

**9th Grade
Lesson Plan
Packet**

5/18/2020-5/22/2020

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: 9 Biology

Teacher(s): Mr. Malpiedi michael.malpiedi@greatheartsirving.org

Ms. Oostindie megan.oostindie@greatheartsirving.org

Weekly Plan:

Monday, May 18

Digestive system worksheet

Tuesday, May 19

Reproductive system worksheet

Wednesday, May 20

Body systems review day

Thursday, May 21

Body systems quiz

Friday, May 22

Attend office hours

Catch-up or review the week's work

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

Monday, May 11

Complete the *digestive system worksheet* using your textbook as a guide. The page numbers listed will be crucial for you to complete the worksheets *but do not take notes on these pages*. Use the worksheets to find and record the most important information from these sections. Self-grade the worksheets on Wednesday.

Tuesday, May 12

Complete the *reproductive system worksheet* using your textbook as a guide. The page numbers listed will be crucial for you to complete the worksheets *but do not take notes on these pages*. Use the worksheets to find and record the most important information from these sections. Self-grade the worksheets on Wednesday.

Wednesday, May 13

Use today to review for tomorrow's quiz. Challenge yourself to complete the quiz on the body systems *without* using your notes or textbook. The point is that *you* become a better scientist!

Take a look at the attached worksheets - they have all the correct answers. Use them to review your own work and prepare for the quiz.

Thursday, May 14

Take the Body Systems Quiz - good luck, you don't need it!

Friday, May 15

Use this day to attend office hours, catch up on work from this week, scan your documents, and enjoy the start of your weekend! *You do not need to include notes in your packet submission*, only the documents listed: body systems quiz.

Digestive System

Directions: Using the provided pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 985-991)

- Sort the following structures of the digestive system according to if they come into direct contact with food: mouth, liver, esophagus, stomach, pancreas, small intestine, large intestine, gallbladder

| DIRECT CONTACT | NO DIRECT CONTACT |
|----------------|-------------------|
| | |

- Using the structures listed in “direct contact” above, order them according to how food travels through the body:
 - _____
 - _____
 - _____
 - _____
 - _____
- The _____ is the upper boundary of the stomach and the _____ is the point where the stomach connects to the small intestines.
- The liver produces bile which is then stored and concentrated in the _____.
- The pancreas, because it secretes hormones and juices that help to neutralize stomach acid is a part of the _____ system and the _____ system.

Function (pp. 985-991)

- Name and describe the two types of digestion that occur in the stomach.

2. Explain how peristalsis moves food down the esophagus, into the stomach.
3. What is the primary function of the intestines? What structural feature of the small intestines allows it to perform its function well?

Reproductive System

NB: The cultural and social aspects of human reproduction are deeply personal and beyond the scope of this class. This worksheet will offer an overview of the physiology of human reproduction only.

Structure (pp. 1049-1051, 1052-1053)

List the organs of the human male reproductive system in order of their contact with a sperm cell.

1. Testis
2. _____
3. _____
4. Seminal vesicle
5. _____

List the parts of the human female reproductive system in the order of their contact with an egg cell.

6. Ovaries
7. _____
8. Uterus
9. _____

Function

10. The period of life before the reproductive system is functional is called _____.
11. The period of life when the reproductive system is developing is called _____.
12. The period of life marked by a functional reproductive system is called _____.
13. What is the final cause of the human reproductive system?

14. Is the reproductive system essential for survival?

15. The reproductive organs produce a unique type of cell, different from all other cells. What are these cells called, and how are they different?

16. What is the name of the process by which sex cells are produced?

17. Can a brother and sister be identical twins? If so, how? If not, why not?

18. Please read: Every other human system maintains the life of the human to which they belong. When that life comes to an end, so do the systems that supported it. The reproductive system is unique because it brings new lives into the world *that are ultimately capable of reproduction as well*. That is, the reproductive system brings about both new life and the potential for new life. This double significance means that human reproduction stretches out into the infinite future as generation after generation unfolds. Incredible!

Skeletal System KEY

Directions: Using the provided pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 911-913, 915)

1. What are the two divisions of the skeletal system? Axial and Appendicular .
2. The membrane around bones that supplies nutrients and signals pain is called the periosteum .
3. Bones are composed of two main kinds of bone tissue: compact bone and cancellous or spongy bone .
4. What are the two kinds of bone marrow? Yellow and red .
5. List the three kinds of joints. Fixed joints , semi-movable , and movable joints .

Function (pp. 913-916)

6. Bone marrow is found at the center of many bones. What does it do? **Yellow bone marrow is an energy store of fat. Red marrow produces red blood cells, platelets, and white blood cells.**
7. Describe the action of two different types of movable joints:
 - a. **The shoulder joint is a ball-and-socket joint, meaning it can move in multiple planes due to the structure of the joint. The arm can move in all directions to a certain extent, including some slight rotation in the joint.**
 - b. **The semi-movable joints where vertebrae meet allow for some flexing and slight rotation, but remain very stable. The combination allows for movement while securing the spinal cord within.**
8. What is the function of fixed joints? **Fixed joints are found in the skull where bones have essentially fused together.**
9. Ligaments connect bones to bones .
10. Summarize how bones elongate.

Bones grow from the middle out. Once the ends of a bone forms, the bone elongates by knitting together new bone tissue in the middle of the bone. This forces the already-formed ends to move outward as the bone elongates.

11. What is the difference between the axial and the appendicular skeleton?

The axial skeleton is the “center mass” of the body, and its parts come together at fixed or semi-movable joints. The appendicular skeleton (the limbs) is connected to the axial skeleton by way of semi-movable or movable joints. The difference is the type of joints contained in each, and the function of each. The axial skeleton can be thought of as the “core” of the body, while the appendicular made of the limbs. Worth noting - the axial skeleton houses the organs relating to the internal function of the individual (except the sense organs), while the appendicular skeleton seems to be made of the parts we use to interact with external things.

Muscular System KEY

Directions: Using the provided pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 919, 921-922)

1. Skeletal muscles are made of strands called Muscle fibers.
2. Each one of those strands is made of protein filaments called myofibrils.
3. The thicker kind of protein filament is called myosin. The thinner kind is called actin.
4. The tough tissue that connects muscle to bone is a tendon.
5. Muscles require lots of energy. Therefore, muscle cells usually contain many of which organelle?
Mitochondria.

Function (pp. 918-919, 921-922)

6. Which kind of muscle tissue is activated when lifting a sack of flour? Skeletal muscle.
7. Which kind of muscle tissue helps move waste along the digestive tract? Smooth muscle.
8. How do muscles allow for movement of the body?

When muscles contract, they shorten. Because they are connected to the bone, when they shorten, they “pull the bone in a certain direction. When muscles relax, that “pull is undone, and the bone moves the other direction .

9. Why does strenuous activity cause oxygen debt? What is the result?

Large amounts of oxygen are needed to maintain the ATP production required for strenuous activity like sprinting or jumping. After several minutes of heavy exertion, the circulatory system can’t keep up with the demand, so the muscles become starved for oxygen. The result is a build up of lactic acid in muscle cells. Ouch!

10. Do muscles push? Do they pull? What do they do?

As discussed in #8, muscles do not push nor pull. They contract. This contraction causes the muscle to tense up and shorten, which “pulls” on the bones or it is connected to, resulting in movement.

11. Using the anatomy on p. 917 (and your own experience), list the muscles involved in a pushup. Why do we call this a “push” motion?

The main muscles involved are:

Pectoralis, triceps, deltoid, trapezius, and abdominal muscles.

The contracting of various muscles work together to straighten the arms and “push” the hands away from the body, while keeping the rest of the body in a good posture. That particular combination of contractions results in a pushing motion.

Cardiovascular System KEY

Directions: Using the provided charts and pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 933, 936-937)

1. What is the main organ of the cardiovascular system? **The heart**
2. The second major component of the cardiovascular system are **blood vessels**.
3. **Arteries** are the blood vessels that carry blood *away* from the heart.
4. **Veins** are the blood vessels that carry blood *to* the heart.
5. **Capillaries** are the blood vessels whose walls are thin enough for gases and nutrients to diffuse across through the wall.

Function (pp. 940-941)

6. **Plasma** is the component of blood that carries nutrients and metabolites to cells.
7. Red blood cells are responsible for the transport of **oxygen** to all parts of the body.
8. **White Blood Cells** defend the body against disease by engulfing invading pathogens using phagocytosis.
9. Why must the blood pass through the pulmonary circuit before it is pumped to the body tissues?

The pulmonary circuit circulates the blood through the lungs where the blood is reoxygenated. The body tissues are then able to receive oxygen from the blood.

10. What regions of the body does the circulatory system affect?

The circulatory system affects all regions of the body because all cells are supplied oxygen via the blood. They also receive other nutrients and discard waste via the blood.

11. Could the body function without a functioning circulatory system? Describe what would happen in the body if the circulatory system did not fulfill its role.

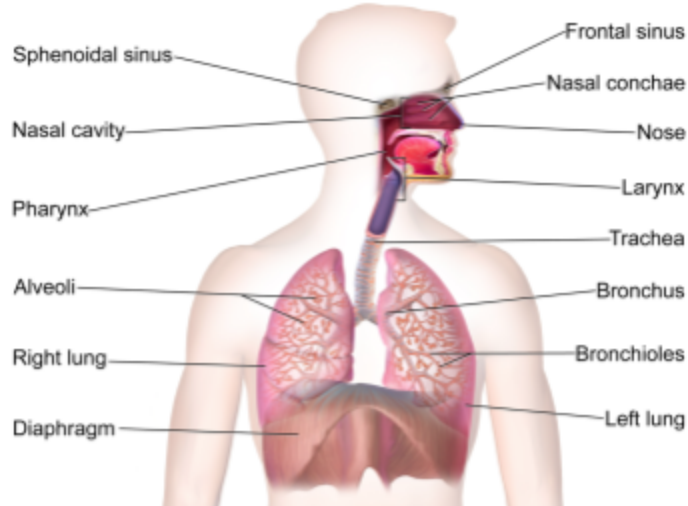
The body could not function without a functioning circulatory system. If the circulatory system did not fulfill its role then all tissues not exposed to air would die of oxygen starvation. Waste products would also accumulate in cells and cells would not receive all the necessary nutrients for growth.

