7th GRADE NTI PACKET #26-30

Name: _____

Team: _____

Dear 7th Grade Maroon Parents & Guardians/ Students,

We can't thank you enough for the support, encouragement, and communication from all parents/guardians and students. We, as teachers, can't express how much we miss our students and how we are here for you all whenever you need us. Please feel free to reach out as we charter new territory with NTI Packets #26-30. We are now accepting completed packets in the Front Foyer of Harrison County Middle School. The front foyer is open 24/7.

TEACHER COMMUNICATION- MAROON

We want to highly encourage email during NTI Days. Students can use their google log in and log into google mail to communicate with their teachers.

- Language Arts/ Miranda Johnson- miranda.johnson@harrison.kyschools.us
- Math/ Melinda Persinger- melinda.persinger@harrison.kyschools.us
- Science/ Jaime Chapman- jaime.chapman@harrison.kyschools.us
- Social Studies/ Whitney Criswell- whitney.criswell@harrison.kyschools.us
- Special Education/Taylor Hill- taylor.hill@harrison.kyschools.us

Students can also use the Remind 101 App to communicate to teachers. You can send a text to 81010 and text "@7mharrison" to be added to the Remind 101 reminders. If you download the free app, you can send text messages to teachers for communication. You can also call Harrison County Middle School at (859) 234-7124

TEACHER COMMUNICATION- GOLD

We want to highly encourage email during NTI Days. Students can use their google log in and log into google mail to communicate with their teachers.

- Language Arts/ Carla Fuller- carla.fuller@harrison.kyschools.us
- Math/ Roni Long- roni.long@harrison.kyschools.us
- Science/ Jean Jones- jean.jones@harrison.kyschools.us
- Social Studies/ Jenny Hyatt- jenny.hyatt@harrison.kyschools.us
- Special Education/Carline Ford- carline.ford@harrison.kyschools.us

"WE MISS YOU!"- From: ALL 7th Grade Teachers

7th Grade Days 26-30 Social Studies
NTI Assignments

Days 26-30

This week we will be working on a Mini-DBQ (Document-Based Question) that will have you evaluate the greatest achievement of the Mayan Empire. Each day you will read a document and then answer questions about the document. This will be your research for Friday's assignment.

Day 26: Read **Document A: The Mayan Trade Network**. Then read the questions. Go back for a second read of the document and actively search for answers. Highlight or underline important parts. Answer questions 1-5 in complete sentences. Your work should be completed on notebook paper.

Day 27: Today you will move on to **Document B: Building Cities**. Again, read and answer questions 1-5 as you did yesterday. Remember to restate and write your answers in complete sentences. Complete your answers on notebook paper.

Day 28: Explore **Document C: The Mayan Number System**. Make sure to read the captions of the artifacts, as there is lots of good information found there as well. Once you have read the document, answer questions 1-5 with complete sentences on notebook paper.

Day 29: **Document D: The Mayan Calendar** is today's assignment. Investigate what the author of the document is trying to convey about the Mayans and this achievement. Complete questions 1-5 in restated sentences on notebook paper.

Day 30: Read the background essay, **"The Mayans: What was Their Greatest Achievement?"** Think like a historian and see if this essay corroborates (backs up) the other documents you have analyzed this week. Gather any other facts that will help you support a claim from this document. Once you have all of your information ready, write a paragraph that answers the following question: What was the greatest achievement of the Mayan Empire? Your claim should clearly name one Mayan achievement. Please make sure that you follow the steps of a well-crafted paragraph where you use RACE to make a claim, support the claim with evidence, explain your evidence, and restate your claim.

Additional Resources to Enhance your Learning:

*Check Mrs. Criswell's Google Classroom or Class Website (https://sites.google.com/harrison.kyschools.us/criswell/) for additional resources throughout the next couple of weeks.
*Students on either team can access NTI resources, help, and communicate using the 7th Grade Social Studies NTI Google Classroom (classroom.google.com). The code is xxedzpd.

You can access BrainPop videos on each civilization on Mrs. Criswell's Google Classroom or by the links below.
Use the following login information:
Username: hcmscolts
Password: harrison20

Video 1- https://www.brainpop.com/socialstudies/ancientcultures/mayacivilization/

Maya-

1. Video with fascinating facts about the Maya- https://www.youtube.com/watch?v=3odJDGKPPTU
2. Video about the Mayan sacred ball game- https://vimeo.com/88365226

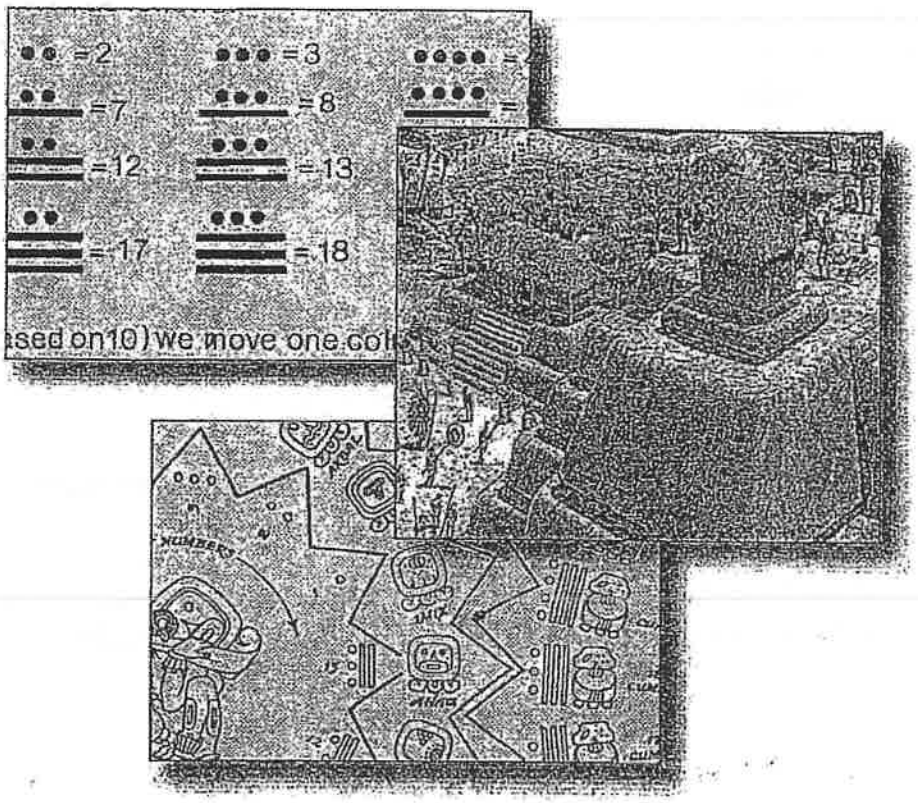
Digital Interactives with facts about the cultures of the ancient American peoples.
https://carlos.emory.edu/htdocs/ODYSSEY/AA/aafront.htm

Learn more about these three ancient civilizations with this interactive presentation-
https://www.sutori.com/story/aztec-inca-maya--mD55p7qumfe14PpZVvE2kgK1

student copy

The Maya: What Was Their Most Remarkable Achievement?

EV



Overview: The Maya flourished over a thousand years ago in the rainforests of Mesoamerica. Their intellectual and technical mastery in many areas has intrigued and amazed those who have studied them. This Mini-Q asks you to examine the Mayan civilization and decide which of its accomplishments was the most impressive.

The Documents:

Document A: The Mayan Trade Network (map)

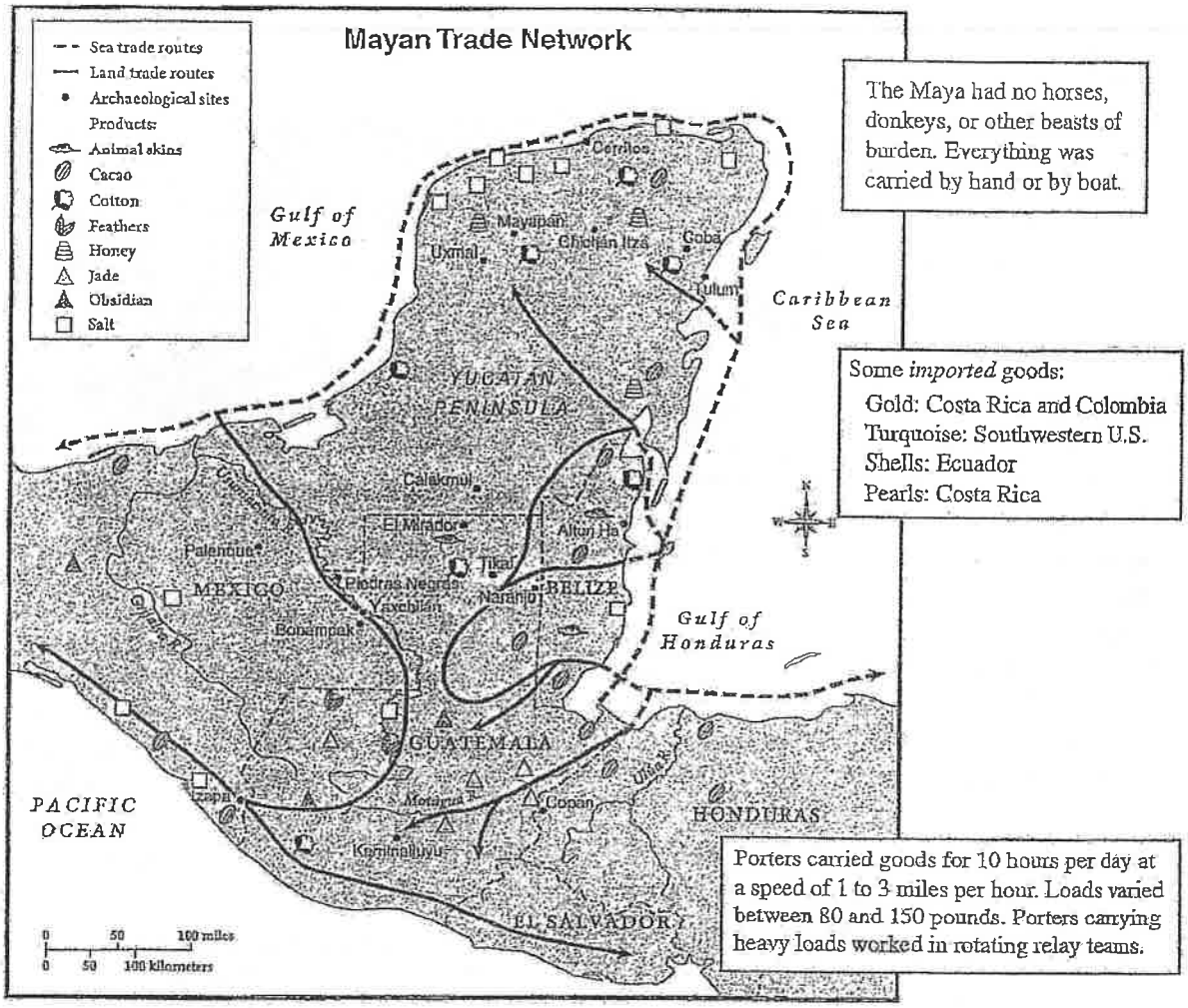
Document B: Building Cities

Document C: The Mayan Number System

Document D: The Mayan Calendar

Document A

Source: Map created from various sources.



Document Analysis

1. Where did most of the salt come from? What reason explains that?

2. We know that the Maya widely cultivated maize, or corn. Why do you suppose it is not listed as a trade item on this map?

3. If the people of Cerritos traded with the people of Mayapán, what goods might they exchange? How about the people of Copán and the people of El Mirador?

4. How would the trade shown on this map improve life for people across the Mayan region?

5. Using at least two measuring sticks – scale, genius, physical effort and significance – describe what is remarkable about the Mayan trade network.

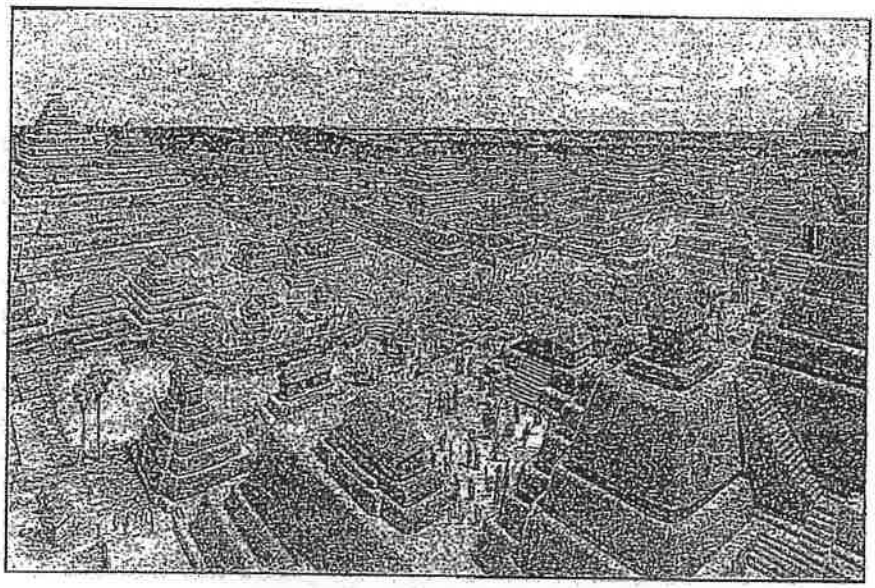
Document B

Source: Lynn V. Foster, *Handbook to Life in the Ancient Maya World*, Facts on File, Inc., New York, NY, 2002.

Archaeologists have argued that civilization requires urban centers and that the measure of a civilization can be made by the architecture of its cities.... Based on its architectural remains, Maya civilization ranks as one of the great pre-industrial cultures of the world.

... By 1975, archaeologists had catalogued more than 2,500 Maya locations of varying size and date with some stone construction. Numerous cities with populations in the tens of thousands have left a monumental record in the preconquest* era.

