

**9th Grade
Lesson Plan
Packet**

4/20/2020-4/24/2020

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20 - 24, 2020

Course: 9 Biology

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

Ms. Oostindie megan.oostindie@greatheartsirving.org

Weekly Plan:

Monday, April 20 - Levels of organization, ecological niche

Read pp. 356-362, "The Niche" on p. 365. Notes and vocab.

Diagram the levels of organization for an organism of your choosing. In a paragraph, describe that organism's niche.

Tuesday, April 21 - Gross vs. net primary productivity, different classifications of consumers, energy transfer between trophic levels

Read pp. 366-367. Notes and vocab. Consider conditions that would affect GPP and NPP.

Create a food plan/day in the life of two of the four types of consumers.

Wednesday, April 22 - Energy flow, trophic levels, intro to cycles

Read pp. 368-369. Notes and vocab.

Cycle compare and contrast worksheet

Thursday, April 23 - Carbon + Nitrogen Cycles details and review

Complete C+N cycles using notes; blank cycles will be on the quest

Friday, April 24 - Quest!

Quest - Taxonomy, Selection, Energy Flow, Trophic Levels, C + N Cycle

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, April 20 (25-31 minutes)

1. Read pp. 359-362 and the section called “The Niche” on p. 365. Annotate key ideas in your notes as you read. (10-12 minutes)
2. and be sure to include all 5 vocabulary words with their definitions. (7-9 minutes)
3. Then, diagram the levels of organization for an organism of your choosing. You may use the worksheet attached, or form a diagram on your own. In a paragraph, describe that organism’s niche. (8-10 minutes)

Tuesday, April 21 (28-34 minutes)

1. Read pp. 366-367. (8-10 minutes)
2. *After you’ve read the whole thing.* Write down the vocabulary and their definitions in your notes. These will be checked for completion. (12-14 minutes)
Give extra attention to the key ideas:
 - gross vs. net primary productivity,
 - different classifications of consumers
 - energy transfer between trophic levels
3. Create a food plan/day in the life for each of two of the four types of consumers. Use your imagination, and make your descriptions as “appealing” as possible. What would a detritivore look forward to for dinner? (8-10 minutes)

Wednesday, April 22 (24-33 minutes)

1. Read pp. 368-369. Annotate key ideas in your notes, paying close attention to the vocabulary. (6-8 minutes)
2. Complete question #2 and #5 on p. 369. You can write these after your notes, but be prepared to turn them in. (6-8 minutes)
3. *Optional - Enjoy these etymologies (3 minutes):
Trophic- "of or pertaining to nutrition, food, or nourishment," 1856, from Greek *trophikos*, from *trophe* "nourishment, food."
Trophy- 1510s, "a spoil or prize of war," from Middle French *trophée* (15c.) from Latin *trophaeum* "a sign of victory, monument," originally *tropaeum*, from Greek *tropaion* "monument of an enemy's defeat."
Trough- Old English *trog* "wooden vessel, tray, hollow vessel, canoe," from Proto-Germanic **trugaz*, from PIE **dru-ko-*, from root *deru- "be firm, solid, steadfast," with specialized senses "wood, tree" and derivatives referring to objects made of wood.
4. Attend to the attached worksheet “Comparing Cycles of Life” (12-14 minutes).

Thursday, April 23 (20-30 minutes)

1. Carefully complete the blank Carbon and Nitrogen Cycle diagrams attached to this packet. Use p. 372 and 372 for guidance. These blanks will be on your quest tomorrow! (20-30 minutes)

Friday, April 24

Quest - Taxonomy, Selection, Carbon Cycle, Nitrogen Cycle - MM + Blank cycles
(key topics: knowing the taxonomy hierarchy, etymologies types of selection, blank cycles)

Assessments are learning tools, just like flashcards and notetaking. Do not complete this assessment as a routine “get-it-done” thing. Let it help you learn! Challenge yourself to complete as much as possible without assistance.