Respiratory System KEY

Directions: Using the provided charts and pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 946-947)

1. Label the missing structures



2. List the missing structures air passes through during inhalation.
 - I. Nose or mouth
 - II. Pharynx
 - III. Larynx
 - IV. **Trachea**
 - V. **Bronchus**
 - VI. Bronchiole
 - VII. **Alveolus**

Function (pp. 946-948)

3. Describe the differences between internal and external respiration.

Internal respiration is the exchange of gases that occurs between tissues and the blood while external respiration is a direct exchange of gases between tissues and the atmosphere. External respiration occurs in the lungs.

4. Why is the function of the respiratory system crucial to the function of the circulatory system?

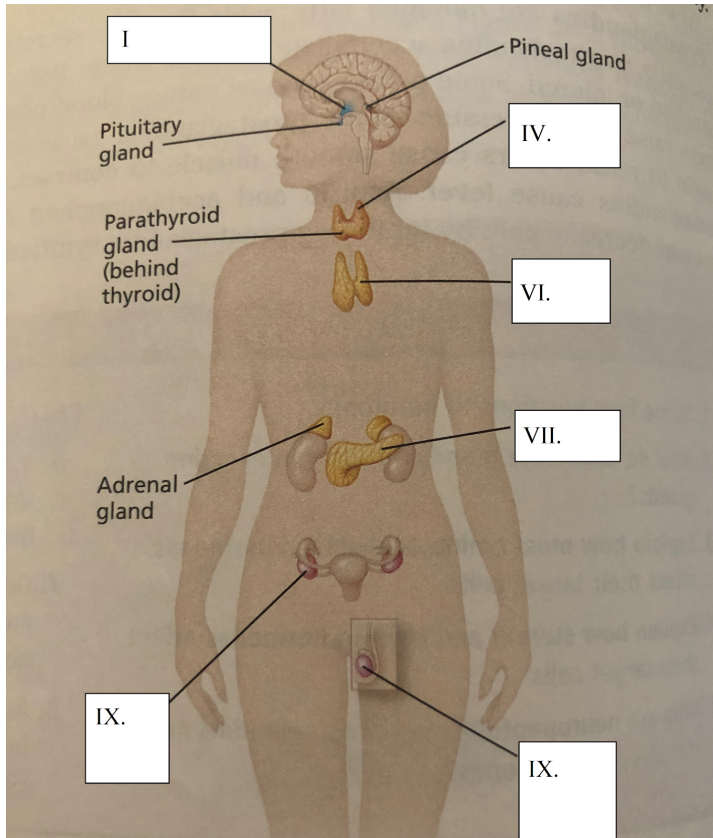
Without the function of the respiratory system, the blood of the circulatory system cannot be reoxygenated. One of the major functions of the circulatory system is to facilitate internal respiration so that internal cells can survive without direct contact with the atmosphere.

Endocrine System KEY

Directions: Using the provided charts and pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 1034)

Label the missing structures of the endocrine system



- I. **Hypothalamus**
- II. Pineal gland
- III. Pituitary gland
- IV. **Thyroid gland**
- V. Parathyroid gland
- VI. **Thymus gland**
- VII. **Pancreas**
- VIII. Adrenal gland
- IX. **Ovaries (female)/
Testis (male)**

Function (pp. 1035-1039) - for the glands *provided* above, list the hormones they secrete, and the final cause of that hormone.

| <i>Gland</i> | <i>Hormone(s)</i> | <i>Function of Hormone(s)</i> |
|---|---|---|
| Pineal gland | Melatonin | Regulates sleep patterns |
| Pituitary gland (choose four hormones) | <ol style="list-style-type: none"> 1. Antidiuretic hormone (ADH) 2. Growth Hormone (hGH) 3. Oxytocin 4. Thyroid-stimulating hormone (TSH) | <ol style="list-style-type: none"> 1. Stimulates reabsorption of water by kidneys 2. Regulates development of muscles and bones 3. Stimulates estrogen and progesterone production 4. Regulates thyroid hormone secretion |
| Parathyroid gland | Parathyroid hormone | Increases blood calcium concentration |
| Adrenal gland (cortex and medulla) | <ol style="list-style-type: none"> 1. Aldosterone 2. Cortisol | <ol style="list-style-type: none"> 1. Promotes salt and water retention 2. Promotes production of glucose from proteins |

1. What is the difference between positive and negative feedback mechanisms (p.1041-1042)?

Negative feedback mechanisms inhibit the initial signal, slowing the secretion of particular hormones. Positive feedback mechanisms stimulate further hormone secretion. Both mechanisms share a final cause: to regulate and balance hormone secretions over time. They differ because one stops secretion, and does not.

2. Why might an overactive parathyroid gland cause bone problems?

The parathyroid gland regulates blood calcium levels. An overactive parathyroid would cause an excess of calcium in the blood. Since blood calcium is essential to bone development, abnormal calcium levels could affect bone development.

Reproductive System KEY

NB: The cultural and social aspects of human reproduction are deeply personal and beyond the scope of this class. This worksheet will offer an overview of the physiology of human reproduction only.

Structure (pp. 1049-1051, 1052-1053)

List the organs of the human male reproductive system in order of their contact with a sperm cell.

19. Testis

20. Epididymis

21. Vas deferens

22. Seminal vesicle

23. Urethra

List the parts of the human female reproductive system in the order of their contact with an egg cell.

24. Ovaries

25. Fallopian Tubes

26. Uterus

27. (Cervix)

Function

28. The period of life before the reproductive system is functional is called childhood.

29. The period of life when the reproductive system is developing is called adolescence.

30. The period of life marked by a functional reproductive system is called adulthood.

31. What is the final cause of the human reproductive system?

The final cause of the human reproductive system is to produce human sex cells in preparation for sexual reproduction. Ultimately, more humans!

32. Is the reproductive system essential for survival?

While the reproductive system is essential for the survival of the species, it is NOT essential for the survival of the individual.

33. The reproductive organs produce a unique type of cell, different from all other cells. What are these cells called, and how are they different?

The reproductive system produces sex cells, or gametes. Gametes are different because: 1. They contain half the usual number of chromosomes, 2. They are unique to the sex of the organism that produces them (males produce sperm cells, females produce egg cells). 3. They can combine with gametes of the opposite sex to form a zygote.

34. What is the name of the process by which sex cells are produced?

Meiosis. Specifically, spermatogenesis and oogenesis.

35. Can a brother and sister be identical twins? If so, how? If not, why not?

No. Identical twins have identical DNA. If two organisms have identical DNA, they cannot be of different biological sexes.

36. Please read: Every other human system maintains the life of the human to which they belong. When that life comes to an end, so do the systems that supported it. The reproductive system is unique because it brings new lives into the world *that are ultimately capable of reproduction as well*. That is, the reproductive system brings about both new life and the potential for new life. This double significance means that human reproduction stretches out into the infinite future as generation after generation unfolds. Incredible!

Digestive System KEY

Directions: Using the provided pages in your textbook to answer the following questions in complete sentences or fill in the blanks.

Structure (pp. 985-991)

- Sort the following structures of the digestive system according to if they come into direct contact with food: mouth, liver, esophagus, stomach, pancreas, small intestine, large intestine, gallbladder

| DIRECT CONTACT | NO DIRECT CONTACT |
|---|----------------------------------|
| Mouth Esophagus Stomach Small Intestine Large Intestine | Liver Pancreas Gallbladder |

- Using the structures listed in “direct contact” above, order them according to how food travels through the body:
 - Mouth
 - Esophagus
 - Stomach
 - Small Intestine
 - Large Intestine
- The **Cardiac Sphincter** is the upper boundary of the stomach and the **Pyloric Sphincter** is the point where the stomach connects to the small intestines.
- The liver produces bile which is then stored and concentrated in the **gallbladder**.
- The pancreas, because it secretes hormones and juices that help to neutralize stomach acid is a part of the **endocrine** system and the **digestive** system.

Function (pp. 985-991)

- Name and describe the two types of digestion that occur in the stomach.

Mechanical digestion is the physical compression of the stomach that helps to break apart food particles. Chemical digestion is the breakdown of food via chemical interactions between stomach acid and food particles.

- Explain how peristalsis moves food down the esophagus, into the stomach.

Peristalsis is the rhythmic contraction of muscles in the esophagus that pushes food from the top of the esophagus to the bottom where it enters the stomach.

- What is the primary function of the intestines? What structural feature of the small intestines allows it to perform its function well?

The primary function of the intestines is to absorb nutrients and water from digested material. The villi of the small intestine increase the surface area through which absorption can take place.

Body Systems Quiz

Multiple Choice - Write the correct letter on the provided line.

1. ____ The ribs shift in a limited range during the process of breathing. What type of joint connects individual rib bones to the sternum at the front of the chest?
 - a. Ball-and-socket joint
 - b. Fixed joint
 - c. Movable joint
 - d. Semimovable joint
2. ____ Which structure of the respiratory system is where the event of gas exchange takes place?
 - a. Trachea
 - b. Alveoli
 - c. Bronchioles
 - d. Diaphragm
3. ____ When you blush, muscles that control the width of your blood vessels relax and the diameter of blood vessels near the surface of your cheeks expands. What type of muscle is this example describing?
 - a. Cardiac
 - b. Skeletal
 - c. Smooth
 - d. Connective
4. ____ If you have difficulty sleeping, which gland of the endocrine system could be responsible?
 - a. Pineal
 - b. Pituitary
 - c. Parathyroid
 - d. Adrenal
5. ____ Baby food is blended to have a smooth texture. Which digestive function is this aiding?
 - a. Chemical digestion
 - b. Mechanical digestion
 - c. Peristalsis
 - d. Absorption
6. ____ To which body system would an organ that is responsible for regulating the start of a muscle development belong?
 - a. Muscular
 - b. Skeletal
 - c. Endocrine
 - d. Digestive
7. ____ What type of blood vessel would carry blood from your toes to your heart?
 - a. Artery
 - b. Vein
 - c. Capillary
 - d. Tendon

Fill in the Blanks

8. During strenuous activity, oxygen is depleted in the muscles because of _____ that occurs in the mitochondria.
9. The _____ of the small intestine increase its surface area to about the size of a tennis court.
10. _____ *slow* the secretion of hormones.
11. The respiratory system relies on the _____ system to move the rib cage.
12. External respiration occurs in the _____ because this is where the atmosphere directly exchanges gases with body tissues.
13. The immune system would not be able to destroy foreign pathogens if the blood did not contain _____.
14. New bone tissue is formed in the _____ region of the bone.

Short Answer - Answer in 3-5 complete sentences.

15. The tallest man ever known was 8 feet, 11 inches tall! He suffered from a disease of the endocrine system called gigantism. Which gland was malfunctioning and which hormone did he produce in disproportionate amounts? Did he produce too much or too little of this hormone? Explain your reasoning.