... Masonry architecture required central organization, craft specialization, and political power to command a large workforce.... The Maya were able to organize the labor ... of masons, plasterers, and supervising architects to build and maintain their cities of immense stone pyramids, stone palaces, and temples, ball courts, and other ritual buildings. For the single home of a Copán** nobleman, it has been estimated that at least 80 to 130 workers would have been employed fulltime to finish it in two to three months. The densest urban core of a city such as Tikal*** covered six square kilometers (more than two square miles), so the number of workers involved in construction and reconstruction must have been immense.



The Mayan City of El Mirador

*Before the Spanish arrived (around 1524 CE)
**Mayan city of about 25,000 in Honduras
***One of largest Mayan cities, with population of 70,000

Document Analysis

1. What is a pre-industrial culture?

2. What was the estimated population of ancient Copán? Of ancient Tikal?

3. What does the ability to build great buildings out of stone tell you about Mayan political power? Explain.

4. Which criterion of "remarkableness" is best demonstrated by the drawing of El Mirador? Explain.

5. Using at least two of our working criteria – scale, genius, effort, and significance – what was remarkable about Mayan architecture?

Document C

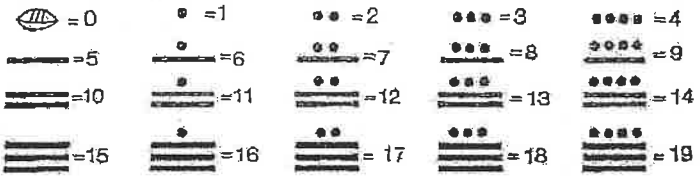
Source: Ralph Whitlock, *Everyday Life of the Maya*, Hippocrene Books, 1987.

Note: We write numbers using a system in which the value of each digit depends on its position within the number. The digit furthest to the right stands for ones, the next digit to the left stands for tens, and so on. This type of system cannot work without a symbol for zero to show when a position is empty. The Maya used a positional system based on the number 20, rather than the number 10, and they were one of the first cultures in the world to develop the idea of the zero.

THE MAYAN NUMBER SYSTEM

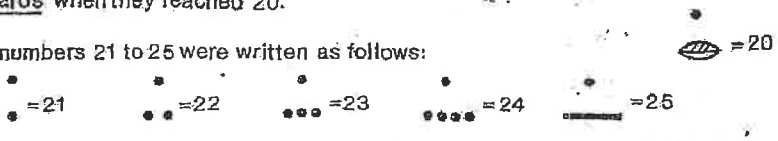
The Maya used only three signs: the dot, • (1), the bar, ▬ (5), and the shell, 🐚 (0).

The first nineteen numerals were written as follows:

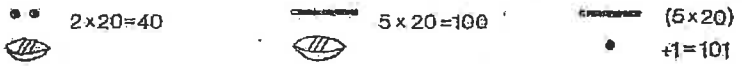


Just as with our decimal system (based on 10) we move one column to the left when we reach 10, so with the Mayan vigesimal system (based on 20) they moved one rung upwards when they reached 20.

The numbers 21 to 25 were written as follows:



Some examples:



In our decimal system, we move a further column to the left when we reach 10×10=100. In the same way the Maya moved a further rung upwards (to make three rungs) when they reached 20×20=400.

Document Analysis

1. On what number was the Mayan number system based?

2. What symbol did the Maya use for zero? What symbols did they use for one and for five?

3. How did the Maya write: a. zero b. 7 c. 26 d. 60 e. 401?

4. Why is it important to have a symbol for zero?

5. Using at least two measuring sticks – scale, genius, effort and significance – describe what was remarkable about the Mayan system of mathematics.

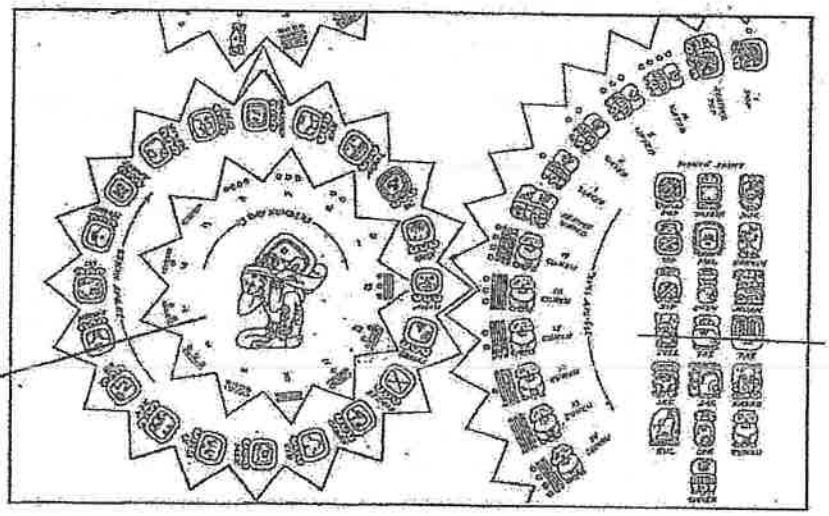
Document D

Source: Barbara L. Beck, *The Ancient Maya*, Franklin Watts, 1983.

The Maya had two main calendars. One was the sacred or ritual calendar, called tzolkin. It was a cycle of 260 days, and it marked the ceremonial life of the people. They also had a civil calendar, based on the solar year. This calendar had eighteen months of twenty days each, adding up to 360 days in all. To this were added five unlucky days, called Uayeb, to make a total of 365 days as in our calendar. This solar calendar was called haab.... The two calendar cycles were used together. They were like two cogged wheels, revolving alongside each other, with the cogs (days) meshing as the wheels turned.

... The Maya ... developed the calendar further than any other New World people, and their calendar was more accurate than any other of their time. They were masters of the science of time measurement .... Observatories were built, at Chichén Itzá and other cities, to use in studying the movements of the sun and the moon, planets such as Venus and Mars, and the stars. The Maya priest-astronomers collected information over many years in order to make their predictions and develop their systems. So great was their knowledge that they could predict eclipses of the moon....

Source:
Eric S. Thompson, *The Rise and Fall of Maya Civilization*, University of Oklahoma Press, 1973.



Note: In addition to their ritual and solar calendars, the Maya kept a long count cycle that began in 3114 BCE and was scheduled to end 5,200 years later on December 20, 2012.

Document Analysis

1. What were the names of the three Mayan calendars? (Hint: See note also.)

2. What probably explains why the Maya used 20-day segments in their ritual calendar and 20-day months in their solar calendar?

3. Which calendar was used to keep track of religious days? Explain.

4. Which calendar would have been most useful in predicting the beginning of rainy seasons? Why?

5. Using at least one measuring stick – scale, genius, effort, or significance – describe what was remarkable about the Maya's development of their calendar.

The Maya: What Was Their Most Remarkable Achievement?

History is rich with stories of great human achievement. Consider the Egyptians, who built the pyramids; the Greeks, who invented and practiced democracy; the Chinese, who conceived and constructed the Great Wall. In the Western Hemisphere, no early culture was more remarkable than the Maya.

Mesoamerica is that part of modern-day Central America that includes southern Mexico, Belize, Guatemala, and Honduras. This region has been the Mayan home for 3,000 years. Until 500 years ago, the Maya lived in isolation from the rest of the world, practicing **slash-and-burn agriculture** and raising crops such as corn, beans, and squash. They also hunted animals in the surrounding rainforest. As their culture developed, especially during the **classic** period of 250 to 900 CE, the Maya built magnificent cities with stone plazas, royal palaces, ball courts, and temple-topped pyramids. Unfortunately, Mayan **city-states** often warred against each other, and alliances constantly shifted. As a result, the Mayan people were never unified under a single government the way many other ancient societies were.

Despite this conflict, the various Mayan groups shared cultural similarities. They used a common writing system and organized their lives around a complex calendar that tracked religious ceremonies honoring the many Mayan gods. In one of their most important **rituals**, religious and political leaders – including the king – would pierce themselves with stone knives and offer their blood to feed the gods. Like the Aztecs, who flourished centuries later, the Maya practiced human sacrifice and torture as a way to keep the gods satisfied.

Sometime around the year 900 CE, the Maya abandoned many of their cities and moved to the highlands of modern-day Central America. Scholars still don't know why this happened; it may have been because of overpopulation, overuse of the land, disease, or warfare. Whatever the reason, jungle soon covered the thousands of Mayan buildings and farms left behind. A great society appeared to go silent. When the Spanish arrived 600 years later, they did make some effort to preserve the surviving Mayan languages in dictionaries, but did little else to save the ancient culture.

It is important to say that the people never did disappear. About five million Mayans still live in Mesoamerica, speaking more than two dozen dialects of the Mayan language and practicing some of the old ways. Though the ancient Maya long remained a nearly-forgotten, mysterious people, in more recent years ignorance and neglect of the culture have changed to keen interest. Archaeologists have done much to find and uncover ancient temples and tombs, farmlands and town sites. Artists and experts in ancient language have managed to crack the code of Mayan writing. Armed with their new ability to read ancient **glyphs**, historians are bringing the lost Maya to life. For so long a mystery, the ancient Maya are emerging as a real, full-blooded people.

What follows are several documents showing Mayan accomplishment. To measure these accomplishments, and to help make your thinking more precise, pay special attention to four criteria for judging remarkableness:

Scale: how big was the accomplishment?
Genius: how brilliant or cutting-edge was it?
Effort: how hard was it physically or intellectually?
Significance: what was its impact on society?

Then, using these criteria, answer the question posed by this Mini-Q: *The Maya: What was their most remarkable achievement?*

Student Mini-Q Lined Paper

EV

7th Grade Science Resources for NTI #26-30

7th Grade Science Students,

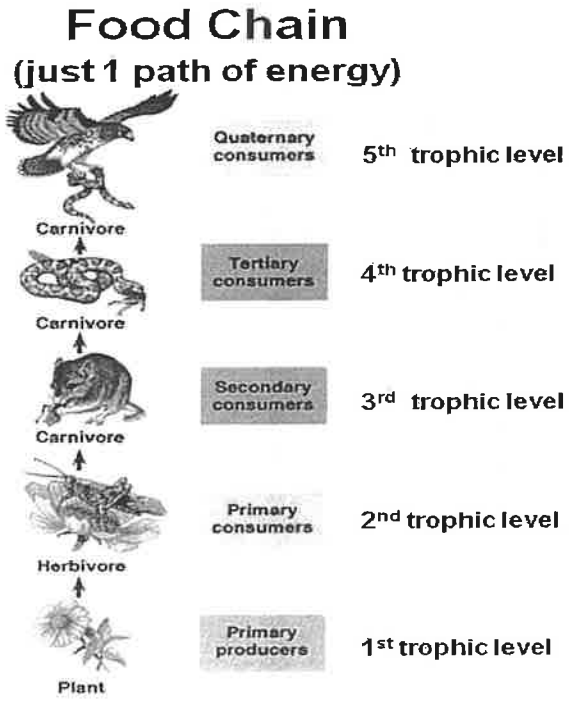
We have made you a "playlist" of videos you can use as a resource for our unit of review Interactions of Living Things. This unit is about ecology, abiotic/biotic factors, ecosystems, populations, food webs, and food chains. This is content from both 6th and 7th grade combined. WE MISS YOU ALL SO MUCH! We hope to see you very soon!

YOUTUBE VIDEOS:

Directions- Please go to youtube, and type in the titles of each video.

- Ecological Relationships
  - https://www.youtube.com/watch?v=rNjPI84sApQ
- Food Webs and Energy Pyramids: Bedrocks of Biodiversity
  - https://www.youtube.com/watch?v=-oVavgmveyY
- Population Ecology: The Texas Mosquito Mystery - Crash Course Ecology #2
  - https://www.youtube.com/watch?v=RBOsqmBQBQk

DIAGRAMS:



The *arrow* points to the eater and shows the transfer of energy.

Content Outline for Teaching

Interactions of Living Things

Section 1 The Environment

Underlined words and phrases are to be filled in by students on the Note-taking Worksheet.

A. The study of interactions among organisms and their environment is called ecology.

B. Abiotic factors—nonliving parts of the environment

1. Water is needed by all organisms for cell and life processes.
2. Light and temperature determine where plants and animals can live.
3. Air gases such as oxygen, nitrogen, and carbon dioxide are needed by most species.
4. Soil types determine what plants and animals can live in an area.

C. Biotic factors—living or once-living parts of the environment

1. All members of one species living together form a **population**.
2. Communities are groups of populations that interact with each other in a given area.
3. The biotic community and its abiotic factors make up an **ecosystem**.
4. Biomes are large areas containing several ecosystems.
5. The **biosphere** includes the top layer of Earth's crust, all waters, and the atmosphere.

DISCUSSION QUESTION:
What abiotic factors affect living things? *Water, light, temperature, air, and soil*

Section 2 Interactions Among Living Organisms

A. Characteristics of populations

1. Size—number of individuals in a population
2. Number of individuals in a particular area is the **population density**.
3. Population spacing—how organisms are arranged in an area
   a. Evenly spaced—consistent distance between organisms
   b. Randomly spaced—individual location is independent of other individuals' locations
   c. Clumped spacing—organisms group together
4. A biotic or abiotic factor that restricts the size of a population is called a **limiting factor**.
5. Carrying capacity—the maximum population size that can live in an environment over time
6. Biotic potential—the size a population could reach if no limiting factors stopped its growth

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Content Outline for Teaching (continued)

B. Symbiosis—close interactions between species

1. When both species benefit, the relationship is termed mutualism.
2. Commensalism is a form of symbiosis that helps one species but has no effect on the other.
3. When one species is harmed and the other benefits, the symbiosis is termed parasitism.
4. Predation—occurs when one species hunts, kills, and eats another
5. **Habitat**—where an organism lives
6. Niche—an organism's function in its ecosystem

DISCUSSION QUESTION:
What are the three kinds of symbiosis? *Mutualism, in which both organisms benefit; commensalism, in which one benefits and one is unaffected; parasitism, in which one is harmed and one benefits*

Section 3 Matter and Energy

A. Energy—moves through a community as producers and consumers interact

1. Food chain—how food energy moves from one organism to another
2. **Food webs**—overlapping food chains to better show the way energy moves through an ecosystem
3. Ecological pyramids—bottom layer of pyramid represents ecosystem producers; top layers represent consumers
4. Energy pyramid—compares the energy available at each level of a food chain; bottom levels have more energy than top levels

B. Cycles of Matter—matter that makes up living organisms, such as water, carbon, and nitrogen, are recycled through the environment

1. Processes of evaporation, condensation, and precipitation make up the water cycle.
2. Carbon, nitrogen, phosphorus, sulfur, and other elements needed by living organisms move through Earth's biosphere.