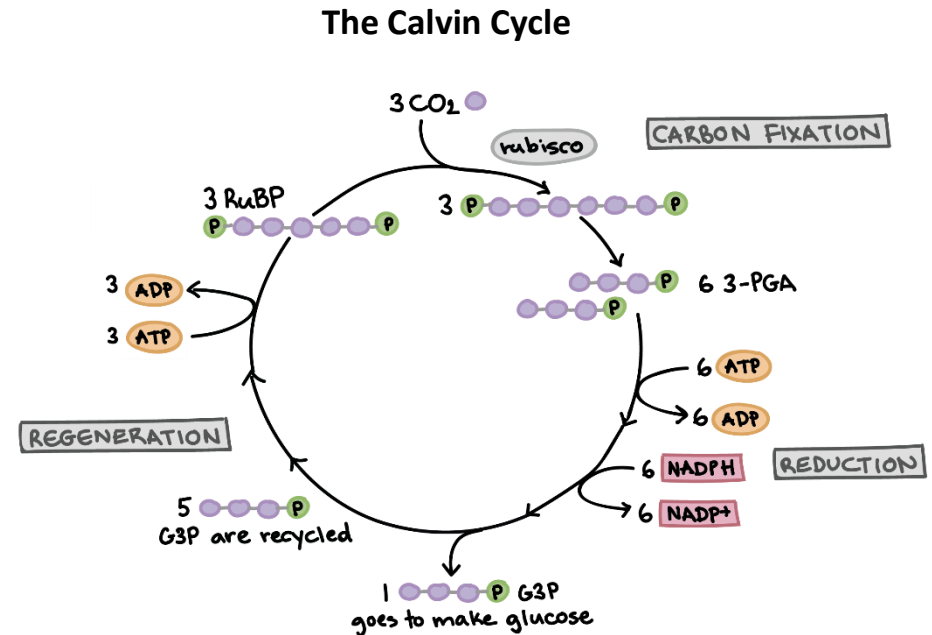
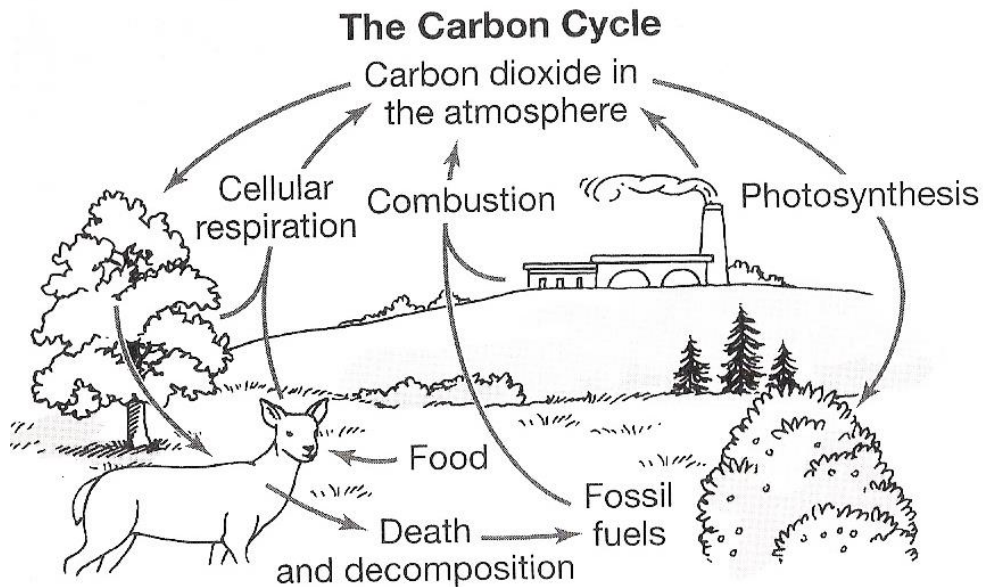
This quest is open note. Try! Then use your notes. Then refer to your book last, if you need to. Let this quest help you activate the knowledge and understanding you’ve worked so hard to cultivate so far.