16. Acid reflux is the painful sensation that occurs when stomach acid enters the lower end of the esophagus. Which structure is malfunctioning and therefore causing the symptoms? Why do you not experience pain in your stomach constantly from the acid it contains? Explain your reasoning.

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: 9 Geometry

Teacher(s): Mr. Mooney sean.mooney@greatheartsirving.org

Weekly Plan:

Monday, May 18

- Review Bell Work Answer Keys
- Review Two-Column & Construction Answer Keys

Tuesday, May 19

- Bell Work 11
- VI.19 Reading
- VI.19 Two Column

Wednesday, May 20

- Bell Work 12
- VI.31 Reading
- VI.31 Two Column

Thursday, May 21

- Assessment (on Google Classroom)

Friday, May 22

- attend office hours
- catch-up or review the week's work

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

Dear Students,

Welcome to the last normal week of school (“normal” being a relative word in this anything-but-normal remote situation)! This week we continue in a manner very similar to previous weeks, with one important change.

On Thursday, I will be giving you an assessment, which you will complete on Google Classroom. There is no hard copy of this assessment in the packet, so all assessments must be taken in this online format. It is an assessment, so accuracy really counts here; it is, however, completely open notes and you may take as long as you like to complete it (as long as it is done by Sunday at midnight). This, I hope, takes off a lot of the pressure of it being an “assessment.”

We have some monumental proofs to cover this week. Proposition VI.31, as you will see, is particularly breath-taking in its beauty and profundity. I’d like to remind you, as we enter into this penultimate week of school, to take time to reflect on what you have accomplished in Geometry this year. Think back to when you struggled with the simplest of propositions, when you did not even understand what a proof was or why they were important. And now look at you! Masters of some of the most difficult and mathematically complex proofs in Book VI. How much more fit your minds are now for knowing Truth! It is a beautiful and wonderful thing.

I hope you enjoy coming to know the truths of these next two propositions. Have a wonderful week!

Sincerely,

Mr. Mooney

Monday, May 18

Today, as per usual, is a day to review your work from last week, with the goal of learning from your mistakes. I would like you to:

- 1) Review the answer keys for Bell Works 8, 9, and 10, which are simply scans of the pages which I filled in by hand.
- 2) Review the answer keys for VI.9, VI.11, VI.12, VI.13, and VI.16, and make all necessary corrections (including corrections to your constructions!). Please make all corrections in a different color.

Tuesday, May 19

Today I would like you to:

- 1) Complete Bell Work 11, which puts VI.16 into practice with proportions. (Bell Work 12 is on the same page, but you do not need to do that until tomorrow.)
- 2) Read the VI.19 Reading.

- 3) Put VI.19 into two-column notes.

Wednesday, May 20

Today, I would like you to:

- 1) Complete Bell Work 12 (to be found on the same page as Bell Work 11).
- 2) Read the VI.31 Reading.
- 3) Read VI.31 and write it out in two column notes.

Thursday, May 21

Today, I would like you to complete the Assessment, which is *not* in this packet, but can be found on Google Classroom. You may study as much as you like before you take it, and remember: it is an *open note test*. That means that while you are taking the test, you may look at *any of your own materials*: your own notes, your packets, any answer keys I've given you, the videos I posted on Google Classroom, etc. Please, of course, do not collaborate with anyone else or look at any of their materials, because that would be dishonest. If you have any questions about what is allowed or not allowed for taking the assessment, you are welcome to email me.

Friday, May 22

Great work! You have made it to the end of the week, the end of Book VI, and *very nearly* the end of the school year. Today you may use your time to finish up any work from earlier in the week, upload packets, and attend my Geometry Office Hours from 10:30 - 11:00 am (the link is still posted on Google Classroom).

Have a wonderful weekend!

Bell Work 8

Bell Work 8:

Part 1: Proportions in four terms

Directions: Complete the following numerical proportions by filling in the blank.

1. $1:2 :: 5:\underline{10}$

2. $3:4 :: 9:\underline{12}$

3. $2:3 :: 12:\underline{18}$

4. $4:\underline{5} :: 8:10$

5. $6:\underline{16} :: 3:8$

6. $\underline{5}:15 :: 3:9$

Part Two: Proportions in Three Terms

Directions: For the following proportions, fill in the two blanks with the same number to make the proportion true.

Example: $1:\underline{\quad} :: \underline{\quad}:4$ What number can go in both blanks to make the proportion true? The answer is 2, because 2 is both the double of 1 and the half of four. Thus $1:2 :: 2:4$.

7. $2:\underline{4} :: \underline{4}:8$

8. $3:\underline{6} :: \underline{6}:12$

9. $1:\underline{3} :: \underline{3}:9$

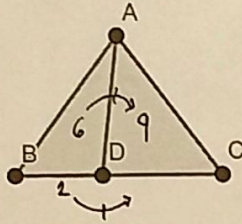
10. $1:\underline{5} :: \underline{5}:25$

Bell Work 9

Bell Work 9: Proportions in Figures (with number!)

Directions: Using your knowledge of what proportions are true in each diagram, set up a proportion to find the missing length or area.

1.



Given two triangles ABD and ADC under the same height, with

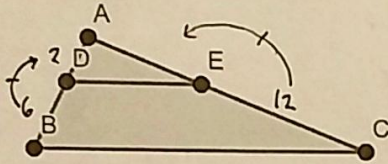
$AD = 6$

$AD = 9$

$BD = 2$

Find $DC = \underline{3}$

2.



Given triangle ABC, with $DE \parallel BC$ and

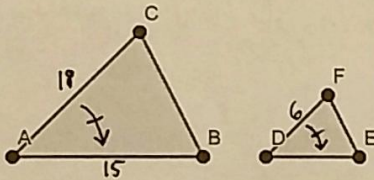
$BD = 6$

$AD = 2$

$EC = 12$

Find $AE = \underline{4}$

3.



Given similar triangles ABC and DEF, and

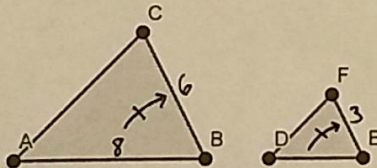
$AC = 18$

$AB = 15$

$DF = 6$

Find $DE = \underline{5}$

4.



Given similar triangles ABC and DEF, with

$AB = 8$

$BC = 6$

$EF = 3$

Find $DE = \underline{4}$

Bell Work 10: Proportions in VI.8

Part 1: For each proportion, fill in the missing line to make the proportion true by VI.8.

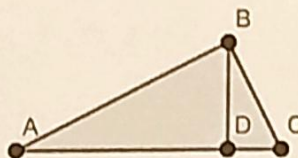
Given right triangle ABC, with right angle ABC and BD drawn

perpendicular to AC,

1) $AB:AC :: AD: \underline{AB}$

2) $AB:BC :: BD: \underline{DC}$

3) $AD:BD :: BD: \underline{DC}$

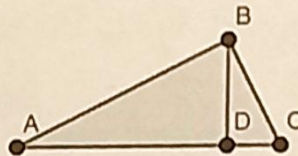


Part Two: Notice how in #3 above, the proportion is a proportion in three terms, with BD being the mean proportional. In each of these following problems, find the length of BD.

1) If AD = 4 and DC = 1, then BD = 2

2) If AD = 9 and DC = 1, then BD = 3

3) If DC = 4 and AD = 16, then BD = 8



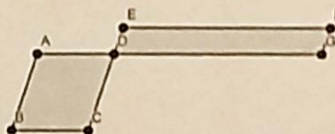
Note on VI.16:

Although I am calling this a note on VI.16, it is really more a note on VI.14, because VI.14 (which we skipped) is essential for understanding VI.16.

VI.14 says that "In equal and equiangular parallelograms the sides about the equal angles are reciprocally proportional." (It also proves the converse of this.)

The given is fairly simple: there are two parallelograms that are equal in area, and they have all angles equal. We can imagine something like this:

The parallelograms ABCD and DEFG have all equal angles, and their areas are equal as well. If this is the case, says VI.14, then the sides are *reciprocally proportional*. This means that $CD:DE :: DG:DA$. Notice how, in this



proportion, we start the first ratio with CD, part of parallelogram ABCD, and move towards DE, part of the parallelogram DEFG. If this were a case of normal proportionality, the second ratio in the proportion would also start with a side of ABCD and move to a side of DEFG. But it does not! It starts with DG, a side of DEFG, and moves to AD, a side of ABCD. Because the second ratio is in a "different direction" from the first, we call it "reciprocally proportional."

You will see in VI.16, that this is used on two rectangles, and the "reciprocal" part—the reverse in direction—is very important.

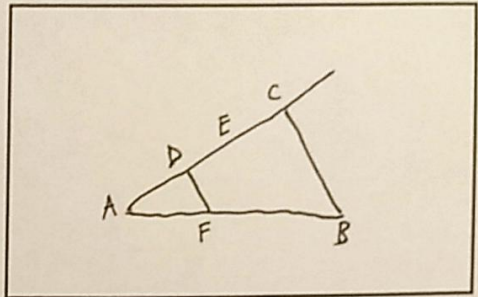
Answer Key

VI.9: From a given straight line to cut off a prescribed part.

Given: AB

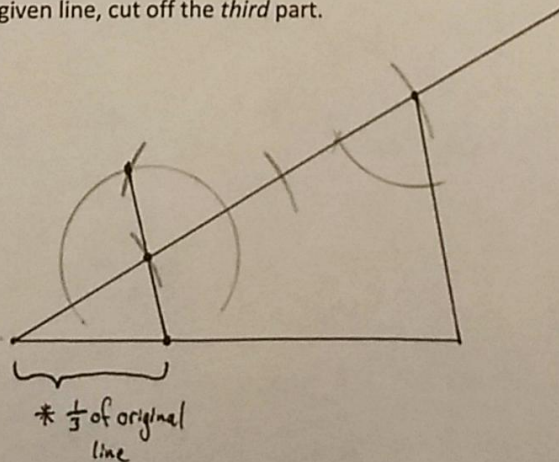
To Prove:

Cut off prescribed part ($\frac{1}{3}$)
of AB



| Statements | Reasons |
|--|--|
| 1. <u>Draw AC from A, any angle from AB</u> | 1. Post. 1 |
| 2. <u>Take D on AC at random</u> | 2. — |
| 3. <u>Cut DE and EC = AD</u> | 3. I.3 |
| 4. <u>Join BC</u> | 4. Post. 1 |
| 5. <u>Through D, draw DF // BC</u> | 5. I.31 |
| 6. <u>$\therefore CD:DA :: BF:FA$</u> | 6. VI.2 |
| 7. <u>But CD is $2 \times DA$</u> | 7. Made it that way in step 3 |
| 8. <u>$\therefore BF$ is $2 \times FA$</u> | 8. by proportion in step 6 |
| 9. <u>$\therefore BA$ is $3 \times AF$</u> | 9. taking the ratio componendo, step 8 |
| 10. <u>\therefore Prescribed part AF has been cut from AB</u> | 10. step 9 |

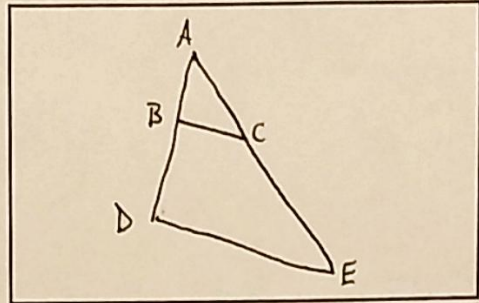
Construction: From the given line, cut off the third part.