DISCUSSION QUESTION:
How is a food chain different from a food web? *A food chain is a simple illustration of showing how food energy moves; a food web better illustrates more complex, overlapping interrelationships of energy in an ecosystem.*

Name Date Class

Directed Reading for Content Mastery

Key Terms
Interactions of Living Things

Directions: *Match the terms in Column II with the definitions in Column I. Write the letter of the correct term in the blank at the left.*

Column I	Column II
_____ 1. factors that are the living or once-living parts of the environment	a. symbiosis
_____ 2. where an organism lives	b. ecology
_____ 3. all communities in an area and the abiotic factors that affect them	c. community
_____ 4. any close interaction between two or more different species	d. abiotic
_____ 5. role of an organism in the ecosystem	e. population
_____ 6. factors that are the nonliving parts of the environment	f. food chain
_____ 7. populations of different species that interact in some way	g. niche
_____ 8. factor that affects the number of individuals in a population	h. biotic
_____ 9. all the members of one species that live in the same place at the same time	i. biosphere
_____ 10. number of individuals in a population that occupy a definite area	j. ecosystem
_____ 11. study of the interactions among organisms and their environment	k. habitat
_____ 12. way of showing how energy in the form of food passes from one organism to another	l. population density
_____ 13. part of Earth that supports life	m. limiting factor

Meeting Individual Needs

Name Date Class

Directed Reading for Content Mastery

Section 3 ▪ Matter and Energy

Directions: *Circle the terms that correctly complete each sentence below.*

1. When one organism eats another, energy in the form of food is transferred from the (eaten/eater) to the (eaten/eater).
2. In the carbon cycle, plants remove carbon from the air and use it to make (carbohydrates/water).
3. At each level of a food chain, organisms lose energy as (sunlight/heat). Energy is renewed constantly by (food/sunlight).
4. Organisms use (nitrogen/carbon) to make proteins.
5. The law of conservation of mass states that (energy/matter) is never lost or gained.

Directions: *Complete the paragraphs using the terms listed below.*

food chain **decomposers** **consumers** **producers** **food web**

Plants are 6. _____; they capture and use energy from the Sun and use it to produce carbohydrates. Animals are 7. _____; they obtain energy when they feed on producers or other animals. Mushrooms are 8. _____; they obtain energy as they break down the remains of organisms. This movement of energy through a community is known as a 9. _____ which, in turn, combines with others like it to form a 10. _____.

SECTION 1 Enrichment

Growing from the Ashes

At 8:32 A.M. on May 18, 1980, Mount St. Helens, a volcano in the state of Washington, erupted. First an earthquake collapsed the north side of the mountain, creating a landslide that filled 60 square km of a nearby river valley to a depth of 46 m. The landslide released a blast of superheated gas and rock that traveled from 354 to 1078 km per hour past the landslide. Trees were knocked down for 24 km. The top 396 m of the mountain was blown away. A river of foaming gas and rock as hot as 704°C flowed out of the crater. It destroyed everything in its path as it spread over a fan-shaped area 8 km long. Melted ice, boulders, and soil ran down the sides of the mountain.

National Volcanic Monument

In 1982, Congress set aside 445 km^2 of the area as the Mount St. Helens National Volcanic Monument to provide a giant laboratory for scientists to study how nature recovers without human interference. The lessons learned by these scientists have prompted them to reconsider long-held ideas about how nature renews itself.

In the past, it was thought that a large-scale disturbance, such as the blast of a volcano, destroyed all life in the area. Scientists believed that forests recovered after natural disasters when organisms came in from outside the damaged area. Recovery, they thought, took place as various species of plants returned to the area.

Research at the Mount St. Helens National Volcanic Monument has shown that it doesn't have to happen that way. For example, soon after the explosion, one scientist discovered fungi still living under the ash. Trees such as the Pacific silver fir that were buried in snowdrifts or sheltered by slopes during the blast survived. Seeds of plants, such as the prairie lupine, also survived. Scientists now know that although species that come into the area are important to regeneration, those that are left behind are more important.

A New Beginning

Plants like the prairie lupine, along with the trunks and stems of fallen trees, were the starting points of the next ecosystem. The roots of the lupine contain bacteria that pull nitrogen out of the air, so they could grow in the ash instead of in dirt. And since lupines have tight roots that allow the plants to take over an area, by the time a plant died, its roots had gathered enough bodies of insects and bits of dirt to make humus for other plants to grow in. Dead trees provided perches for incoming birds. The birds' droppings contained seeds. The seeds fell in the shadow of the trees, which protected the seedlings from wind. Water dripped from the trunks into the soil. Peeling bark provided nutrients for plants. The forest began anew.

Twenty years after the explosions, scientists are studying how lessons learned at Mount St. Helens can be used to "jump start" areas disturbed by floods, fires, landslides or other natural disasters, or human activities such as mining and waste disposal.

1. What abiotic factors affected the recovery of the forest at Mt. St. Helens? What were the biotic factors?

2. What role could fungi have played in the mountain's recovery?

3. Were the prairie lupines a population or a community? What role did they play in the forest's recovery?

4. According to the selection, scientists are studying the lessons they learned at Mount St. Helens to "jump start" other areas that have been disturbed. How could these lessons help them do this?

SECTION 3 Reinforcement

Matter and Energy

Directions: *Find the mistakes in the statements below. Underline the incorrect word(s) and write the correct word on the line provided.*

1. Consumers capture and use energy from the Sun.

2. A series of overlapping food chains is called a food niche.

3. A model of energy transfer is an ecological biome.

4. A model of energy available in a predator chain is an energy pyramid.

5. At the top of the energy pyramid, energy is slightly reduced.

6. Photosynthesis involves the production of food and oxygen by bacteria using chemical compounds.

7. Molecules of water that encounter colder air temperatures speed up.

8. The movement of carbon through Earth's ecosystem is called the fixation cycle.

9. Nitrogen is used by organisms to make fats.

10. Nitrogen and carbon are used up by the processes of a biosphere.

11. Mushrooms are classified as producers.

12. When a carnivore eats a plant, it gains some of the plant's energy.

13. Producers take in energy from nitrogen.

III. Open-Ended Response

Answer the questions below. Use additional paper if needed.

1. In plant cells, how are chloroplasts and mitochondria related?

2. Which organelles are found in plant cells, but not in animal cells? Why?

Name: _____ Date: _____ Group: _____

I. Vocabulary Matching

Match the term in the box to the correct definition.

1. ____ Where photosynthesis takes place
2. ____ Selectively permeable organelle
3. ____ Control center of a cell
4. ____ An energy-producing organelle

A.	Cell membrane
B.	Nucleus
C.	Mitochondria
D.	Chloroplast

II. Identification

Use the clues provided to fill in the blanks.

Word Bank

cell membrane	cell wall	chloroplast	
mitochondria	nucleus	cytoplasm	vacuole

1. The _____ provides support and rigidity to cells, allowing plants to stand upright.
2. The organelle necessary for photosynthesis is the _____.
3. _____ is the thick, gelatinous liquid that surrounds most of the organelles within a cell.
4. The _____ contains the genetic material within a cell.

Name:_____ Date:_____ Group:_____

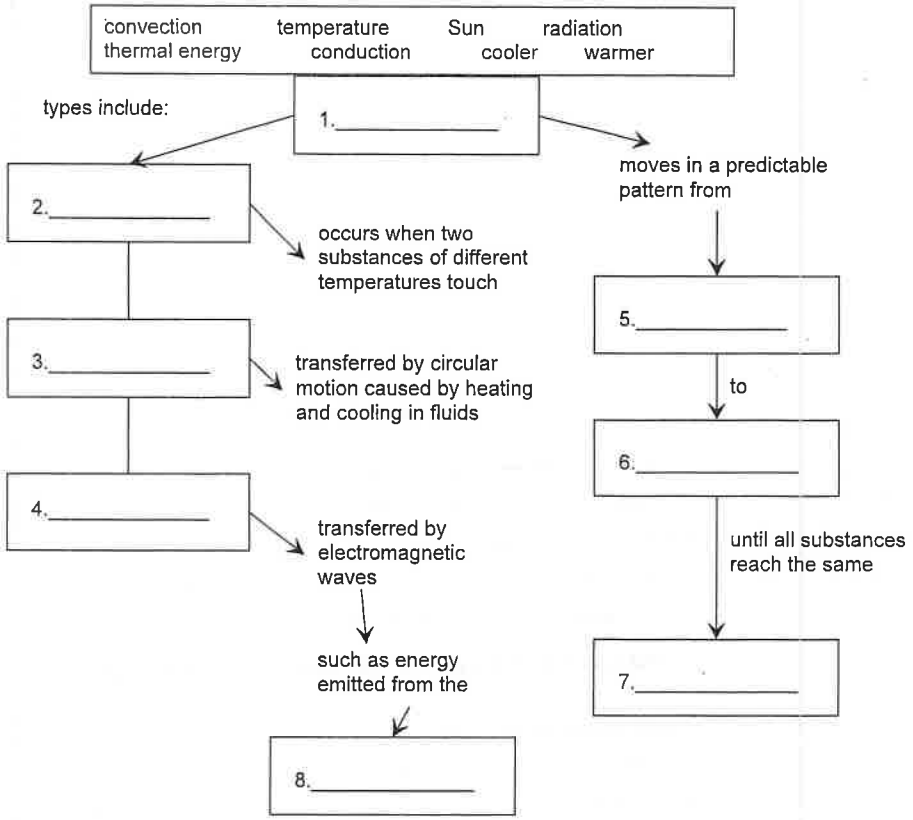
GUIDED PRACTICE

Graphic Organizer

Use the terms in the word bank to complete the graphic organizer below.

Word Bank

convection temperature Sun radiation thermal energy conduction cooler warmer



Concept Attainment Quiz

Name:_____ Date:_____ Group:_____

Part I: Vocabulary Matching

Match the term on the right to the correct definition on the left.

1. _____ A material that conducts heat well
2. _____ Thermal energy is transferred through empty space
3. _____ Thermal energy is transferred when two objects of different temperatures touch
4. _____ A material that does not conduct heat well
5. _____ The transfer of heat by the movement of a current

A. Conduction
B. Convection
C. Radiation
D. Conductor
E. Insulator

Part II: Identification

Use the clues provided to fill in the blanks.

Word Bank

insulator convection thermal energy less conductors temperature radiation

1. Feeling warmth on your hands when you hold them near a campfire is an example of _____.
2. When ice cubes melt in a glass of water, a current forms in which heat moves from particles with more heat to particles with _____ heat.
3. Materials such as metal and tile are good _____ because heat can easily transfer through them.
4. A cloth or silicone pot holder is useful to prevent burns while cooking because those materials are good _____.

Concept Attainment Quiz

Name: _____ Date: _____ Group: _____

I. Vocabulary Matching

Match the term in the box to the correct definition.

1. _____ The portion of the electromagnetic spectrum that humans can see
2. _____ Energy waves bouncing off an object
3. _____ All the possible energy levels of electromagnetic radiation
4. _____ When an energy wave is soaked or taken in
5. _____ When light passes through and object

A. Transmitted
B. Visible light waves
C. Absorbed
D. Electromagnetic spectrum
E. Reflected

II. Identification

Use the clues provided to fill in the blanks.

Word Bank

wide range	colors	reflected	slowed	visible spectrum

1. The color of an object humans see is actually the _____ of light reflected off the object.
2. Light of different wavelengths looks like different _____ to humans.
3. The electromagnetic spectrum contains a _____ of light waves. Some of them humans can't see and some of the waves are visible to humans.
4. When a rainbow appears in the sky, it is because light from the _____ passed through water vapor and _____ down, causing the colors in the visible spectrum to break apart.

Concept Attainment Quiz

Name: _____ Date: _____ Group: _____

I. Vocabulary Matching

Match the term on the right with the correct definition.

1. _____ The ability to take in light and different waves of energy.
2. _____ The ability to throw back or bounce back, but not absorb, light and different waves of energy.
3. _____ A grouping of all possible energy levels of electromagnetic radiation.
4. _____ When an energy wave bends as it passes from object to object.
5. _____ When light passes through and object

A. Transmission
B. Absorption
C. Refraction or scattering
D. Electromagnetic spectrum
E. Reflection

II. Identification

Use the clues provided to fill in the blanks.

Word Bank

intense	absorbed	electromagnetic waves	light	long

1. One of the ways _____ affect material is to cause a temperature change in materials.
2. Electromagnetic waves such as _____ can warm objects.
3. How much an object's temperature increases depends on how _____ the light waves are, how _____ the light shines on the object, and how much light is _____ by the material.

Concept Attainment Quiz

Name: _____ Date: _____ Group: _____

I. Vocabulary Matching

Match the term in the box to the correct definition.

1. ____ Where photosynthesis takes place
2. ____ Selectively permeable organelle
3. ____ Control center of a cell
4. ____ An energy-producing organelle

A.	Cell membrane
B.	Nucleus
C.	Mitochondria
D.	Chloroplast

II. Identification

Use the clues provided to fill in the blanks.

Word Bank

cell membrane	cell wall	chloroplast	
mitochondria	nucleus	cytoplasm	vacuole

1. The _____ provides support and rigidity to cells, allowing plants to stand upright.
2. The organelle necessary for photosynthesis is the _____.
3. _____ is the thick, gelatinous liquid that surrounds most of the organelles within a cell.
4. The _____ contains the genetic material within a cell.

Concept Attainment Quiz
Anatomy of a Cell
Structure and Function

III. Open-Ended Response

Answer the questions below. Use additional paper if needed.

1. In plant cells, how are chloroplasts and mitochondria related?

_____
_____
_____
_____
_____

2. Which organelles are found in plant cells, but not in animal cells? Why?

_____
_____
_____
_____
_____

Name _____ Date _____

8-5a Study Guide

NTI Day 26

Percent of Change

To find the percent of increase or decrease, first find the amount of the increase or decrease. Then find the ratio of that amount to the original amount and express it as a percent.