Ecological Levels of Organization

Directions: Fill in the following chart with sketches of each ecological level of organization related to an organism of your choosing. You may use the figure on p. 361 as a reference but you may not choose any of the organisms featured in the figure.

BIOSPHERE
ECOSYSTEM
COMMUNITY
POPULATION
ORGANISM

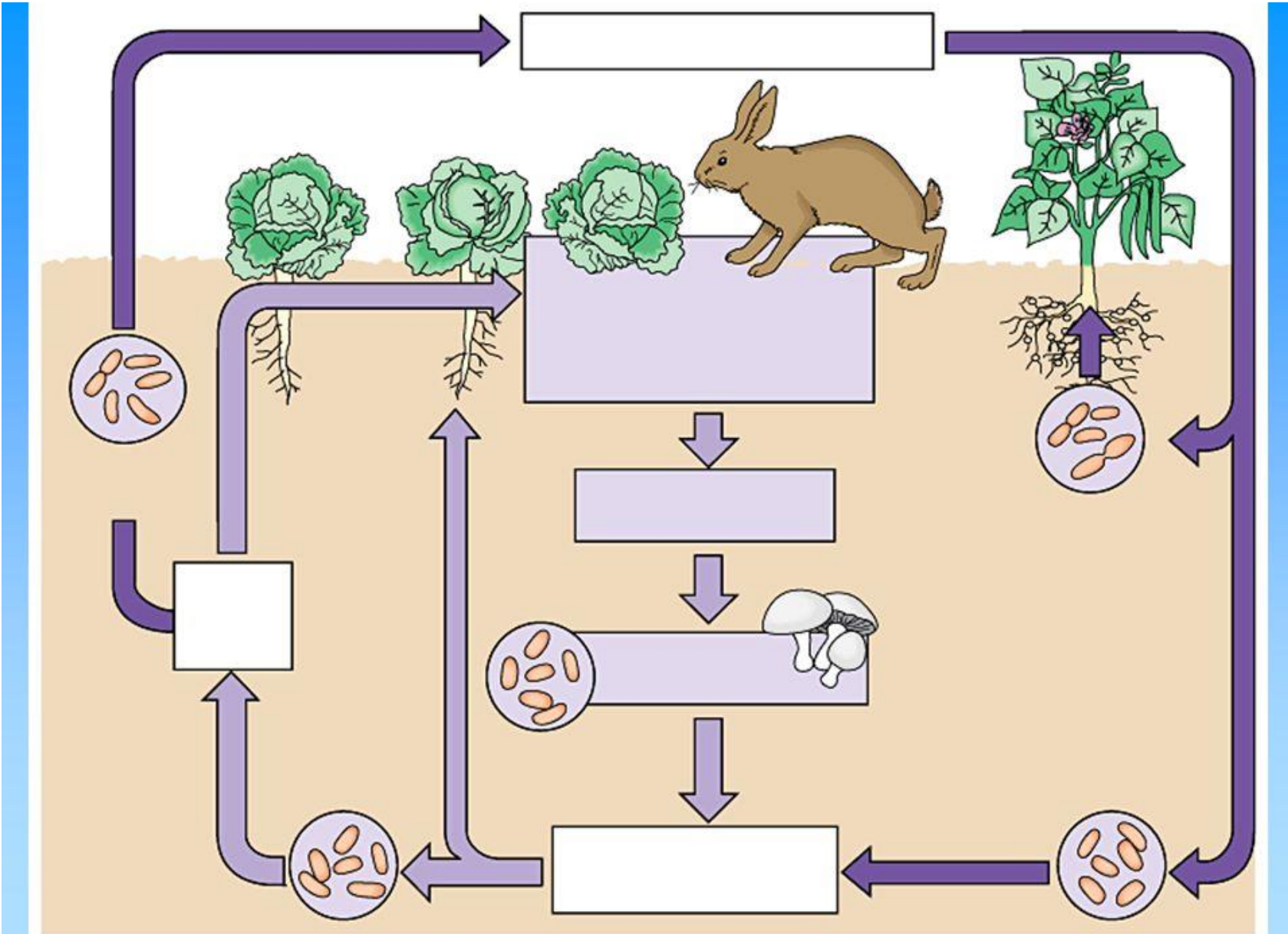
In a paragraph, describe the niche of the organism you chose. Is the organism a generalist or specialist?