Answer Key

VI.11: To two given straight lines to find a third proportional.

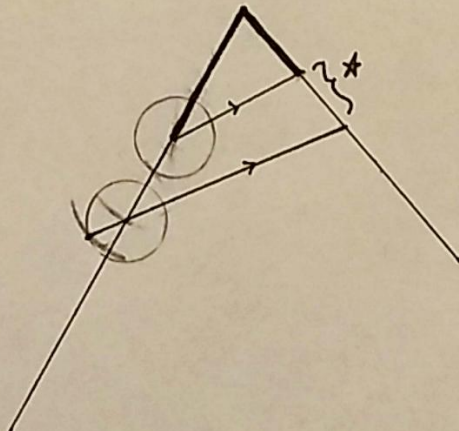
Given: BA, AC containing any angle



To Prove: Find a 3rd proportional to BA, AC

| Statements | Reasons |
|---|-------------------------------------|
| 1. <u>Extend BA, AC → D, E</u> | 1. Post. 2 |
| 2. <u>Cut BD = AC</u> | 2. I. 3 |
| 3. <u>Join BC</u> | 3. Post. 1 |
| 4. <u>Through D, draw DE // BC</u> | 4. I. 31 |
| 5. <u>∴ AB : BD :: AC : CE</u> | 5. VI. 2 |
| 6. <u>But BD = AC</u> | 6. Step 2 |
| 7. <u>∴ AB : AC :: AC : CE</u> | 7. Substitution (steps 5, 6) |
| 8. <u>∴ CE is a 3rd proportional to AB, AC</u> | 8. Definition of third proportional |
| 9. _____ | 9. |
| 10. _____ | 10. |

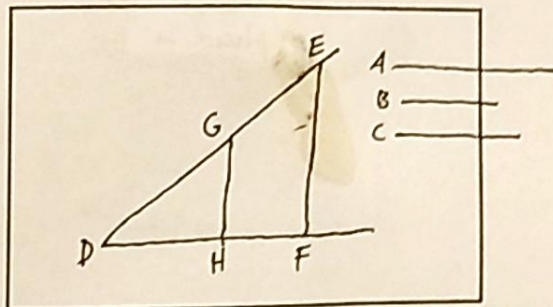
Construction: To the given two lines, construct a third proportional.



Answer Key

VI.12: To three given straight lines to find a fourth proportional.

Given: A, B, C (lines)

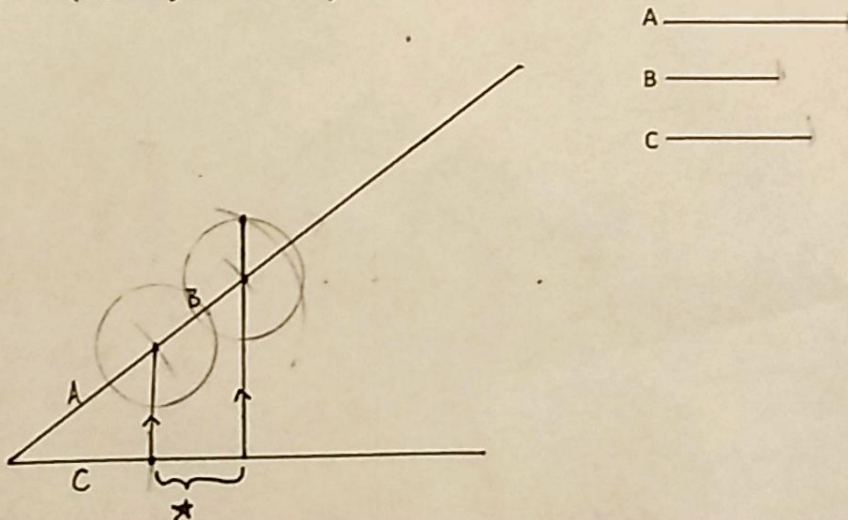


To Prove:

Find a 4th proportional to A, B, C.

| Statements | Reasons |
|---|--------------------------------------|
| 1. Draw 2 lines DE, DF at any angle EDF | 1. Post. 1 |
| 2. Cut DG = A, GE = B, DH = C | 2. I. 3 |
| 3. Join GH | 3. Post. 1 |
| 4. Through E, draw EF // GH | 4. I. 31 |
| 5. $\therefore DG : GE :: DH : HF$ | 5. VI. 2 |
| 6. But DG = A, GE = B, DH = C | 6. Step 2 |
| 7. $\therefore A : B :: C : HF$ | 7. Substitution (steps 5 & 6) |
| 8. $\therefore HF$ is 4 th proportional to A, B, C | 8. Definition of fourth proportional |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |

Construction: To the given three lines A, B, and C, construct a fourth proportional, such that $A : B :: C : (\text{the line you construct})$.



A _____
 B _____
 C _____

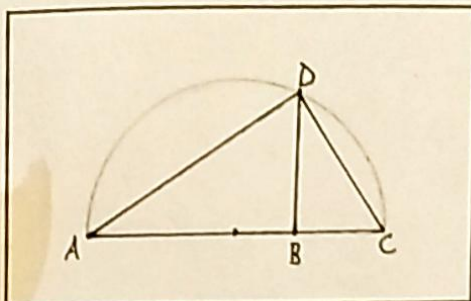
Answer Key

VI.13: To two given straight lines to find a mean proportional.

Given: AB, BC

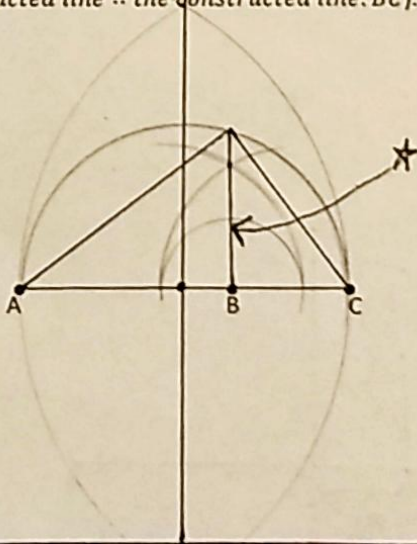
To Prove:

Find mean proportional
of AB, BC



| Statements | Reasons |
|---|--|
| 1. <u>Let AB, BC be in a straight line</u> | 1. — (This could be justified w/ Post. 2 + I. 3) |
| 2. <u>Draw semicircle ADC on AC</u> | 2. Post. 3 (+ I. 10) |
| 3. <u>From B, draw $BD \perp AC$</u> | 3. I. 11 |
| 4. <u>Join AD, DC</u> | 4. Post. 1 |
| 5. <u>$\angle ADC$ is \angle</u> | 5. III. 31 |
| 6. <u>$\therefore DB$ is mean proportional to AB, BC</u> | 6. VI. 8. Porism ($\triangle ADC$, $BD \perp AC$) |
| 7. _____ | 7. _____ |
| 8. _____ | 8. _____ |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |

Construction: To the two given straight lines, find a mean proportional (such that AB: the constructed line :: the constructed line: BC).

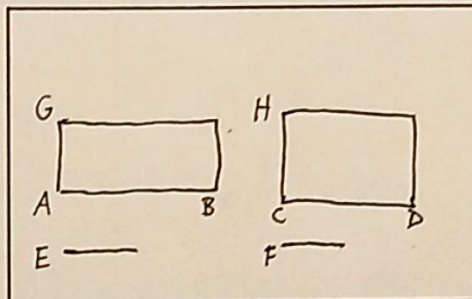


Answer Key

VI.16 (Part 1): If four straight lines be proportional, the rectangle contained by the extremes is equal to the rectangle contained by the means...

Given: $AB:CD :: E:F$

To Prove: $\text{Rect. } AB \times F = \text{Rect. } CD \times E$



| Statements | Reasons |
|--|---|
| 1. From AC draw $AG \perp AB, CH \perp CD$ | 1. I.11 |
| 2. Cut $AG = F, CH = E$ | 2. I.3 |
| 3. Complete \square 's BG, DH | 3. — (This can be justified w/ I.31 & I.34) |
| 4. $AB:CD :: E:F$ | 4. Given |
| 5. $E = CH$ and $F = AG$ | 5. step 2 |
| 6. $\therefore AB:CD :: CH:AG$ | 6. substitution (steps 4 & 5) |
| 7. $\therefore \square BG = \square DH$ | 7. VI.14 |
| 8. And $\square BG$ is $\text{Rect. } AB \times F$, for $AG = F$ | 8. step 2 |
| 9. And $\square DH$ is $\text{Rect. } CD \times E$, for $E = CH$ | 9. step 2 |
| 10. $\therefore \text{Rect. } AB \times F = \text{Rect. } CD \times E$ | 10. CN.1/subst. (steps 7,8,9) |
| 11. _____ | 11. |
| 12. _____ | 12. |
| 13. _____ | 13. |
| 14. _____ | 14. |
| 15. _____ | 15. |
| 16. _____ | 16. |
| 17. _____ | 17. |
| 18. _____ | 18. |
| 19. _____ | 19. |
| 20. _____ | 20. |

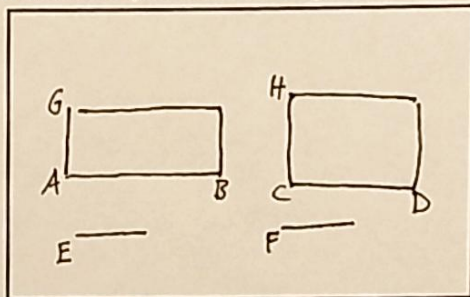
Answer Key

VI.16 (Part 2): ...and, if the rectangle contained by the extremes be equal to the rectangle contained by the means, the four straight lines will be proportional.