Example 1 **Two years ago a bicycle shop sold 675 bicycles. This year, 865 bicycles were sold. To the nearest percent, what is the percent of increase?**

First, find the amount of change: $865 - 675 = 190$.
Then, find the percent using 675 as the base.

$\frac{190}{675}$

$190 \div 675 = 0.281$

$28 \approx r$ The percent of change is 28%. increase

A percent of discount is a percent of decrease.

Find each percent of change. Round to the nearest percent. Identify as an increase or decrease.

1. original: \$10
   new: \$8

difference / original $\frac{2}{10} = .2$

I do!! 20% decrease

2. original: 85
   new: 112

$\frac{27}{85} = 0.3176..$

32% increase

3. original: 120
   new: 200

$\frac{80}{120} = 0.666..$

67% increase

4. original: \$75
   new: \$30

$\frac{45}{75} = 0.6$

60% decrease

5. original: \$4
   new: \$4.44

6. original: \$25
   new: \$30

7. original: \$400
   new: \$380

You do!!

8. I do!! Paul spent \$28.80 on a school jacket. If the same jacket sold for \$21.60 last semester, what is the percent of increase?

$\frac{7.20}{28.80} = .25$

25% increase

9. You do!! Last year, Les earned \$8.50 per hour working on a surveying job. This year he has been offered \$9.35 per hour for the same job. What is the percent of increase?

Complete the chart.

	Original Amount	New Amount	Amount of Change	Ratio	Percent of Change	Increase or Decrease
1.	$125	$150				
2.	$75	$45				
3.	$90	$99				
4.	$40	$42				
5.	$125	$90				
6.	$200	$250				
7.	$325	$351				
8.	$84	$21				
9.	$100	$130				
10.	$100	$70				
11.	$21	$14				
12.	$240	$440				

Find each percent of change. Round to the nearest percent. Identify as an increase or decrease

13. Find the percent of change in price if the old selling price was $20 and the new selling price is $15.

14. After a race, Tina's pulse rate rose from 70 beats per minute to 98 beats per minute. What is the percent of increase?

15. The DuBerrys bought a house for $125,000 three years ago. They sold the house this year for $150,000. What is the percent of increase in the price?

Name

NTI
Day 27

SALE ON CAMPING GEAR!

	Regular Price	Sale Price		Regular Price	Sale Price
Down sleeping bag	$149	$104.30	4-person tent	$249	$186.75
Gas stove	$ 58	$ 37.70	8-person tent	$367	$286.26
Lantern	$ 37	$ 29.60	Backpack	$ 73	$ 57.67
Folding table	$ 42	$ 31.08	Hiking boots	$ 86	$ 34.40

Use the information in the advertisement above to complete these charts.

WORK SPACE!!

	Item	Percent Decrease
1.	Down sleeping bag	
2.	Gas stove	
3.	Lantern	
4.	Folding table	
5.	4-person tent	
6.	8-person tent	
7.	Backpack	
8.	Hiking boots	

Solve.

9. There were 248 campers at the Slide Mountain Campground a week ago. There are 310 campers this week. Find the percent increase.

10. This year the camp has 18 rental canoes. Last year they had 12 canoes. Find the percent increase.

Name _____ Date _____

8-5 Study Guide

NTI Day 28

Percent of Change

Example 1 **A VCR that usually sells for $365 is on sale for 20% off. What is the sale price?**

If you are saving 20% you are paying 80%

Method 1

First, find the amount of the discount.

$RB = P$

$0.20 \cdot 365 = P$

$73 = P$

Then, subtract the discount from the regular price.

$365 - 73 = 292$

The sale price is $292.

Method 2

First, find the percent paid.

$100\% - 20\% = 80\%$

Then, find the sale price.

$RB = P$

$0.80 \cdot 365 = P$

$292 = P$

Find the sale price of each item to the nearest cent.

1. $465 golf clubs, 20% off

I do!!

465 • .20 = $93

465 − 93

$372 sale price

method 1

2. $129 telephone, 30% off

Saving 30% = paying 70%

129 • .70

$90.30 sale price

method 2

3. $17.99 video, 40% off

4. $395 guitar, 10% off

You do!!

Find the selling price for each item given the amount paid by the store and the markup. Round to the nearest cent.

Choose your method

I do!!

5. $240 grill, 25% markup

240 • .25 = $60

240 + 60 =

You do!!

6. $580 refrigerator, 30% markup

(1.) Molly wants to buy a skirt. The original price was $29.00.

NTI Day 29

(A) The skirt is on sale for 30 % off the regular price. When Molly goes to pay for it, the cashier tells her she can have an additional 25 % discount off the sale price. Not counting sales tax, how much will Molly pay for the skirt? Show work.

(B) In determining the sale price of the skirt, is there a difference between: taking off each discount separately *or* adding the two discounts together before taking them off the original price? Explain why or why not in words using numbers.

(C) If there was a 6% sales tax, how much would the skirt cost after all discounts were taken. Show work.

Math Open-Response

1.

Percent Wrap-up

Name _____

1. Darlene bought a pair of jeans on sale for $28.56. The sale was 30% off the regular price. What was the regular price of the jeans?

   A. $19.99
   B. $22.85
   C. $37.13
   D. $40.80

2. A computer that originally cost $850 is on sale for 15% off. What is the sale price of the computer?

   A. $127.50
   B. $722.50
   C. $835.00
   D. $977.50

3. In September, there were 16 members in the Music Club. In October, the number of members was 24. What was the percent increase from September to October?

   A. 20%
   B. 30%
   C. $33\frac{1}{3}\%$
   D. 50%

4. Danny has $950 in his savings account that pays 2.5% annual simple interest. How much money will Danny earn in simple interest if he does not make any further deposits or withdrawals for 2 years?

   A. $47.50
   B. $95
   C. $475
   D. $950

5. **Jamie wants to buy a car priced at $7,200.00. The sales tax is 6%. How much is the sales tax?**

   A. $7632.00
   B. $432.00
   C. $43.20

6. Pablo put $1,260 into a savings account that earns 3% simple interest per year. He does not make any deposits or withdrawals. How much money will be in Pablo's account after 2 years?

A. $75.60
B. $1,297.80
C. $1,335.60
D. $8,820.00

7. Mrs. Blake's bill at a restaurant was $42.75. She wants to leave the waiter an 18% tip. How much will she pay in all, including the tip?

A. $6.41
B. $7.70
C. $49.14
D. $50.45

8. Mr. Chung stayed four nights at a hotel. His bill was $725 before the sales tax of 6% was added. How much was the sales tax?

A. $43.50
B. $45.00
C. $46.50
D. $49.00

9. Ina's income decreased from $62,100 to $57,500. What percent did her income decrease?

A. 4% B. 7 %
C. 5.5% D. 8%

10. Cameron spent $22 on a shirt that was originally priced at $27.50. What percentage was the shirt marked down?

A. 20%
B. 40%
C. 60%
D. 80%

ELA : Reading NTI Packet days 26-30
NONFICTION

DAY 26	DAY 27	DAY 28	DAY 29	DAY 30
ASSIGNMENT: Watch one televised daily news program either from local (Lexington-based) or national news such as CNN or FOX. While watching complete the attached sheet labeled " Daily News Connection". Alternate assignment: Read the article attached. If you choose to read the article you will answer the questions that go with the reading for today only. ** Only Days 26 and 29 offer an alternate assignment!	Assignment: Review text structures and complete the activities attached. <u>5 types of text structures:</u> Description -describes a topic Cause and Effect - details an event/cause and tells the effects/issues Problem and solution- tells a problem and how to solve it or how it was solved Sequence of events -timeline Compare and contrast- similarities and differences	Assignment: Read the article from Scope Magazine and complete the attached assignments on text features and sequence of events. Text features help you find information in a text. Common types of text features: Maps, Timelines, Graphs, Charts, Bold Words, Italics, Key, Captions, Photos, Dictionary, Table of Contents, Titles, Subtitles, etc.	ASSIGNMENT: Watch one televised daily news program either from local (Lexington-based) or national news such as CNN or FOX. While watching complete the attached sheet labeled " Daily News Connection". Alternate assignment: Read the article attached. If you choose to read the article you will answer the questions that go with the reading for today only.	Assignment: Description Journaling Describe your experience at Harrison County Middle School/ 8th grade students : reflect on your 3 years at HCMS. Describe what you have loved, what you will miss, and what you look forward to in high school. Also, describe your favorite HCMS memory 6th and 7th grade students: describe what you enjoy about HCMS and explain what future 6th grade students need to do in order to succeed at HCMS.

Daily News Connection
Day 26

Name:
Directions: While watching the news program, answer the following questions. You must watch the programming for at least 30 minutes. *Read these questions prior to viewing the program!!*

1. Day and time of the news program you viewed:

2. What channel or internet site was this program on?

   Focus on one story or segment of the news program. Then answer the following questions based on that part of the news.

3. **What** is happening and **What** do you think about it?

4. **Where** and **when** does this event happen?

5. **Why** is this information important?

6. How does this make you feel? And **Why**?

newsela * Day 26: Alternate Assignment *

Play it safe: What kids should know about the coronavirus outbreak

By Jason Bittel, Washington Post on 03.25.20
Word Count **977**
Level **MAX**

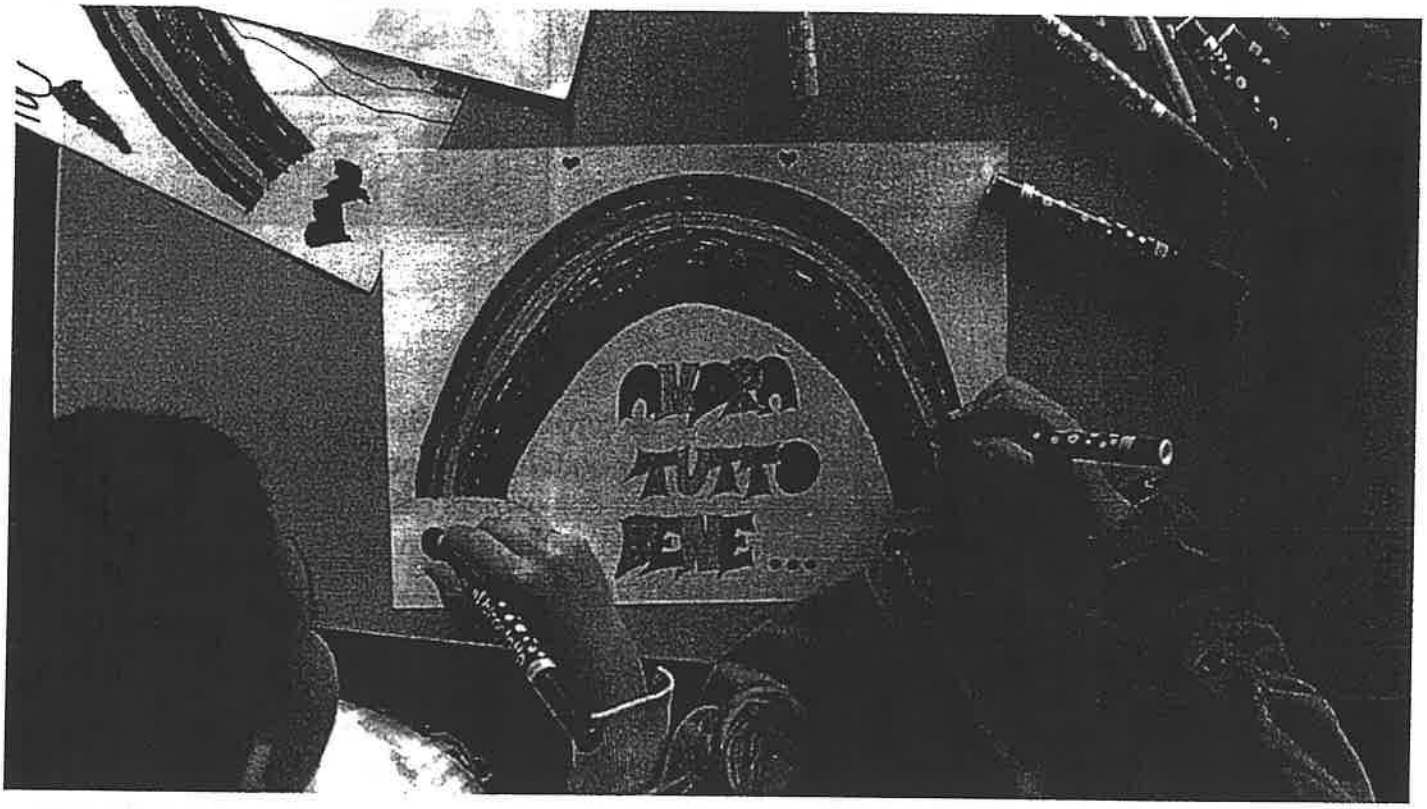


Image 1. Children draw a rainbow and the slogan of hope being shared in Italy, "Andrà tutto bene" (Everything will be alright), during quarantine measures amid the novel coronavirus COVID-19 pandemic on March 13, 2020, in Milan, Italy. Photo: Pietro D'Aprano/Getty Images

With schools closing across the nation in response to coronavirus concerns, many students may be jumping for joy. Others are worried, scared or confused. But as the American essayist Ralph Waldo Emerson wrote, "Knowledge is the antidote to fear."

With that in mind, let's answer a few common questions about coronavirus. Let's start with its name.

Everybody keeps talking about "coronavirus" and "covid-19." Which is it?