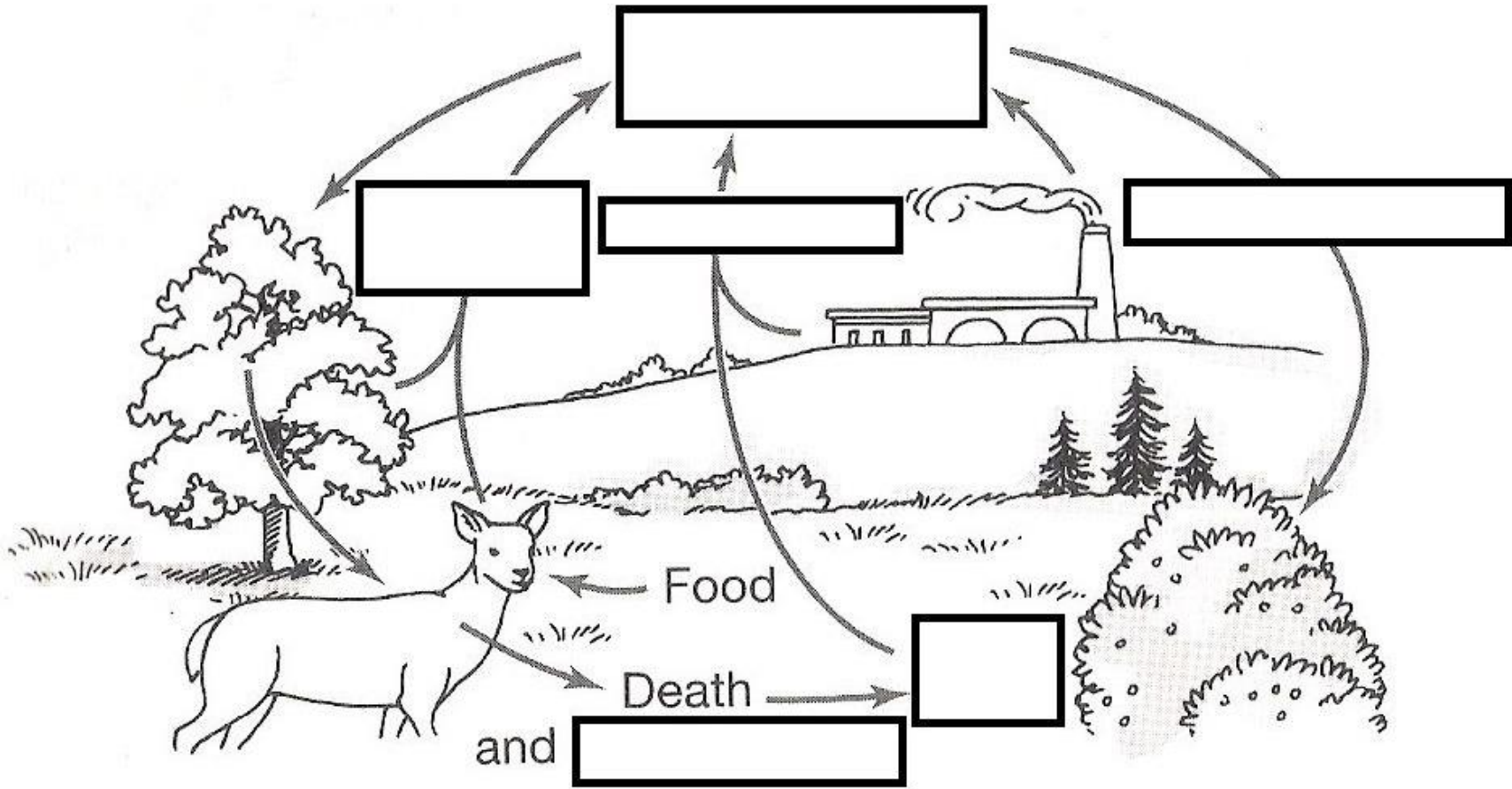
Consider the diagrams above. You are welcome to review the Calvin Cycle in your notes from Chapter 7. Answer the following questions in complete sentences in a form worthy of turning in.

