allowed them to settle. First they settled in _____, then in **New** _____ (because _____ was too _____).



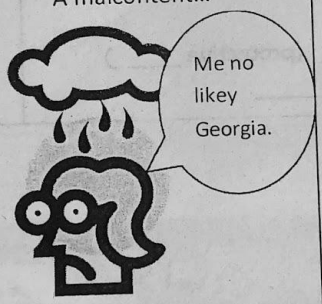
_____ *Scot*

_____

The _____ _____ came to Georgia seeking land and freedom. They came from _____ and they were Protestants. They were against _____, and liked Georgia's charter. **They were skilled** _____ and Oglethorpe allowed them to create a settlement called _____. They proved to be very helpful when Georgia fought against the _____.

Some people did not like the colony of Georgia and its rules. They wanted Georgia to be a like the _____ colonies and not a _____ colony. Most of these colonists were British. They were called the _____ (_____ means "not happy.")

A malcontent...



One of the reasons Georgia was settled was for _____. It was to protect the other colonies from the _____, who were south in Florida. The Georgia colonists fought against the Spanish in a war called the _____, and in a battle in Georgia called the _____. After the war, the _____ eventually left Georgia for good.

Unfortunately for James Oglethorpe, his vision for Georgia did not work out as planned. During the war with the Spanish, Oglethorpe was called away to a trial in Great Britain and never returned. Georgia became a royal colony when the **trustee period ended in 1752.**

GEORGIA'S ROYAL GOVERNORS

Georgia had three royal governors after it became a royal colony:

1. 2. 3.

_____ was Georgia's _____ royal governor (sorry...no picture). He gave the Georgia colonists _____ (the ability to govern themselves). He took it away later on, and then he also tried to move Savannah to another location. He was removed from his position.

_____ was the _____ royal governor. Ellis regulated _____ with Native Americans, but could do little in Georgia because he was so _____. He had to leave Georgia due to illness.

_____ was Georgia's _____ royal governor, and the most popular until the _____. He served for 16 years. He helped Georgia grow _____ and he also increased the _____ of the colony. Georgia's _____ population expanded during this time.