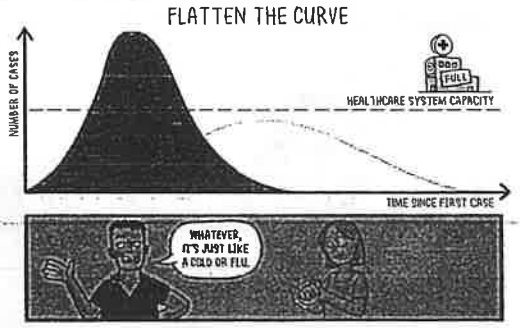
Technically, either of these terms could be correct, depending on how they are used. The actual virus that appeared in China at the end of 2019 and has since hopped across the world is called "SARS-CoV-2." This is short for "Severe Acute Respiratory Syndrome" and "coronavirus." Once the virus gets into a person, it can cause an illness known as "Coronavirus Disease 2019," or covid-19. Also, you might hear it referred to as a "novel coronavirus." This means that scientists already

knew about other coronaviruses, such as the one that caused an outbreak of SARS in Asia in 2003, but that this one is new.

How does covid-19 affect people?

The most common symptoms of covid-19 include fever, cough and/or shortness of breath. A person might develop one or more of these symptoms in as few as two days after being exposed to the virus. But they may also not feel sick for up to two weeks after contact.

Scientists say most people who get the virus will be able to fight it as they might a bad case of the flu. However, some people will have a harder time than others. Elderly people seem to be especially vulnerable. So are those with other conditions such as heart disease, lung disease or diabetes. Some people who have the virus won't even realize it but in the worst cases, covid-19 can result in death. Fortunately, death is extremely unlikely to happen in infected children and teenagers.



Can pets get covid-19?

So far, one dog in Hong Kong has tested positive for the coronavirus. However, it isn't showing any symptoms. So it's unclear whether the virus can have a negative effect on pets. According to the World Health Organization, there is no evidence yet that dog owners can catch the virus from their pets. Of course, if you keep your animals inside and avoid walking them in public places, they will be even more unlikely to come into contact with the virus.

Why are schools, stores and restaurants closing?

Because SARS-CoV-2 is new, our immune systems haven't had a chance to learn how to fight it off. This allows the virus to move around quickly, infecting many new people for each group it comes into contact with. This makes schools, stores, restaurants and other public gatherings the perfect places for the virus to spread.

The biggest concern now is that if enough people get sick at the same time, hospitals might not be able to keep up with the demand for treatment. This concern comes from what happened in Italy. This is a problem for those who need treatment because of covid-19. This is also a problem for anyone else who might need medical services for everything from a twisted ankle or a cut requiring stitches to more serious conditions.

Can this coronavirus be stopped?

There are many scientists around the world working to develop a vaccine. This could be used to halt the spread of this coronavirus for good. However, it will take time to develop that vaccine. There are measures communities and families can adopt in the meantime to help slow the virus' spread.

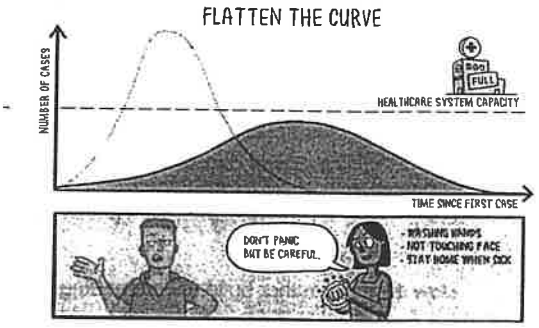
Why do we have to wash our hands so often?

First, washing your hands after going to the restroom or before handling food is a great practice in general. It can help you avoid catching all sorts of nasty illnesses. But hand-washing has become even more important as this coronavirus spreads. This is the easiest way to ensure you're washing your hands well enough: Use warm or cold water and soap and keep scrubbing every inch of your fingers, thumbs, palms and wrists. Scrub for the time it takes to sing "Happy Birthday to You" twice. The Centers for Disease Control and Prevention (CDC) has more tips at cdc.gov/handwashing. (Also, remember to cover your cough with a tissue or at least your inner elbow.)

What is "social distancing"?

Your parents might not want you to play basketball with your neighbors. Or they might not want you to go to a party that was scheduled for next weekend. This is because of something called "social distancing." And while it seems like a bummer, experts say it's another way everyone can work together to limit the impact of this coronavirus.

The idea behind social distancing is simple. The fewer people we have close contact with each day, the fewer opportunities the virus has to spread. (The CDC says "close" is six feet or less.) And that means not only will you and your family have better chances of avoiding covid-19, but so will your grandparents, your Scout group and the person you sit next to in a bus. Any of these people might be at a higher risk to have a more serious reaction from the virus.



How long will this last?

Unfortunately, no one can answer that question yet. The CDC recommends that large events be canceled or postponed for at least the next eight weeks. Your parents, teachers and KidsPost will be coming up with creative ways to pass the time.

Quiz

1 Which sentence from the article shows hospitals' MAIN problem?

(A) Some people who have the virus won't even realize it but in the worst cases, covid-19 can result in death.

(B) This makes schools, stores, restaurants and other public gatherings the perfect places for the virus to spread.

(C) The biggest concern now is that if enough people get sick at the same time, hospitals might not be able to keep up with the demand for treatment.

(D) And that means not only will you and your family have better chances of avoiding covid-19, but so will your grandparents, your Scout group and the person you sit next to in a bus.

2 Read the conclusion below.

Social distancing might be the key to stopping the coronavirus.

Which sentence from the article provides the BEST support to the statement above?

(A) Your parents might not want you to play basketball with your neighbors.

(B) And while it seems like a bummer, experts say it is another way everyone can work together to limit the impact of this coronavirus.

(C) The fewer people we have close contact with each day, the fewer opportunities the virus has to spread.

(D) Any of these people might be at a higher risk to have a more serious reaction from the virus.

3 How does the author build understanding of the coronavirus pandemic?

(A) by discussing the difference between "coronavirus" and "covid-19"

(B) by listing the symptoms of covid-19 and noting how long it might take to develop them

(C) by providing a timeline of the coronoavirus pandemic

(D) by listing and answering common questions about the coronavirus

4 Read the following selection introducing the effect of the coronavirus on pets.

According to the World Health Organization, there is no evidence yet that dog owners can catch the virus from their pets. Of course, if you keep your animals inside and avoid walking them in public places, they will be even more unlikely to come into contact with the virus.

What does the author MOST LIKELY want the reader to think about the effect of the coronavirus on pets based on this selection?

(A) Though it is not likely that pets can spread the virus, pet owners should still take precautions.

(B) Pet owners should practice social distancing with their pets, as animals are the main carriers of the virus.

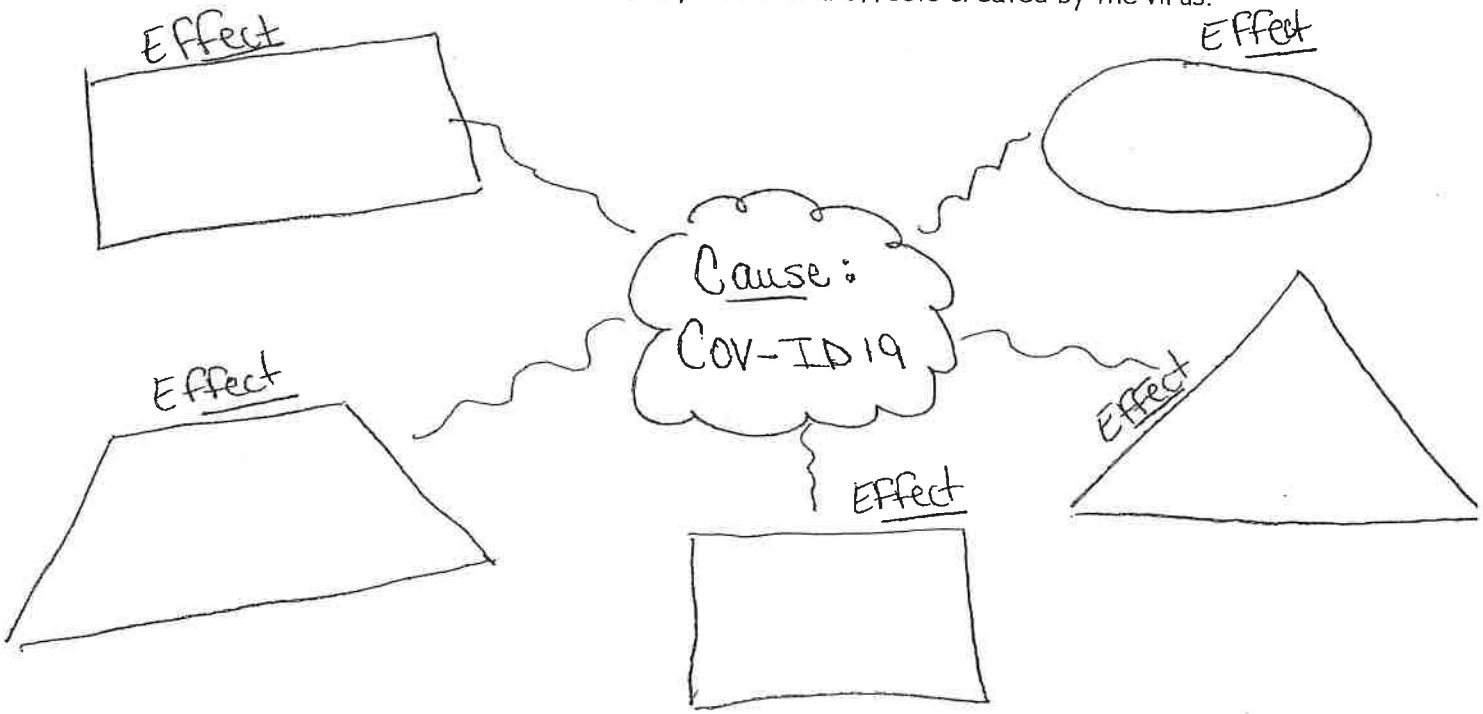
(C) Even though there is no evidence showing dog owners can catch the virus from their pets, it is very likely.

(D) When social distancing, people should avoid both people and animals.

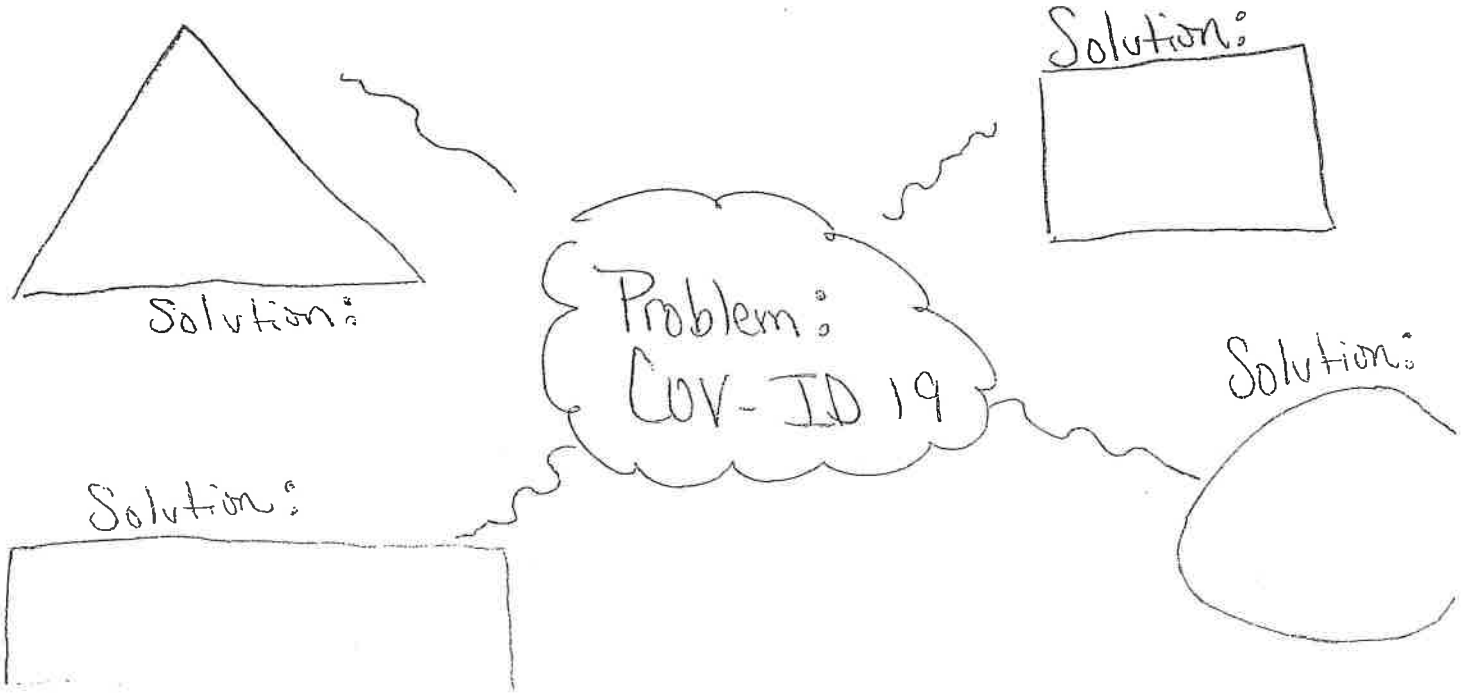
Text Structures
Day 27

Today we will focus on Cause and Effect and Problem and Solution text structures focusing on COV-ID 19. Using your knowledge and understanding of the virus complete the following activities. Another text structure that can be used is Question and Answer. While completing today's lesson, you can ask the family members in your home or call others to help you complete these activities by asking questions and using their answers to help.

Cause and Effect: The cause is COV-ID 19, list several effects created by the virus.



Problem and Solution: The problem is COV-ID 19, list ways that local, state, and national leaders have tried to solve the problem.