1. Why do we call both processes "cycles?"
2. What allows each process to continue through time?
3. Write the final cause of each cycle. How are the final causes of the Carbon Cycle and the Calvin Cycle similar? How are they different? 3-4 sentences, please!

Modeling the _____ Cycle



Modeling the _____ Cycle



Chapter 16-18 Quest

Vocabulary

Write the letter that corresponds to each term's definition, as listed in the chart on the right.

- | | |
|------------------------------|---|
| ___1. Population genetics | A. The process of genes moving from one population to another. |
| ___2. Gene pool | B. Population change due to individuals with either extreme variation of a trait having greater fitness. |
| ___3. Gene flow | C. The study of evolution across populations from a genetic perspective |
| ___4. Reproductive isolation | D. When non-geographical barriers prevent successful breeding between population groups in the same area. |
| ___5. Disruptive selection | E. The science of classifying organisms based on internal and external structure and appearance. |
| ___6. Morphology | F. The total genetic information available in a population. |
| ___7. Binomial nomenclature | A. The science of classifying organism; a system for classifying organisms. |
| ___8. Taxonomy | B. A kingdom of eukaryotes whose members have various, unique traits. |
| ___9. Bacteria | C. The kingdom whose name means "true bacteria", distinct from Archaea. |
| ___10. Protista | D. The "two-name" system of naming an organism by genus and species. |
| ___11. Animalia | E. The domain containing small, single-celled prokaryotic organisms like <i>E. coli</i> . |
| ___12. Eubacteria | F. The kingdom of eukaryotic, multicellular, heterotrophic organisms capable of locomotion and sensing. |

- ___ 13. Ecosystem
- ___ 14. Community
- ___ 15. Population
- ___ 16. Biotic factor
- ___ 17. Abiotic factor
- ___ 18. Niche
- A. The specific role, or way of life, of a species within its environment.
- B. All the members of a species that live in one place at one time.
- C. All the organisms and the non-living environment found in a particular place.
- D. A non-living component of an environment.
- E. All of the living things that affect a particular organism.
- F. All the interacting organisms in a particular area.

Multiple Choice

- ___ 19. A species of beetle, through many generations, changes its typical morphology from one of small wing size to large wing size to better its ability to fly. Which type of natural selection is this statement describing?
- Disruptive
 - Stabilizing
 - Directional
 - Advantageous
- ___ 20. Saint Bernards and Chihuahuas cannot mate because they differ so much in size. Thus, they are reproductively isolated to some extent. This is an example of what type of isolation?
- Artificial
 - Prezygotic
 - Postzygotic
 - Geographic
- ___ 21. Genotype : allele :: phenotype :
- Gene pool
 - Population
 - Trait
 - Mutation