Given: AB, CD, E, F

$$\text{Rect. } AB \times F = \text{Rect. } CD \times E$$

To Prove: $AB:CD :: E:F$



| Statements | Reasons |
|--|-----------------------------------|
| 1. <u>Same construction</u> | 1. Part 1 (steps 1-3) |
| 2. <u>Rect. $AB \times F = \text{Rect. } CD \times E$</u> | 2. Given |
| 3. <u>And $AB \times F$ is BG, for $AG = F$</u> | 3. Construction (step 2) |
| 4. <u>And $CD \times E$ is DH, for $CH = E$</u> | 4. Construction (step 1) |
| 5. <u>$\therefore BG = DH$</u> | 5. C.N.1 / subst. (steps 2-4) |
| 6. <u>BG is equiangular w/ DH</u> | 6. All rectangles are equiangular |
| 7. <u>$\therefore AB:CD :: CH:AG$</u> | 7. VI.14 |
| 8. <u>But $CH = E, AG = F$</u> | 8. Step 1 |
| 9. <u>$\therefore AB:CD :: E:F$</u> | 9. Substitution (steps 7-8) |
| 10. _____ | 10. |
| 11. _____ | 11. |
| 12. _____ | 12. |
| 13. _____ | 13. |
| 14. _____ | 14. |
| 15. _____ | 15. |
| 16. _____ | 16. |
| 17. _____ | 17. |
| 18. _____ | 18. |
| 19. _____ | 19. |
| 20. _____ | 20. |

Bell Work 11 and 12

Bell Work 11:

Directions: Complete the following numerical proportions using the method from VI.16: the rectangle contained by the extremes will equal the rectangle contained by the means. That is, multiply the extremes, set them equal to the product of the means, and solve for the missing term. (Note: some of your answers will be fractions/decimals).

1. $3:5 :: 6:x$ $x = \underline{\hspace{2cm}}$

2. $2:3 :: x:24$ $x = \underline{\hspace{2cm}}$

3. $x:9 :: 6:10$ $x = \underline{\hspace{2cm}}$

4. $4:x :: 8:15$ $x = \underline{\hspace{2cm}}$

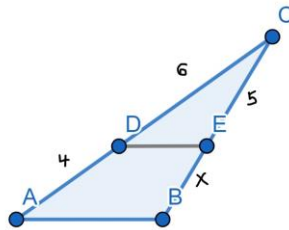
5. $3:x :: x:27$ $x = \underline{\hspace{2cm}}$

6. $3:x :: x:48$ $x = \underline{\hspace{2cm}}$

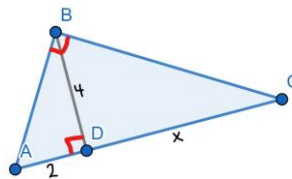
Bell Work 12:

Directions: Find the value of x in each diagram, based on your knowledge of the proportions that are true in the given situations.

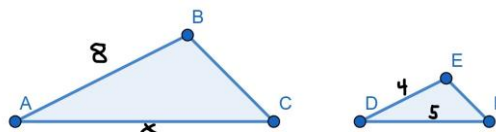
1. $x = \underline{\hspace{2cm}}$



2. $x = \underline{\hspace{2cm}}$



3. $x = \underline{\hspace{2cm}}$



VI.19 Reading

Part One: “Duplicate Ratios”

In VI.19, which you will be reading today, it says that if two triangles are similar, then they will be to one another in the **duplicate ratio** of their corresponding sides. The goal, right now, is simply to understand what is meant by that key term: duplicate ratio.

In V.Definition.9, it says that if three magnitudes be proportional, the first is said to have to the third the *duplicate ratio* of that which it has to the second. To understand this, let’s take three magnitudes—to make it simple, let’s take three numbers.

$$1:3 :: 3:9$$

The numbers 1, 3, and 9 are three proportional magnitudes. Thus, according to V.Def.9, the first (1) is said to have to the third (9), the *duplicate ratio* of that which it (1) has to the second (3).

In other words, the ratio 1:9 is the “duplicate” of 1:3. When we are thinking about number, the easiest way to think of this is “squaring” the ratio of the first to the second. That is,

$$1:9 :: (1:3)^2$$

Or, if we wrote the proportion as an equality of fractions,

$$\frac{1}{9} = \left(\frac{1}{3}\right)^2$$

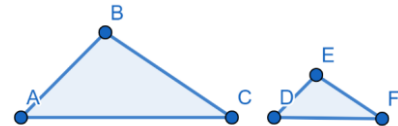
Thus, another way of stating the truth of VI.19 is: the ratios of the areas of two similar triangles will always be the square of the ratio of its corresponding sides.

Let’s practice by looking at a few examples of VI.19 with number:

If $EF=1$, $BC = 3$, and triangle $DEF = 1$, then triangle $ABC =$ _____

If $EF=2$, $BC = 4$, and triangle $DEF = 4$, then triangle $ABC =$ _____

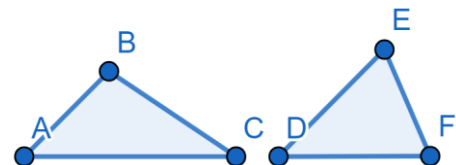
If triangle $ABC = 25$, triangle $DEF = 16$, and $BC = 5$, then $EF =$ _____



Part Two: VI.15

In last week’s packet, I made a “Note on VI.16” which was really just an explanation of a proof that lack of time forced us to skip: VI.14. In this note, I’d like to explain a related proposition, VI.15, which will be used in today’s VI.19.

In VI.15, it says that if two triangles have a pair of equal angles and have their sides reciprocally proportional, then the areas of the triangles will be equal. For example, if triangles ABC and DEF have equal angles ABC and DEF , and their sides are *reciprocally proportional*—that is, $AB:DE :: EF:BC$ —then the areas of the triangles ABC and DEF will be equal.

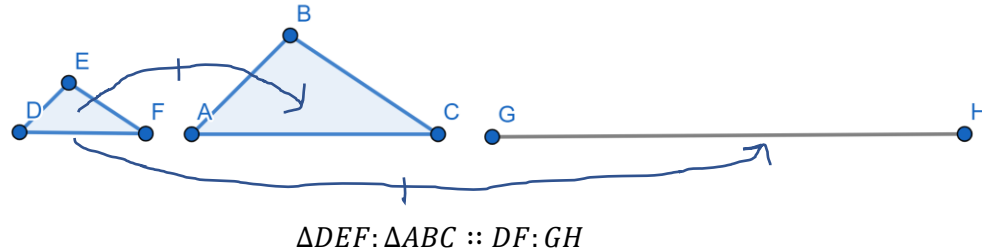


Notice especially the *reciprocal* nature of the proportion: the first ratio ($AB:DE$) moves from triangle ABC to triangle DEF ; the second ratio ($EF:BC$) *reverses* that direction, moving from triangle DEF to triangle ABC .

VI.19 Reading

Part Three: The Porism

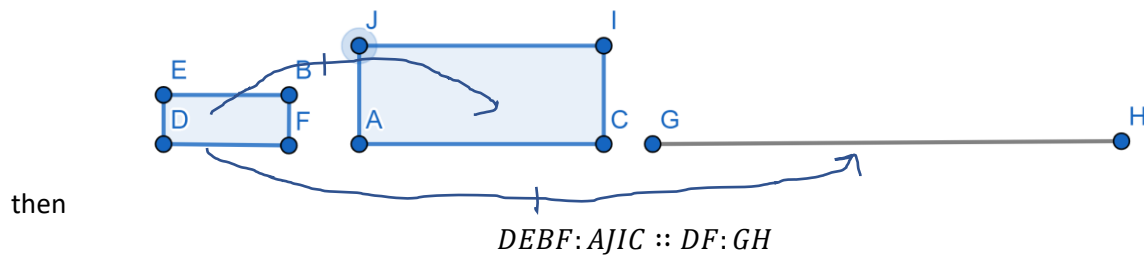
Since, as VI.19 proves, that similar triangles are to one another in the duplicate ratio of their corresponding sides, it follows that the ratio of triangle DEF to triangle ABC will be the same as the ratio of side DF to a third proportional to sides DF and AC. That is:



The Porism explicitly states that if three straight lines be proportional ($DF : AC :: AC : GH$), then the first (DF) will be to the third (GH) as the any figure built on the first (for example, $\triangle DEF$) will be to any similar and similarly described figure on the second (for example, $\triangle ABC$).

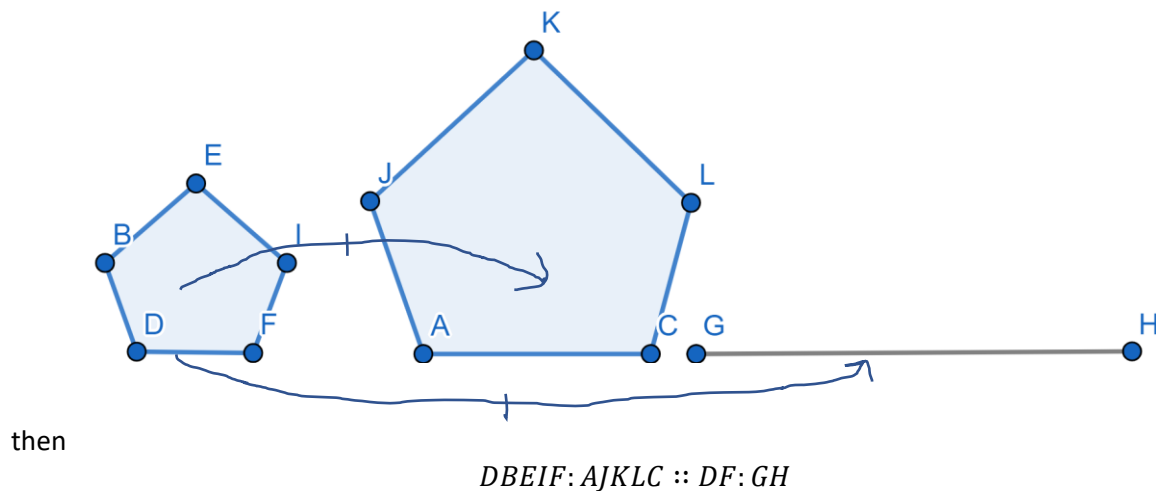
It is key to note that this is true of *any similar figures* described on the first and second of three proportional lines.