Text Structures
Day 28

Text Features and Sequence of Events:
Read the passage "The History of the Trampoline" and complete the following:

1. List 4 text features used in the passage.

2. Sequence of Events: List 4 major events involving the history of the trampoline. Be sure to list them in order of occurrence (1st, 2nd, etc)

3. ENRICHMENT ASSIGNMENT -**<u>*OPTIONAL*</u>**. Complete the "You Be the Editor" activity at the top of page 30.

Day 28

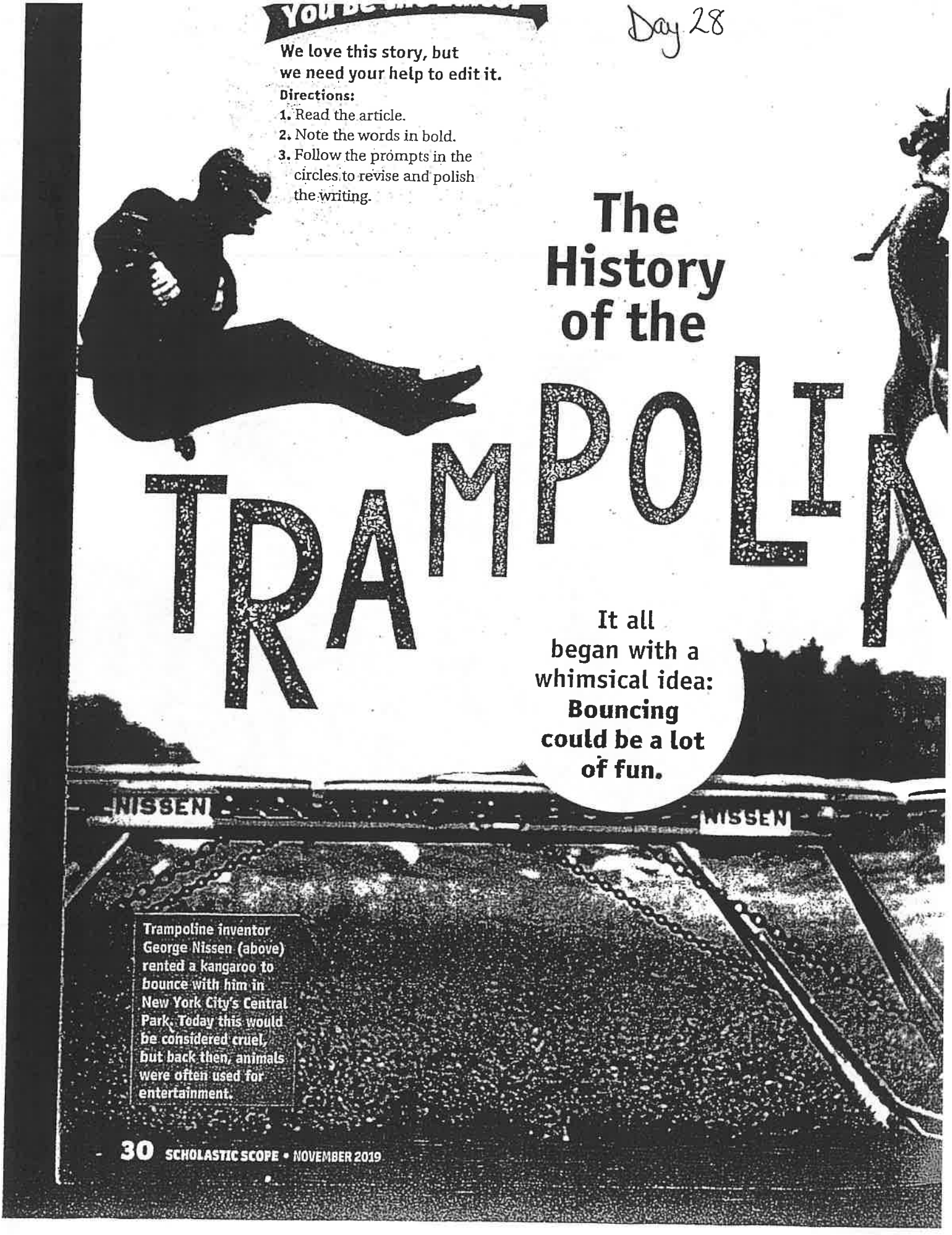
We love this story, but we need your help to edit it.

Directions:

1. Read the article.
2. Note the words in bold.
3. Follow the prompts in the circles to revise and polish the writing.

The History of the TRAMPOLINE

It all began with a whimsical idea: Bouncing could be a lot of fun.



Trampoline inventor George Nissen (above) rented a kangaroo to bounce with him in New York City's Central Park. Today this would be considered cruel, but back then, animals were often used for entertainment.

It was 1930, and 16-year-old George Nissen was at the circus, watching a trapeze show. But Nissen wasn't watching the performers flipping and twisting high up in the air. His eyes were glued to the safety net stretched below them. At the end of each routine, the trapeze artists would let themselves fall into the net, which caught them like a springy mitt and ❹ **sent them back up into the air.**

Now that looks fun, Nissen thought.

In that instant, the idea for the trampoline was born.

1 Revise this phrase to be more descriptive and fun.

A POPULAR PASTIME

❷ **Nissen went home and began to work on a new invention. His gymnastics coach helped him. Nissen took a sheet of canvas. He stretched it across a frame made of steel. He called the contraption "the bouncing rig." He came up with a far better name a few years later. The name was trampoline. The name comes from the Spanish word for diving board.**

2 These lines all have the same rhythm. Give this paragraph some zing by mixing up the sentence structures.

Over the next few years, Nissen worked hard to improve his creation. He gave demonstrations all over the world to promote his trampoline. In 1941, he started a company that produced and sold trampolines—and he made millions of dollars.

Soon, trampolines were popping up all over America. ❸ **They were appearing in backyards. They were appearing at public "jump centers." They were appearing at some gas stations, where road-weary kids could bounce while their parents filled the gas tank. The U.S. military even used trampolines to train pilots and parachutists.**

A DANGEROUS THRILL

There was no denying the thrill of jumping on a trampoline. But there was—and still is—a major problem: Trampolines are dangerous. Every year, thousands of bouncers are injured, some seriously. According to a 2016 study by the *Journal of Pediatric Orthopaedics*, trampoline-related injuries sent more than 1 million people to emergency rooms between 2002 and 2011—most of them children under age 16.

3 Combine these three sentences into one.

4 Research trampoline safety and add some tips after this sentence.

In 1989, the company Nissen started went out of business because it could not afford the lawsuits from people who were getting hurt on trampolines.

But Nissen never lost his passion for his invention. He continued trampolining until his death at age 96, and he lived to see one of his dreams come true: In 2000, trampolining became an Olympic sport.

❹ **So the next time you leap on a trampoline, be careful.** And be sure to thank George Nissen for the ❺ **thrill** of flying through the air. ●

5 The author already used this word. Replace it with another.

Editing Contest

Send your revised article to **Trampoline Contest.** Three winners will each get a $25 Visa gift card and have their entries published online. See page 2 for details.

Go to Scope Online for a great activity.

Daily News Connection
Day 29

Name:
Directions: While watching the news program, answer the following questions. You must watch the programming for at least 35 minutes. *Read these questions prior to viewing the program!!*

8. Day and time of the news program you viewed:

9. What channel or internet site was this program on?

10. What events or situations have changed since you watched the news on Day 26?

Focus on one story or segment of the news program. Then answer the following questions based on that part of the news.

11. **What** is happening and **What** do you think about it?

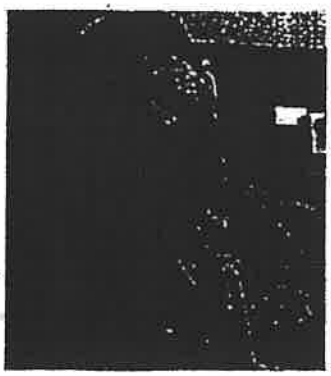
12. **Where** and **when** does this event happen?

13. **How** do you feel about the news you watched today? And **Why**?

ACTION
APRIL 2020

Day 29; Alternate Assignment

A CREEPY



Lauren Esposito travels the world studying scorpions and spiders. Here's what she wants you to know about these misunderstood creatures. BY ANNA STARECHESKI

If you were to see the animals on this page in real life, what would you do? Most people might run screaming. But not Lauren Esposito. She's a biologist—a scientist who studies living things. And her specialty is arachnids, like spiders and scorpions.

Lauren spends about half her time traveling the world looking for these creatures. Then she comes back home to write about what she found. We talked to her about working with some of the most feared animals on Earth.

Have you always loved arachnids?

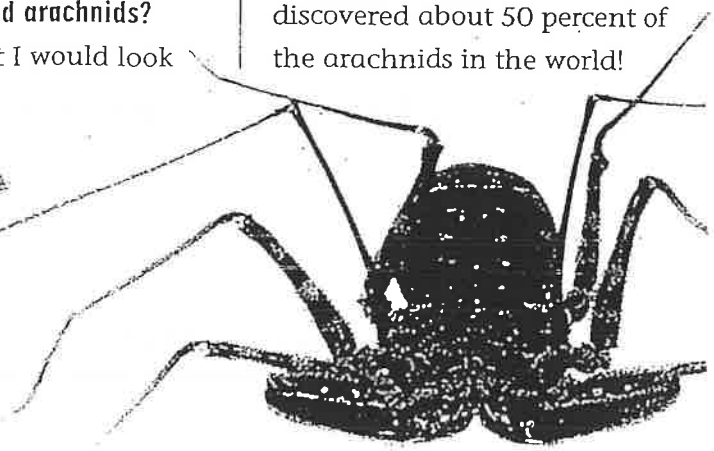
Not exactly. But I would look for bugs and worms in my garden as a kid. So I've always been draw to creepy-crawly creatures.

Why is it important to study arachnids?

They've been around since before the dinosaurs! They can teach us about how animals survi through time as Earth changes around them.

What's something that people might find surprising about your job?

We are finding new species—o types—of arachnids all the time. I collect about 100 new species every year. Scientists have only discovered about 50 percent of the arachnids in the world!



Lauren's favorite arachnid is the whip spider. They've been known to eat lizards and hummingbirds!

Day 29: Alternate Assignment Continued

ONLINE EXTRA Go scorpion-hunting with Lauren in our **video**.

CAREER

What traits does a good biologist need?

You need to be curious and observant—always noticing what's around you. And you have to be fascinated by nature!

A lot of people are afraid of arachnids. Why is that?

Well, the way they move is very alien to us. We're not used to seeing things walk around on the ceiling with eight legs! Plus, there are *some* arachnids that are venomous—that means they have a poisonous bite or sting. So people think *all* arachnids can hurt them.

What do you say to those people?

Fewer than 1 percent of all arachnids are dangerous to humans. Most spiders can't even bite people—their fangs are too small to get through human skin.

Have you ever been bitten or stung?

I was once stung by a scorpion. It felt like getting pricked by a thumbtack. I was totally fine! •

Mini Skills Workout

WHAT TO DO: **Write your answers on the lines below.**

1. How arachnids move is *alien* to us. What's another word Lauren could have used? Write it here.

_____

2. What are three traits a biologist needs?

_____

_____

3. Find a sentence where Lauren explains what we can learn from arachnids. Write it here.

_____

_____

_____

_____

_____

Answers are in the Teacher's Guide

HCMS Journal

Day 30

Complete your journal activity below.

8th grade students : reflect on your 3 years at HCMS. Describe what you have loved, what you will miss, and your favorite HCMS memory. Write a 3.8 paragraph to describe your HCMS journey.

6th and 7th grade students: describe what you enjoy about HCMS and explain what future 6th grade students need to do in order to succeed at HCMS.

Middle School Phone Number: (859) 234-7123

Team Leader: Julie Lucky (Band and Music)
Phone Extension: 4411
Email: Julie.Lucky@harrison.kyschools.us
Google Classroom Code:44fyxp7

Emily Eastman (Chorus)
Phone Extension: 4601
Email: Emily.Eastman@harrison.kyschools.us
Google Classroom code:tjvcuxo
Remind 101 code:Text @hcmschor to 81010

Debbie Pulliam (Art)
Phone Extension: 4413
Email: Debbie.Pulliam@harrison.kyschools.us
NTI Google Classroom Code: vxv5b47
Webpage: https://sites.google.com/harrison.kyschools.us/hcmsart/home

Morgan Farrow (Agriculture)
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NTI Google Classroom Code: tp4wdko
Remind 101 code: Text @d66484 to 81010 - FFA only

Glenn Lonaker (Health)
Phone Extension: 4112
Email: Glenn.Lonaker@harrison.kyschools.us
Google Classroom Codes: 6th - fmh2d3d 7th - ebrxcvw 8th - cnygkei
https://sites.google.com/a/harrison.kyschools.us/mr-lonaker-s-health-class/

Chelsea Hill (Physical Education)
Phone Extension: 4608
Email: Chelsea.Hill@harrison.kyschools.us
Google Classroom Code: liscslg ** If this code does not work, try 4xlysbp
Remind 101 codes: Text the appropriate code to 81010
6th grade: @hill6hcm
7th grade: @hill7hcm
8th grade: @hill8hcm

Log in on your School Google Account To get To The Google Classroom page.

First.last@stu.harrison.kyschools.us

Welcome to 6th, 7th, and 8th grade

Explore

Fine dining restaurant for a well-rounded mind.

NTI 26-30

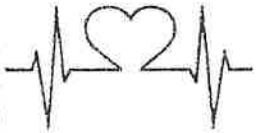
Choose 1 of the following activities to complete during the week of April 20th - April 24th.

Each student in the school must complete this assignment!

Appetizer

Phys. Ed.

Explore the thrill of creation through designing your own cardiovascular workout regimen!



Main Course

Agriculture

Travel through time and explore how agriculture has changed over the years!

Dessert

Music

Explore the power of music to underscore and express life events and personal characteristics by creating a soundtrack to your life!

Contact information for each teacher found on the next page!

PE NTI Days 26-30: Day 4

FITNESS HOMEWORK – WHY?

So why are we going to have fitness homework for NTI?

- To make sure you are getting your 30-60 mins a day
- To learn how to train to reach our fitness goals
- To reinforce concepts learned in class

Did you know????

1. As many as **676,000 deaths** per year can be attributed to the lack of physical activity.
2. The average child middle school students gets 5-8 hours screen time a day.
3. Excess body weight during adolescence may lead to low self esteem and poor social health.
4. Children are more likely to exercise when their parents exercise.
5. Each hour of exercise adds two hours to your life expectancy.

A healthy lifestyle must be reinforced at home as well as at school. That is why it is so important to start positive exercise habits at a young age.

Assignment – Physical – 30 min. cardiovascular workout of your choice.