For example, if DF, AC, and GH are proportional ($DF : AC :: AC : GH$), and DEBF and AJIC are similar,



then

Or again, if the three lines are again proportional, and the two pentagons are similar,



then

VI.19: *Similar triangles are to one another in the duplicate ratio of their corresponding sides.*

Given:

To Prove:

| Statements | Reasons |
|------------|---------|
| 1. _____ | 1. |
| 2. _____ | 2. |
| 3. _____ | 3. |
| 4. _____ | 4. |
| 5. _____ | 5. |
| 6. _____ | 6. |
| 7. _____ | 7. |
| 8. _____ | 8. |
| 9. _____ | 9. |
| 10. _____ | 10. |
| 11. _____ | 11. |
| 12. _____ | 12. |
| 13. _____ | 13. |
| 14. _____ | 14. |
| 15. _____ | 15. |
| 16. _____ | 16. |
| 17. _____ | 17. |
| 18. _____ | 18. |
| 19. _____ | 19. |
| 20. _____ | 20. |

VI.31 Reading

Part One: V.24

In order to understand VI.31 today, we need one more truth from Book V that we did not cover when we studied Book V earlier. It is this:

If a first magnitude have to a second the same ratio as a third has to a fourth, and also a fifth have to the second the same ratio as a sixth to the fourth, then the first and fifth added together will have to the second the same ratio as the third and sixth have to the fourth.

Now, all of the numbering can make this enunciation difficult to understand. Let's use letters instead. Consider six magnitudes: A, B, C, D, E, F.

$$\begin{array}{l} \text{If } A:B :: C:D \\ \text{and } E:B :: F:D \end{array}$$

$$\text{then } (A + E):B :: (C + F):D$$

Do you see the pattern? B and D are the consequents in every proportion, while the antecedents of the proportions in the "if" change and then are added together in the antecedents of the "then."

Let's try an example. Fill in the missing conclusion below:

$$\begin{array}{l} \text{If } AB:CD :: EF:GH \\ \text{and } KL:CD :: MN:GH \end{array}$$

$$\text{then } \underline{\hspace{2cm}}$$

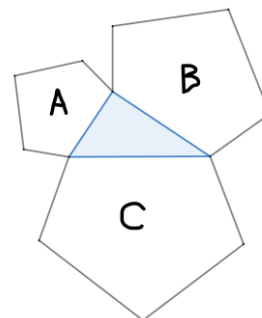
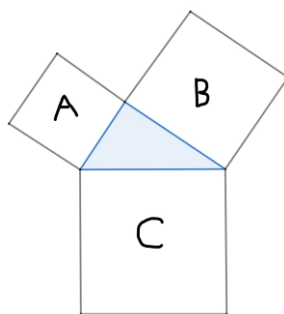
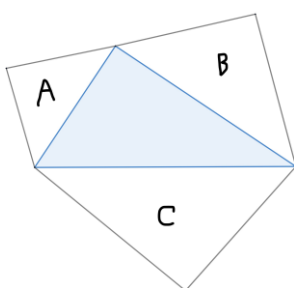
Part Two: Significance of VI.31

This proposition, VI.31, is the penultimate (second-to-last) proposition of the last book that we will study together. Do you remember the penultimate proposition of the *first* book?

It turns out—and perhaps this is no accident, but rather Euclid's love of symmetry—that this penultimate proposition of Book VI is the generalization of the penultimate proposition of Book I. That is, VI.31 is the generalization of I.47—the Pythagorean Theorem.

You remember, of course, that the Pythagorean Theorem states that in any right triangle the *square* on the hypotenuse is equal to the sum of the *squares* on the legs.

VI.31 proves that this is true *not only of squares, but of every similar and similarly described figure on the sides of a right triangle!* That is, $C = A + B$ in every case shown below!



... and so on!

VI.31 Reading

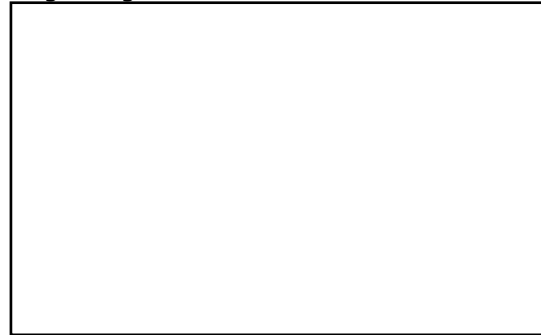
As long as the figures are similar (and similarly described), it does not matter what they look like, nor how many sides they have: it will always be true that the figures on the legs will add up in area to the figure on the hypotenuse! Who could have guessed it? It turns out that the Pythagorean Theorem is only a special case of a much broader and more universal truth!¹ Incredible!

Do you remember, at the very beginning of the year, when we proved things that you thought were obvious, and you wondered why we were proving it. I tried to explain, at those times, how we needed to establish a firm foundation, proving even the most obvious things, because they would eventually build up to the most amazing and incredible truths, ones that are very far from obvious. I think it is fitting that we encounter this incredible truth here, as our study of Euclid's *Elements* begins to draw to a close. From the great heights of this proposition, let's take a moment to look back with awe and wonder at how far we have come, one proposition at a time.

¹ Thus, the proof of VI.31 is not only a shorter and simpler, and perhaps more elegant alternative proof of I.47, but it also proves much more than I.47, extending its reach to every similar shape (not just squares).

VI.31: *In right-angled triangles the figure on the side subtending the right angle is equal to the similar and similarly described figures on the sides containing the right angle.*

Given:



To Prove:

| Statements | Reasons |
|------------|---------|
| 1. _____ | 1. |
| 2. _____ | 2. |
| 3. _____ | 3. |
| 4. _____ | 4. |
| 5. _____ | 5. |
| 6. _____ | 6. |
| 7. _____ | 7. |
| 8. _____ | 8. |
| 9. _____ | 9. |
| 10. _____ | 10. |
| 11. _____ | 11. |
| 12. _____ | 12. |
| 13. _____ | 13. |
| 14. _____ | 14. |
| 15. _____ | 15. |
| 16. _____ | 16. |
| 17. _____ | 17. |
| 18. _____ | 18. |
| 19. _____ | 19. |
| 20. _____ | 20. |

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: Humane Letters 9

Teacher(s): Mrs. Hunt (natalie.hunt@greatheartsirving.org)

Mr. McKowen (robert.mckowen@greatheartsirving.org)

Mr. Mercer (andrew.mercer@greatheartsirving.org)

Weekly Plan:

Monday, May 18

- Prepare for a seminar on *The Tempest* Acts III-V
- Watch the brief video on comedy and tragedy posted on Google Classroom

Tuesday, May 19

- Attend mandatory Zoom seminar
- Brief writing on Acts III-V of *The Tempest*

Wednesday, May 20

- Analysis of a theme from *The Tempest*
- Prepare for History Assessment

Thursday, May 21

- History Assessment
- Prepare for Tuesday Seminar

Friday, May 22

- Attend office hours
- Catch-up or review the week's work
- Upload your work to our Google Classroom

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

Monday, May 18

1. Watch the brief video on comedy and tragedy on the Classwork page of our Google Classroom.
2. Prepare for tomorrow's seminar on Acts III, IV, and V of *The Tempest*:
 - a. Thorough preparation involves reviewing the book, gathering citations to read aloud, and answering the following questions. It may be helpful to read the question aloud and practice speaking your answer, or even to jot down a few notes for each question. You may expect cold calling for our seminars and given this virtual setting, your participation is imperative to a great conversation! Do not be shy to share your thoughts during our conversation; we are working together to come to the truth.

Act III:

- What is Ferdinand doing when Miranda finds him? How does he estimate this task? What does she say when she sees his predicament?
- Analyze Ferdinand's response to Miranda's name. Note the word-play.
- Miranda, in speaking to Ferdinand, is conscious of breaking her father's "precepts" (III.1.69). What does this add to our estimation of her character? Prospero, who watches all of this unfold, is not upset at her disobedience. Why is that? What do we make of the contradiction in his words in III.1.111-113?
- Consider the way Ferdinand and Miranda speak to one another in this scene. How are they alike, and how are they different? Who leads the conversation to marriage, and what might that indicate about their respective characters?

Act IV:

- Why does Ariel ask, "Do you love me, master?" IV.1.52. How does Ariel view Prospero? What type of relationship do they have? What is Prospero's response?
- Analyze Prospero's brief speech on IV.1.163-180. What do these lines mean and how does Shakespeare speak through them?
- What is the point of the masque?
- How does Prospero respond to Caliban?

Act V:

- Why does Prospero initially lie to King Alonso?
- What does Miranda's reaction to the people tell us about her? How does she view humanity?
- Prospero chooses mercy and forgiveness instead of enacting justice. What does this share about his character? How did he come to the decision to have mercy on his enemies rather than prosecuting his just revenge?
- Read the epilogue aloud. Analyze what Prospero (and Shakespeare) are saying here.

Tuesday, May 19

1. Please see the Google Stream for your link to the mandatory seminar. Remember to use your own name so that your teacher can admit you from the waiting room, and be prepared to keep your camera on and directed at your face throughout the seminar.

2. Choose one of the Acts III-V questions that was **not** discussed in the seminar and answer it in one to two paragraphs. Cite the text. (Ex. IV.1.163-180)

Wednesday, May 20

1. Considering the play as a whole, trace a theme throughout the development of a character or through the development of the plot. Choose three moments in the text to illuminate using thoughtful analysis of carefully chosen quotations from the play. Your composition should be 1 typed, double spaced page. You must write on one of the following themes:
 - a. Education
 - b. Good government
 - c. Freedom
2. Prepare for tomorrow's history assessment by reviewing your textbook and notes on chapters 27-30.

Thursday, May 21

1. Please log on to Google Classroom to complete the ch. 27-30 History Assessment posted on the Classwork page. You may use your textbook and notes.
2. When you have finished the History Assessment, please prepare for our last seminar together on Tuesday.

The Last Freshmen Humane Letters Seminar:

We are going to conclude our time together with a broader seminar over the books, stories, and poems studied this year. As you prepare for this final seminar, please gather textual evidence and ideas from what you have studied. Here are the books we have read together this year: *A Documentary History of the United States*, *Billy Budd*, *The Federalist Papers*, *Democracy in America*, *Huckleberry Finn*, *The Great Gatsby*, *Old Man and the Sea*, and *The Tempest*.

Congratulations on your diligent efforts during your first year as a Humane Letters student. We're looking forward to a great conversation on Tuesday.

1. In any discussion of literature, a central focus is the presence of **conflict**. Often the conflicts in what we read – and arguably in the history that we study – stem from the difficulty of living in common with other people. Yet it seems inescapable that we must live with others.

How does what we have read this year, and what we have studied in history or government, reflect the enduring tension between living in common with others and finding personal happiness?

- A. From what does conflict between people arise? (The French Enlightenment philosopher Rousseau said it is our capacity for reason that gets us in trouble, because we learn from reason how to compare ourselves to others. The Western spiritual tradition would blame a

tendency toward selfishness, or cite certain “deadly sins” as the source of trouble. What do our texts suggest?)

- B. What do different texts suggest as solutions to this basic conflict, if any solutions are possible?
 - If a solution is not possible, what force *keeps* us in conflict? Why isn’t it always possible to resolve the issue?
- C. What is the role or purpose of **law** in helping people live together? How effectively does law allow men to live peaceably together? Does law have its limitations? If law is not enough, what needs to supplement (be added to) it, for people to live together?

2. Looking at what we have read and studied, what is the fundamental nature of man?

- A. Man is often said to be the only rational animal. To what degree does our reading and our discussion of people in society support the idea that humans are rational beings?
- B. The Declaration of Independence speaks of the inalienable right to “the pursuit of happiness.” What does it take to become happy, if happiness is achievable? What works against our happiness? Which characters in what we have read achieve happiness, and how? Which characters particularly fail to do so, and why?

3. Jay Gatsby, Manolin, and Prospero are each pulled toward their past life in a monumental way.

To what extent are we continually affected by our past?

You can consider this from the viewpoint of the mentioned characters in stories, and from the standpoint of our nation’s history via the *Documentary History*. For the latter, consider how we continue to deal with issues that have been part of our history as a nation, even as conditions have changed. Have we made progress?

Friday, May 22

- 1. Come to office hours to ask your questions.
- 2. Submit all work on Google Classroom. For Week 8 you must submit:
 - a. Short composition on Acts III-V
 - b. 1 page thematic analysis
 - c. History Assessment

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: 9 Latin III

Teacher: Mr. Bascom john.bascom@greatheartsirving.org

Supplemental Link: [CLC Unit 4 Dictionary](#)

Weekly Plan:

Monday, May 18

- Read *carcer* I
- Answer questions 1-4 on page 103

Tuesday, May 19

- Read *carcer* II
- Answer questions 1-4 on page 104

Wednesday, May 20

- Read *incendium* I
- Answer questions A 1-7

Thursday, May 21

- Read *incendium* II
- Answer questions 1-4

Friday, May 22

- attend office hours
- catch-up or review the week's work

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

My dear 9th graders,

Our strange 4th quarter is drawing to a quiet and anticlimactic close. This will be your final week with your textbooks (next week, our final week, I'll give you some light reading that does not require textbooks). For this week, you will read two more letter exchanges between Pliny and Trajan. I have not given you any grammar specific questions. I hope you enjoy reading these letters. If you get stuck or become confused, please feel free to email me or attend office hours on Friday.

Yours,

Mr. Bascom

Monday, May 18

1. Read *carcer* I
2. Answer questions 1-4 on page 103

Tuesday, May 19

1. Read *carcer* II
2. Answer questions 1-4 on page 104

Wednesday, May 20

1. Read *incendium* I
2. Answer questions A 1-7

Thursday, May 21

1. Read *incendium* II
2. Answer questions 1-4

Friday, May 22

Catch up on the week's work and attend office hours if you wish.

Remote Learning Packet - Week 8

May 18-May 22, 2020

Course: Music

Teacher(s): Mr. Zuno leonardo.zunofernandez@greatheartsirving.org

Weekly Plan:

For the past seven weeks, you have been reading about musical concepts and styles, and this week you will demonstrate what you have learned by writing five paragraphs following the [guidelines](#), found on pp. 2-3 of this packet. Attention, **students who have turned in a Concert Review earlier this semester**. Since you already did a substantial amount of work with that assignment, you may [complete this assignment \(click here\)](#) instead of the final assessment. (Everyone, else, please proceed.)

Monday, May 18

- If you haven't already done so, please select one composer for each of the following style periods (Baroque, Classical, and Romantic).
- Listen to the music about which you are about to write. (Your options will be on Google Classroom; remember, choose one major work for each composer you select. You will select one composer from the Baroque, one from the Classical, and one from the Romantic periods.)
- Write or type your introduction paragraph #1 for the final assessment (see instructions below).

Tuesday, May 19

- Listen to the music about which you are about to write. (Your options will be on Google Classroom.)
- Please review the biographical information about the composer you selected.
- Write or type your paragraph #2 and begin paragraph #3 for the final assessment (see instructions below).

Wednesday, May 20

- Listen to the music about which you are about to write. (Your options will be on Google Classroom.)
- Please review the biographical information about the composer you selected.
- Finish paragraph #3 and write all of paragraph #4 for the final assessment (see instructions below).

Thursday, May 21

- Listen to the music about which you are about to write. (Your options will be on Google Classroom.)
- Please review the biographical information about the composer you selected.
- Write or type your paragraph #5 for the final assessment (see instructions below).

Friday, May 22

- Please read your essay out loud and look for ways to polish it. Make sure you are using the terminology used in the handouts for weeks 1-7 and make sure to use good examples and accurate use of terminology.

Music Final Assessment Directions

Attention, **students who have turned in a Concert Review earlier this semester:**

Since you already did a substantial amount of work with that assignment, you may [complete this assignment \(click here\)](#) instead of the final assessment. (Everyone, else, please proceed.)

For the majority of students who did not get an opportunity to turn in their concert reviews, this final assessment will replace the concert review. You will write the following:

-This may be neatly hand-written (and then scanned and uploaded) or typed and submitted (on a Google Doc I will provide) using Arial or Times New Roman font, (size 12 pt), double-spaced, and with 1 inch margins.

-You will write this by following prompts for each day between Monday, May 18 through Thursday, May 21.)

-Please use terminology from the Week 1-7 packets to demonstrate what you have learned, in addition to your observations about the music. Use the same type of reasoning you have used in your listening logs, but focus on specific things that happen in the music, as opposed to how it makes you feel. In other words, point to objective descriptions about the music by using accurate technical language.

Format:

Each paragraph will be a minimum of 5 sentences, and you must address the questions for each paragraph and use the vocabulary in the list:

- 1) **Introductory Paragraph #1** - The purposes of different music you listened to (i.e. dance, display of virtuosity, entertainment of an audience, enjoyment, etc.). Please also provide some background on the performer(s). Focus on the variety of styles you listened to. This paragraph should be more general, while paragraphs 2-4 will point to more specific qualities of the music.
- 2) **Paragraph #2** - Baroque period
- 3) **Paragraph #3** - Classical period
- 4) **Paragraph #4** - Romantic period

For each of these paragraphs listed above, **you will focus on one composer of your choice from each period and one major work from this composer.** I will provide repertoire selections, and **you will choose one piece from these options for each composer you select.** In each of these paragraphs (#2-4), you will provide information about the piece(s) you listened to. Please use the following guiding questions to provide detailed information:

-Tempo of the piece; key of the piece (major or minor?) How does the tempo and the key affect the overall character of the piece?

-Types of instrument(s) used: The various families of instruments present in the orchestra. If this recital/concert involved a single family of instruments, what are the various types of expression and sounds you heard from the instrument(s)?

-How would you describe the texture of each piece? Were there many instruments playing together? What kinds of sounds from the instrument families did you hear?

-Single movement or multi-movement work; if it was a single movement, was there contrast throughout the piece? If so, what kind of contrasts did you listen to? If it was a multi-movement work, what were those movements, and how did they provide variety?

-Was this absolute or program music? Absolute music generally has a non-descriptive title, like *Sonata No. 1 in C major*, whereas program music is associated to a non-musical concept, such as '*The Tempest*' *Sonata*.

-Was the melody memorable and singable or difficult to trace? Did the instruments interact with one another?

- 5) **Conclusion Paragraph #5** - Describe your favorite piece from these selections, and why. Also, please mention the favorite piece and your favorite composer that you encountered this semester (not necessarily for this project). Finally, please write about something new you learned from keeping a listening log.

Length:

The length of this essay for you is between 350-400 words. You may go over 400 words, but please write no more than 450. Try to average about 70-80 words per paragraph.

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: Physical Education

Teacher(s): John.Bascom@GreatHeartsIrving.org
Joseph.Turner@GreatHeartsIrving.org
James.Bascom@GreatHeartsIrving.org

Weekly Plan:

Monday, May 18

General Mobility Routine

Tuesday, May 19

Workout

Wednesday, May 20

General Mobility Routine

Thursday, May 21

Workout

Friday, May 22

Attend Office Hours (Not mandatory)

General Mobility Routine (Not mandatory)

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

Monday, May 18

General Mobility Routine (15-20 minutes)

Complete Part I and II and record how long it took you. Also, record whether or not you were able to complete all of the exercises. If you had trouble with any specific exercises make note of these.

Note: no equipment is required for this workout and only a minimum of space. If space is a challenge make modifications as necessary.

We will have a video uploaded under the Week 6 Topic demonstrating all the exercises for the General Mobility Routine.

PART I:

1. Warmup by running for 2 minutes.
2. Then begin in a resting squat for 30s
3. Bear crawl forwards about 5 feet then straight back.
4. Step back into a pushup position
5. Perform 5 pushups
6. Downdog for 30s
7. Updog for 30s
8. Return to a pushup position
9. Perform 5 pushups

10. Stand up & perform 20 jumping jacks, 10 squats, 10 lunges, and 5 burpees
11. Return to a resting squat for 30 seconds
12. While in resting squat, perform 2 shoulder screws forwards, then 2 backwards, both sides
13. Bear Crawl sideways about 5 feet then return straight back
14. Step back into a pushup position
15. Step your right foot up directly outside your right hand
16. Then reach straight up toward the sky with your right hand & hold for 30s
17. Return to pushup position
18. Step your left foot up directly outside your left hand
19. Then reach straight up toward the sky with your left hand & hold for 30s

20. Return to pushup position
21. 5 pushups
22. Step your feet up to your hands and return to a resting squat
23. Remaining in the squat, grab your left ankle with your right hand and reach straight up toward the sky with your left hand & hold for 30s

24. Remaining in the squat, grab your right ankle with your left hand and reach straight up toward the sky with your right hand & hold for 30s
25. Hands down behind you Crab Walk forwards about 5 feet then straight back
26. Stand up & perform 20 jumping jacks, 10 squats, 10 lunges, and 5 burpees
27. Perform 3 slow Jefferson Curls
28. Rolling Bear Crawl x1 revolution one direction
29. Back Bridge for about 10-15 seconds
30. Rolling Bear Crawl x1 revolution in the opposite direction
31. Find a low hanging branch, pullup bar, ledge, rings, etc. to hang from for as long as you can hold

PART II:

1. Get into a plank
2. Alternate touching opposite elbow and knee for a total of 10 touches
3. Gorilla Hop x2 to the right
4. Gorilla Hop x 2 back to the left
5. Stand and perform 10 steam engine squats (fingers locked behind your head, every time you stand up from a squat touch opposite knee/elbow)
6. Hurdler's walk x6 steps forward
7. Hurdler's walk x6 steps backward
8. Frog Hop x2 forwards
9. Frog Hop x2 backwards

10. Get into a long lunge position
11. Keeping front foot flat on the ground, without touching the back knee to the ground, and trying to keep torso straight up and down slowly lower hips toward the ground. Hold for 15 seconds
12. Switch legs and repeat (hold for 15 seconds)
13. 3 slow Jefferson Curls
14. Rolling Bear Crawl x1 revolution one direction
15. Back Bridge for about 10-15 seconds
16. Rolling Bear Crawl x1 revolution in the opposite direction
17. Find a low hanging branch, pullup bar, ledge, rings, etc. to hang from for as long as you can hold

Tuesday, May 19

Context: Today we will work on hip mobility.