Activity: _____

Parent Signature(Required):_____
I participated with my child: Yes _____ No_____

Assignment – Written

1. Which fitness fact from above stood out to you? And why? (parent or child may answer)

_____
_____
_____
_____

2. What physical activity do you enjoy the most?

Student:_____
Parent: _____

3. Why is a parent signature required for each homework assignment?

_____
_____
_____

PE NTI Days 26-30: Day 2

Fitness Homework - Math connection

Name _____ Date _____ Class_____

In PE, you would be learning how to calculate a target heart rate range. For homework, your assignment is to use YOUR AGE, and YOUR RESTING HEART RATE to calculate a PERSONAL target heart rate range. Then answer the questions and have your parent/guardian sign your work. Remember to keep your decimal points lined up.

Calculating YOUR Target Heart Rate Range

Purpose: To identify a PERSONAL target heart rate zone; which is a safe and comfortable level at which to perform physical activities.

Procedure: Study the example provided before completing this activity

	EXAMPLE	FOR YOU	
		LOWER LIMIT	UPPER LIMIT
Start with 220 Subtract **your** age	220 -20	220 -_____	220 -_____
Equals Maximum Heart Rate (MHR) Maximum times heart should beat/min.	200	=_____	=_____
Subtract **YOUR** Resting Heart Rate	-70	-_____	-_____
Multiply by: 60% - Lower Limit 80% - Upper Limit	130 x .60	=_____ x .60	=_____ x .80
Add Resting Heart Rate	78.00 + 70.00	=_____ +_____	=_____ +_____
Equals Target Heart Rate (THR)	158 Beats per minute	Beats per minute	Beats per minute
		YOUR THR	

1. What does it mean if your heart rate is not within your target heart rate range when you are done exercising or participating in a physical activity?

_____

2. What should you do if you take your pulse (heart rate) during activity and it is above your target heart rate range? **WHY?**

_____

3. What should you do if you take your pulse (heart rate) during activity and it is below your target heart rate range? **WHY?**

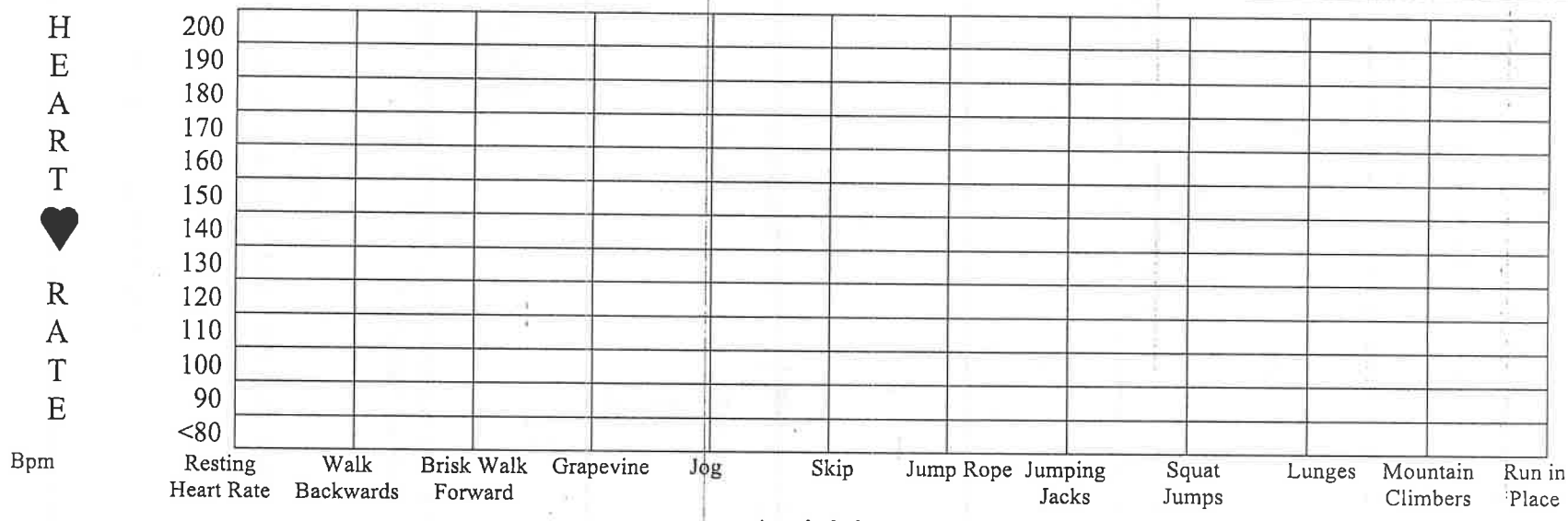
_____

Parent/Guardian Signature Required: _____

PE NTI Days 26-30: Day 1

Cardio Graph Worksheet - Follow the directions below, placing a dot on the line above each category to represent your score. At the end, you will connect the dots to form a line graph.

Name: _____ Parent Signature: _____



Activities

Before participating in the activities, record your resting heart rate: ____. You will now participate in each of the activities listed on the graph for 1 minute. After each activity, quickly locate your pulse and count your beats for10 seconds. Multiply the number of heart beats you counted by 6 This is your BPM on the graph. After the cool down walk, your heart rate was ____. Look at the pattern that developed on your personal Cardio Graph as you charted your heart rate for each activity.

How does the exercise affect your heart rate? _____

What could you have done to increase your heart rate? _____

What could you have done to decrease your heart rate? _____

Did you give your best effort? Why or Why not? _____

_____

PE NTI Days 26-30: Day 3

FITNESS HOMEWORK : **Cardiovascular Exercise**

Types of Cardiovascular Exercise

There many **types of cardiovascular exercise**. Cardiovascular exercise is something that involves using the larger muscles like your legs. So as you can imagine there are many different way to do this. They can be divided up into a number of different categories. Indoors and outdoors exercise and with or without special exercise equipment.

Outdoor Cardiovascular Exercise

This includes running, walking, jogging, bicycling, jump-roping, swimming and some types of skiing

Indoor Cardiovascular Exercise

The indoor types of cardiovascular exercise include using treadmills, stationary bicycles, stair climbers, rowing machines, elliptical trainers and ladder climbers.

You may have noticed from the list above that for the most part the types of cardiovascular exercises you can do outside tend to be the ones that do not need any kind of special equipment. That is true for the most part. However, even when running or walking you should make sure that you wear the right kind of shoes - or you may injure your feet. Also, when bicycling you should wear a helmet. And of course, you need a jump rope to be able to go jump-roping!

For the most part though the indoor equipment is kind of expensive stuff. You may want to try some yard sales to see if you can find some of that equipment cheaper there first.

But, overall there are still many different types of cardiovascular exercise. What is best for one person may not be for another, depending upon your needs.

Assignment – Physical – 30 min. cardiovascular workout of your choice.

Activity: _____

Parent Signature (Required):_____
I participated with my child: Yes _____ **No**_____

1) What makes an exercise a cardiovascular exercise?

2) List three indoor cardiovascular exercises.

3) List three outdoor cardiovascular exercises.

PE NTI Days 26-30: Day 5

FITNESS HOMEWORK : Cardiovascular Exercise

Benefits of Cardiovascular Exercise

There are many health **benefits of cardiovascular exercise**. It can also have a number of psychological benefits - it can help you feel stronger and more capable, happier, more energetic, etc.

It can burn a lot of calories

One of the benefits of cardiovascular exercise is that it is a good way to burn calories. Still, to lose weight with cardiovascular exercise - you need to do it for longer periods of time and more frequently to lose weight. It is best to try and both decrease your caloric intake and start a cardiovascular exercise program at the same time.

Can raise you metabolic rate

Some studies have shown that with regular cardiovascular exercise your resting metabolic level will increase. This is one way in which it can help you to lose weight.

Decreases Risk of cardiovascular disease

Some research suggests that even just walking 20 minutes, three times a week and can lower your risk of heart diseases

Assignment – Physical – 30 min. cardiovascular workout of your choice.

Activity: _____

Parent Signature (Required):_____
I participated with my child: Yes _____ **No**_____

1) What lowers your risk of heart disease?

2) How does a cardiovascular workout help you lose weight?

3) List three benefits of cardiovascular exercise.

Agriculture

(Part 1): Read through the provided documents that discuss how agriculture has changed over the years. After reading these, answer the questions on the pages titled History of Agriculture Production and Name the Equipment. After you have finished part one, you will move on to part two.

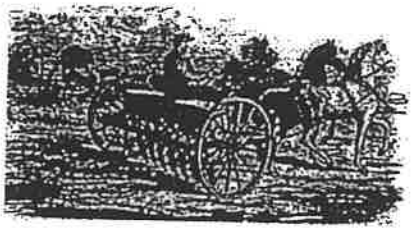
Time Travel: The History of American Agriculture

1493: Christopher Columbus brings calves, goats, sheep, pigs, chickens, melons and many vegetables to America.

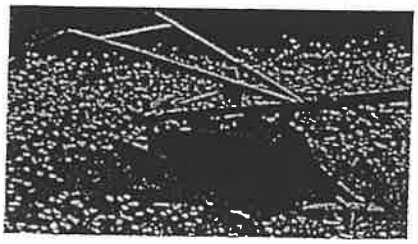
1607: English Colonists in Jamestown, Virginia plant grain potatoes, pumpkins, melons, cotton and oranges.

1609: Indians teach the Jamestown settlers how to grow corn.

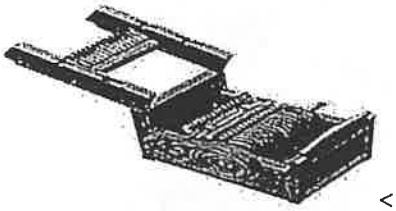
1731: Jethro Tull introduced the horse-drawn cultivator and seed drill into English farming which allowed people to plant seeds much quicker than by hand.



1784: James Small invents the iron plow in England to help break up the soil.



1793: Eli Whitney invents the cotton gin which helps separate the cotton from the seeds saving a lot of time and human labor.



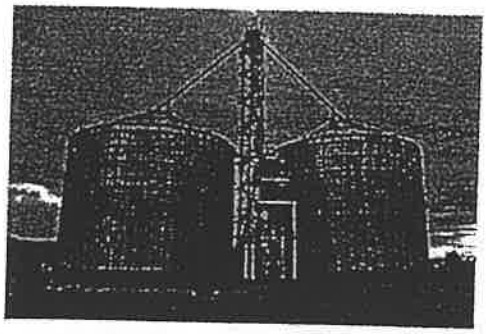
< Cotton Gin

1798: John Chapman (Johnny Appleseed) plants his first apple nursery in western Pennsylvania.

1831: Cyrus McCormick invents the reaper that helps to cut crops.

1837: John Deere begins to manufacture steel plows.

1842: The first grain elevator is used in New York to move and store grains.



1847: Irrigation methods begin to help water crops during dry periods.

1850: S.S. Rembert and J. Prescott develop a mechanical cotton picking machine.

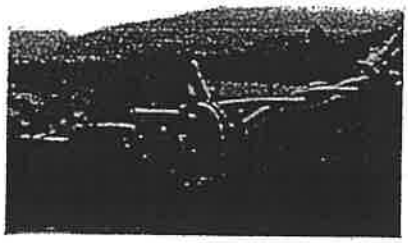
1855: Michigan and Pennsylvania establish the first state agriculture colleges.

1858: Mason jars are invented and are commonly used to help store canned goods.

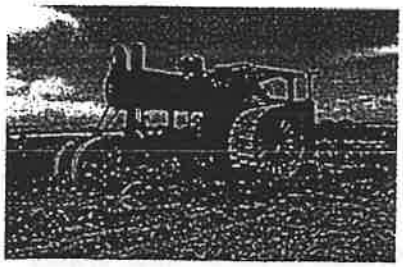
** For additional agriculture assignments, feel free to visit Mrs. Farrow NTI Google Classrooms. (The code can be found on the front of the Explore NTI Packet.)

1862: President Abraham Lincoln signs legislation creating the first Department of Agriculture.

1867: Barbed wire used for fencing is invented to help keep in animals.



1868: Steam tractors are tested.



1869: Transcontinental railroad was finished allowing quicker movement of goods from East to West.

1875: The first silos are built for grain storage.

1884: Horse drawn combines are used.

1888: The first long-haul shipment of a refrigerated freight (train) car goes from California to New York.

1890: Cream separators are used to separate the cream from whole milk. This gives us cream for things like butter.

1892: John Froelich builds first gasoline tractor.

1927: All-purpose, rubber tired tractor with machinery is used.

1936: A hay baler with a self-tie system was invented.

1959: The mechanical tomato harvester is developed.

1970-80s: Minimum tillage agriculture is popularized to help reduce the risk of soil erosion (soil getting washed/blown away).

1994: Farmers begin using GPS to track and plan their farming.

2000: Ethanol (a renewable fuel made from plants like corn) use increases with 1.63 billion gallons produced.

2000-Present: Many previous inventions have been updated throughout the years and have made farming easier. (See some examples of these in the current equipment section of the notes.) New technologies like self-driving tractors, new crop varieties, new planting techniques, and many more things are continuing to be developed daily which will change the future of agriculture.

Objective 1: Describe agriculture's role in developing civilizations.

Anticipated Problem: How does agriculture develop civilizations?

I. A *civilization* is a group of people who settle in one place. In order for a civilization to survive in that place they must have food.

A. One way to obtain food is by hunting and gathering. If a civilization depends on this method of obtaining food, it must designate members of the group to be *hunters and gatherers*, people who go out and find food for everyone. Eventually, the group will use up all local sources of food or the population will outgrow the supply.

B. Another way to obtain food is to plant, care for, and harvest crops.

1. Early civilizations found that for them to establish a community and remain in the same place, it was necessary to plant food and to tame animals. This was the beginning of agriculture science.
2. As people began planting food and raising animals, they immediately began looking for better ways to care for plants and animals. Through scientific experimentation they began improving the science of agriculture.
3. As people became more dependent on land and animals, they began to practice stewardship. ***Stewardship*** is the practice of taking care of land and animal resources so they can benefit future generations.

Objective 2: Identify some of the inventions that changed the agriculture industry.

Anticipated Problem: What are some of the major inventions that changed the agriculture industry?