Setup: If you are able to try to watch and follow along with the video we posted last week. If not you can follow the directions listed below to the best of your ability. For this mobility session we are going to use the resting squat as our baseline. Before you do any exercises today spend some time in the resting squat.

Pay attention to how deep you can get into it. Try to push your knees out to the side. Try to touch your forehead to the ground. Try to turn right and left to look behind you without moving your feet. How did these feel? You will repeat these quick tests at the end of the session so try to remember how comfortable/uncomfortable/easy/difficult this was.

Warmup: 1 minute light jog, 20 jumping jacks, 10 lunges, 4 jump squats, 1 minute light jog

Workout: 4 exercises

- Exercise one: One leg forward, one leg back: The front leg is the focus: try to get this leg into the resting squat position and put your weight on this leg. Ideally we want the back leg straight back but if this is too hard you can do whatever you want so long as the back leg is out of the way. In this position do some of the same things listed above: look left, look right, put your head down, look up, etc. Spend 90-120 seconds on each leg.
- Exercise two: Standing hamstring stretch: Keeping your legs basically straight reach down to the ground as far as you can. Spend some time here and try to relax. After you get relaxed you can work through some variations: keeping legs straight shift your weight forward and stand up on the balls of your feet, shift your weight back to your heels and try to lift your toes off the ground as high as you can, tighten your core so that your spine straightens and your back flattens (alternate a few times between this and a relaxed rounded back). 90-120 seconds total.
- Exercise three: Get into a pushup position. Then, keeping one leg back, bring the other leg up so that your lower leg (shin/calf) are on the ground in front of you with your knee where one hand was and your ankle where the other hand was. Now try to relax and let your weight create a stretch. Use some of the same movements from earlier to explore this stretch: look left, look right, put your head down, look up, etc. Spend 90-120 seconds on each leg.
- Exercise 4: The dreaded Couch Stretch: Start kneeling on the ground in a lunge position with your back to a solid surface and, ideally, something soft underneath your knee. You are going to lift the back foot up so that your toes are pointing towards the ceiling and push yourself back to the wall so that your shin and the top of your foot are flat against it. Then engage your glutes and try to lift your torso up as straight up and down as possible. Try to hold this for about 90 seconds on each leg.

After you've worked through these 4 exercises perform the same tests you performed at the beginning. Did you notice any improvement?

Wednesday, May 20

General Mobility Routine

Thursday, May 21

Workout: Since it was so much fun the first time around we've decided to revisit the Choose Your Own Adventure Run from Week 4. You are going to develop your own workout by choosing from the sets of options below. In each case "Tier 1" will be the easiest option and "Tier 4" will be the hardest option. I quadruple dog dare you to pick all Tier 4.

Option 1: This will be how long you will run.

Tier 1: 8 minutes

Tier 2: 10 minutes

Tier 3: 12 minutes

Tier 4: 14 minutes

Option 2: This will determine the pace(s) at which you will run

Tier 1: Steady rate - Don't worry about how fast you're running just don't walk.

Tier 2: 30 Seconds elevated intensity / 1 minute recovery pace - For this tier you will simply increase your effort for a short time then try to recover while still jogging.

Tier 3: 20 second sprint / 1 minute recovery pace - Similar to Tier 2, but the high intensity interval is max effort.

Tier 4: Max effort - Whatever duration you choose, try to run as far as possible during that period of time. Consider recording your performance. We will probably repeat this workout and you may want to be able to compare your results. NO WALKING!

Option 3: This will be a wildcard challenge.

Tier 1: No added challenge

Tier 2: If you chose Tier 1 or 2 from Option 2, try to only breathe through your nose during your recovery phase.

Tier 3: Add weight - You could do this a lot of ways. Hold something in your hands, wear a backpack or a weighted vest if you have one.

Tier 4: Hold a mouthful of water for the duration of your run. Don't swallow it and don't spit it out until the end of the run.

Cooldown:

2 minute brisk walk

4 minutes static stretching major lower body muscles (quads, hamstrings, glutes, calves). Hold each stretch for roughly 30 seconds

Friday, May 22

Office Hours (Not mandatory)

General Mobility Routine (Not mandatory)

Optional workout #1:

The workout below is **not** required. You could try to perform it on any day in addition to your daily routine. This workout will most likely take around 30 minutes.

Feel free to modify according to your ability by decreasing or increasing reps or sets. Rests between sets should be between 30s to 1 minute according to fatigue.

Workout:

- 3 sets of 20 squats
- 3 sets of 20 lunges
- 4 sets of 15 pushups
- 4 sets of 5 burpees
- 3 sets of 15 crunches
- 3 sets of 15 leg raises
- 3 sets of 1 minute high plank (pushup position)
- 4 sets of 10 jump lunges
- 4 sets of 10 jump squats

Optional Workout #2:

The workout below is **not** required. You could try to perform it on any day in addition to your daily routine. This workout will most likely take around 45 minutes. Feel free to modify according to your ability by decreasing or increasing the number of sprints and the times for the rest intervals and runs.

1. 5 minute light warmup run
2. 5 minute light warmup stretch
3. Final warmup: perform 3 near sprints, 70% max speed, 80% max speed, 90% max speed.
4. Perform eight 50 meter sprints with a 30s-60s rest in between. (you want to put a bit of stress on your cardio but make sure that you have recovered enough in order to truly sprint each time)
5. Then perform 10 near sprints, between 70-90% with a 10s-20s rest, not long enough to catch your breath fully.
6. Then a 10 minute run at a moderately high speed to complete the cardio workout
7. 5 minutes cool down walk / light jog
8. 5 minutes light stretching.

Optional Workout #3: Squat mobility NEW and IMPROVED: (10-15 minutes)

Looking over the week 1 packets I have noticed that a lot of you have made a goal out of improving your resting squat. I have made a short video that will instruct you on a mobility routine similar to the one described last week but expanded and developed. That video is on google classroom under the Packet Week 7 topic.

Before doing this mobility routine it is not necessary, but would be beneficial to warm up and loosen up your body a bit. Nothing specific is necessary, but a good warmup routine might look something:

1. 1 minute of light running
2. 10-20 jumping jacks
3. A few down-dogs and up-dogs
4. 5 pushups
5. 5 burpees
6. 10 squats

Remote Learning Packet

Please submit scans of written work in Google Classroom at the end of the week.

Week 8: May 18-22, 2020

Course: Spanish I

Teacher(s): Ms. Barrera anna.barrera@greatheartsirving.org

Supplemental links: www.spanishdict.com www.lingt.com/abarrera

Weekly Plan:

Monday, May 18

- Capítulo 4B: Story time: Patricia va a California: Chapter 6.
- Capítulo 4B: Listen to a story narrated in Spanish followed with speaking for comprehension

Tuesday, May 19

- Capítulo 4B: Story time: Patricia va a California: Chapter 7.
- Capítulo 4B: Listen to a story narrated in Spanish followed with speaking for comprehension

Wednesday, May 20

- Capítulo 4B - Quieres Ir Conmigo? Read about and compare the lives of two famous athletes.
- Capítulo 4B - Using cognates to understand new words and learn more about Hispanic athletes

Thursday, May 21

- Capítulo 4B - Quieres Ir Conmigo? Assessment skill: vocabulary, grammar & comprehension.
- Capítulo 4B - Quieres Ir Conmigo? Students will write an invitation to a special event.

Friday, May 22

- attend office hours
- catch-up or review the week's work

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

Student Signature

Parent Signature

Monday, May 18

Capítulo 4B: Story time: Patricia va a California: **Chapter 6**. Listen to a story narrated in Spanish followed with speaking for comprehension.

I. **Video - Short Story in Spanish:** Title: Patricia va a California: **Chapter 6 Experiencia Mala**.

Listen to the video of **Chapter 6** and then go to link to **answer questions** from that chapter. Video is in google classroom.

Tuesday, May 19

Capítulo 4B: Story time: Patricia va a California: **Chapter 7**. Listen to a story narrated in Spanish followed with speaking for comprehension.

I. **Video - Short Story in Spanish:** Title: Patricia va a California: Chapter 7 - Problemas Culturales.

Listen to the video of **Chapter 7** and then go to link to **answer questions** from that chapter. Video is in google classroom.

Wednesday, May 20

Capítulo 4B - Quieres Ir Conmigo? Read about and compare the lives of two famous athletes. Using cognates to understand new words and learn more about Hispanic athletes.

I. **Textbook pp.212-213. Lectura: Sergio y Paola: Dos deportistas dotados.** Read pages 212 and 213 and then answer in complete sentences the questions on page 213 under **Comprendes?**

Thursday, May 21

Capítulo 4B - Quieres Ir Conmigo? Assessment skills testing: vocabulary, grammar and comprehension. Students will write an invitation to a special event.

I.**Assessment: Write an email to invite a friend to go to a special event with you.** You will only turn in the final copy and no draft. You can write a draft to help you organize your thoughts. Go to page 215 and at the bottom of the page there is a rubric that will provide a guide as to what I am going to grade you on. Amount of Information, use of vocabulary expressions and Accuracy of sentence structure are the criterias that I am looking for in your paper. Please read the rubric before you begin to write. Buena Suerte!