II. In early agricultural practices, seeds were planted and harvested by hand. Over time a number of inventions and innovations have advanced farming practices to their current state.

A. In 1831, Cyrus McCormick invented a mechanical reaper that made harvesting crops more efficient. The ***reaper*** was a machine pulled by horses that was used to cut wheat at the base of the stem. Prior to the invention, plants had to be cut by hand and bundled into shocks and stacked.

B. In 1837, John Deere began manufacturing a plow with a steel cutting edge, called a ***steel plow***. This steel plow was light enough that horses could pull it through the ground, while at the same time it was strong enough to break up heavy prairie soil.

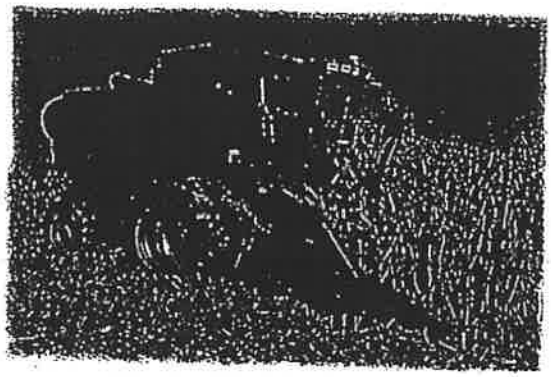
C. Soon after McCormick's reaper was invented, a thresher was invented. A *thresher* separates the grain from the stem of the plant. Farmers would pick up the stalks cut by the reaper and then hand-feed them through the thresher. After the invention of the internal combustion engine, these two machines were combined to make a combine.

D. An *internal combustion engine* is a device that uses fuel to create energy which is then used to do work. The invention of this engine lead to the invention of tractors and combines. Work that once took days to do by hand could now be done in minutes.

TM: A-2C

COMBINE

A combine is a machine that picks crops from the field and separates the grain from the stems, cobs, or pods. The grain is then stored in a large bin behind the cab. When the bin is full, the auger, or arm, on the side of the combine moves the grain from the combine into a grain truck or wagon.

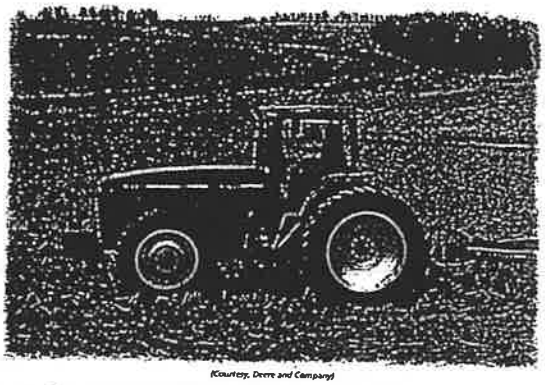


(Courtesy, Case Corporation)

TM: A-2B

TRACTOR

Tractors do many jobs on a farm. Because of their powerful engines, they are mostly used to pull heavy machines like plows and planters. Their large tires provide traction.



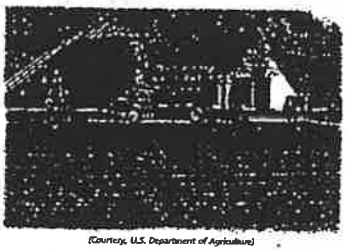
(Courtesy, Deere and Company)

Current Agriculture Equipment

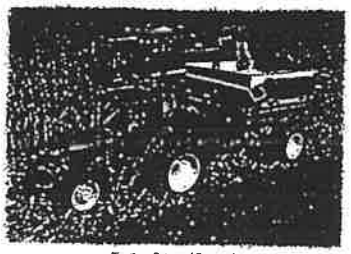
TM: A-2F

GRAIN TRUCK AND WAGON

Farmers use grain trucks and wagons to move grain from the field to grain bins or the grain elevator.



(Courtesy, U.S. Department of Agriculture)

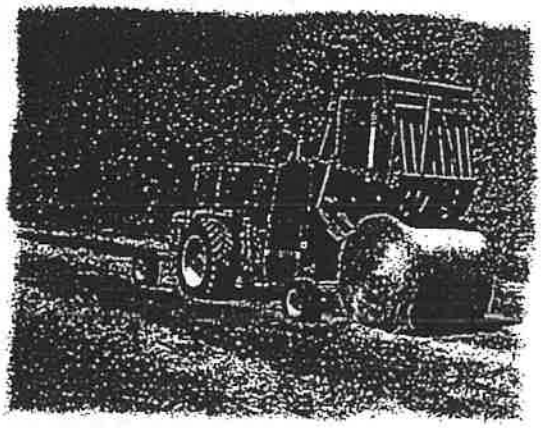


(Courtesy, Deere and Company)

TM: A-2G

BALER

A baler is used to wrap hay or straw into round or rectangular bales. The baler packs the hay or straw tightly and ties it together with wire or twine.

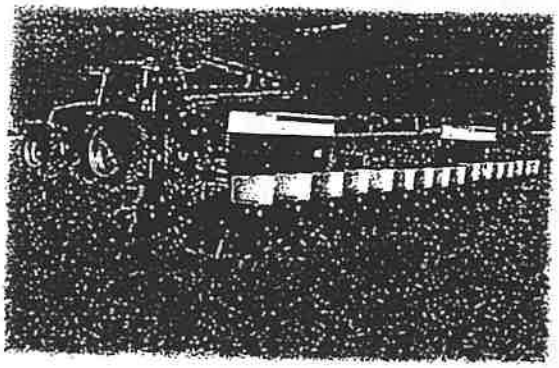


(Courtesy, Deere and Company)

TM: A-2D

PLANTER

The planter places seeds into the ground as a tractor pulls it through the field. The seeds are loaded into tanks on the planter. The machine creates a row and drops the seed in the row. The seed is then covered with a layer of soil.



(Courtesy, Case Corporation)

TM: A-2E

TRACTOR WITH LOADER

The loader is a scoop or bucket located on the front of a tractor that is used like a large shovel. It helps farmers move hay, straw, gravel, dirt, and manure around the farm.

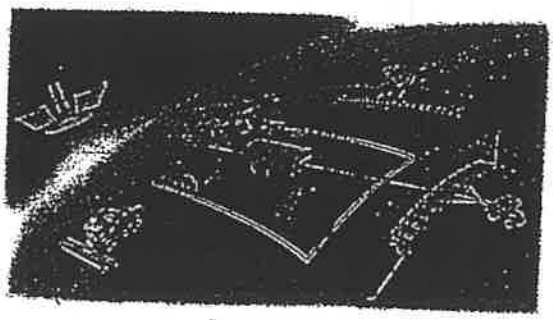
(Courtesy, Deere and Company)

Current Agriculture Equipment

TM: A-2H

GLOBAL POSITIONING SYSTEM AND GEOGRAPHIC INFORMATION SYSTEM

GPS works through satellites and computers in the tractor to pinpoint exact location. GIS is then used to make a grid for each field to tell farmers how to prepare and maintain the soil and crops in that field.



(Courtesy, Deere and Company)

Name _____

HISTORY OF PRODUCTION AGRICULTURE

▶ Matching

Instructions. Match the word with the correct definition.

a. combine
b. thresher
c. reaper
d. loader
e. tractor

_____1. Powerful machine used to pull other farm implements.

_____2. A machine that separates grain from the stalk.

_____3. This machine is a combination of a reaper and a thresher.

_____4. A machine invented in 1831 by Cyrus McCormick.

_____5. Large bucket on the front of a tractor.

▶ Fill-in-the-Blank

Instructions. Complete the following statements.

1. _____ _____ was the first person to manufacture the steel plow.
2. A _____ packs hay or straw into tight bales.
3. Global Positioning Systems use _____ and _____ to pinpoint locations within a field.

▶ Short Answer

Instructions. Answer the following question.

What are two major inventions that changed the agriculture industry? Explain how they changed ag.

WS: A-2A

Name _____

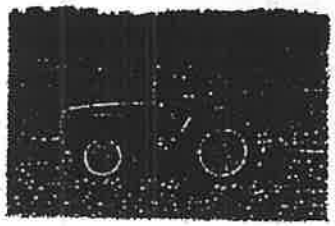
NAME THE EQUIPMENT

▶ Directions

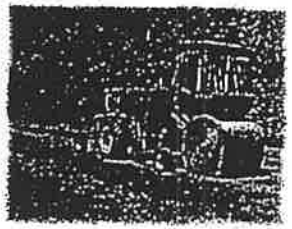
Write the name of the piece of equipment on the line under its photo.

1. _____

2. _____



3. _____



4. _____

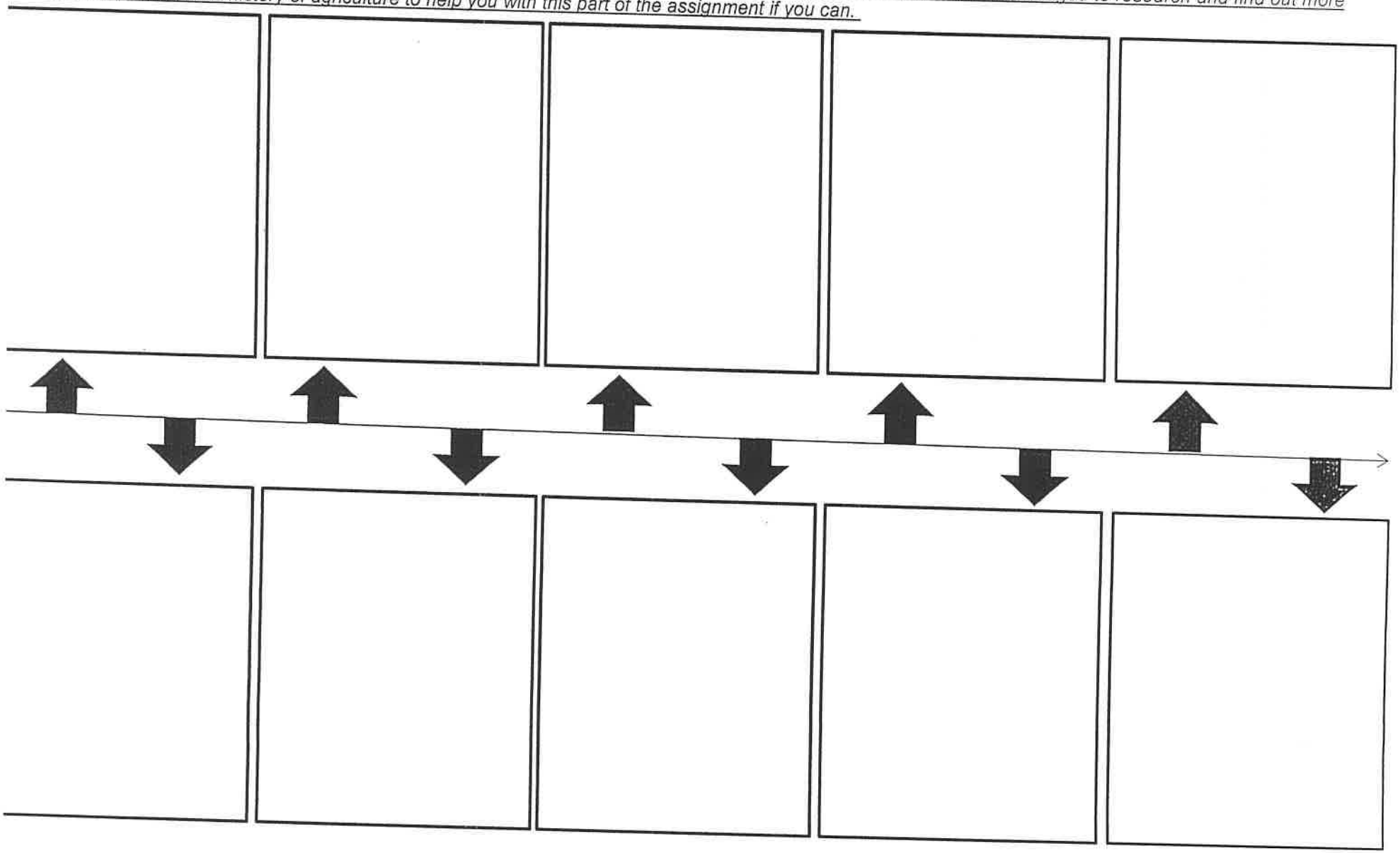
5. _____

6. _____

(Part 2): For this part of the assignment, you will be creating a timeline to show how agriculture has changed over the years. You will use the timeline template provided below to do this. For your timeline, complete the following:

- You need to choose at least 10 historical agriculture related events that you feel were important.
- Make sure you list the **year the event occurred**. ***Then*** briefly describe **what happened *and* why it was important / how it helped agriculture.**
- In addition to the written information, **draw a small image that relates to what happened during this year**. You may color these if you wish.

You must use the notes provided to you in Part 1 to help you complete this part of the assignment. You are also encouraged to research and find out more information about the history of agriculture to help you with this part of the assignment if you can.



(Part 3): Based on what you have learned during this lesson, summarize how agriculture has changed over the years in one paragraph (5-8 sentences). *Hint: Think about how things were done before technology / machinery was used and how things have changed since then. You may also include discussions of how specific inventions changed agriculture.* Use the space below to complete this part of the assignment.

THE SOUNDTRACK OF MY LIFE

Lesson Plan for Middle School Music
Prepared by Mrs. Eastman

PROMPT

In every great movie, there is a soundtrack that underscores the drama of what happens in the plot. The composer John Williams wrote musical themes for each of the main characters in the Star Wars movies. If a movie were to be made about you, what type of music would be in the soundtrack? Create an imaginary music album that shows who you really are. You may use existing songs or create original songs to describe events in your life or your personality. Finally, design an artistic cover for your album.

THE PLAYLIST

1. Choose *at least* five songs to include for your playlist. Remember, you can use existing songs or come up with your own.
2. Write down your song list on a separate sheet of paper. Put the playlist in the order you like best.
3. For each song, write liner notes that include the following: musical genre of the song, the tempo, the time signature, type of musical ensemble performing the song, the mood of the song, and why it is relevant to your life.

COVER ART

Create an album cover for the Playlist of Your Life. You can title the album whatever you like. Include that on the cover.