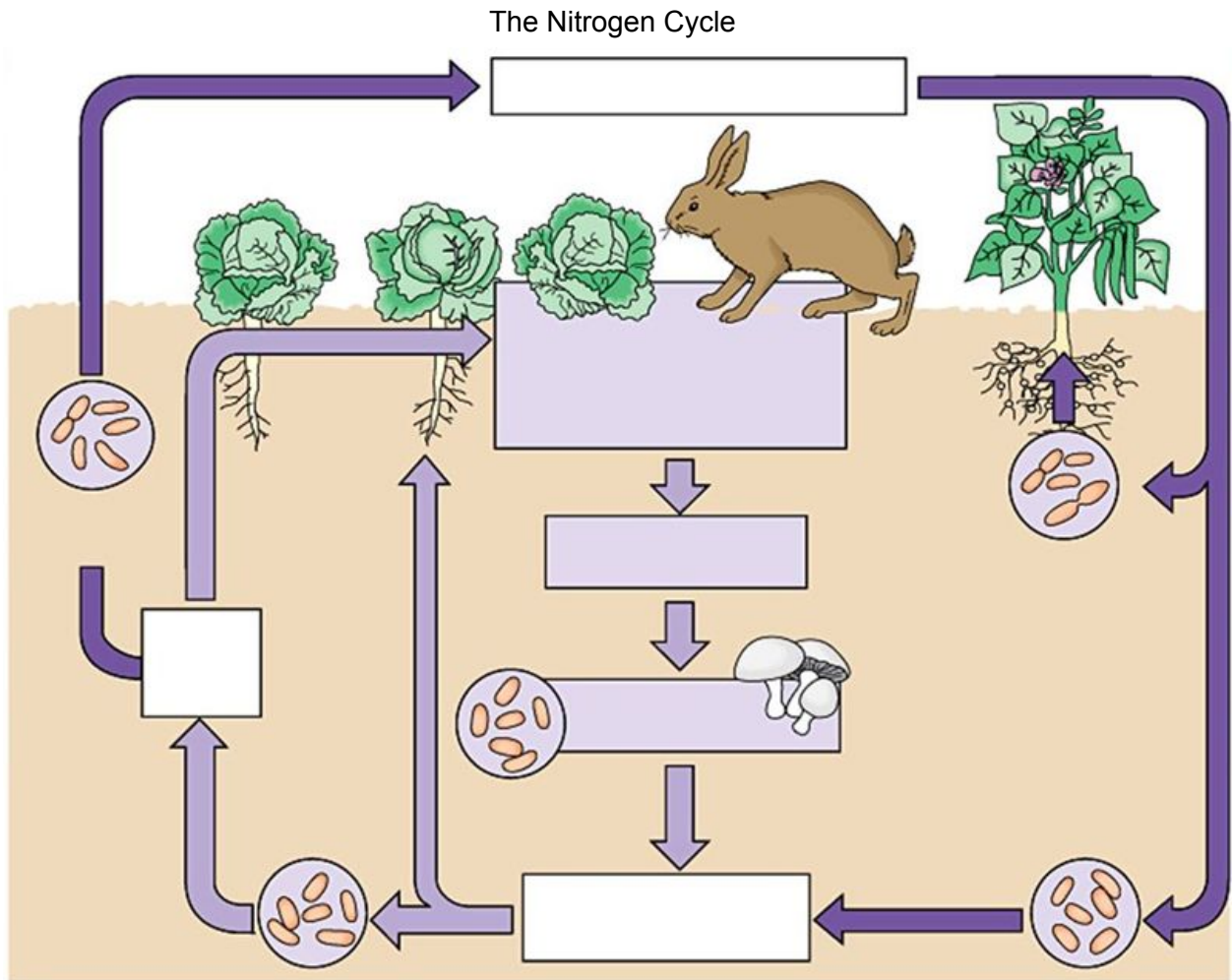
- ___22. On his voyages with the *HMS Beagle*, Darwin observed the emu in Australia, the ostrich in Africa, and the rhea in South America. All are flightless birds with large bodies, legs, and necks. What is the term that describes these three separate species evolving to have similar traits?
- Divergent evolution
 - Convergent evolution
 - Driven evolution
 - Coevolution
- ___23. To which level of classification does a group of closely related species of organisms belong?
- Class
 - Order
 - Genus
 - Kingdom
- ___24. The antelope is a grazing, hoofed mammal that lives off wild grasses and is often preyed upon by other, larger mammals. What type of consumer is an antelope?
- Carnivore
 - Detrivore
 - Herbivore
 - Omnivore
- ___25. ___ primary productivity - respiration of producers = ___ primary productivity
- Net, gross
 - Gross, net
 - Gross, biomass
 - Biomass, gross
- ___26. How do most producers produce energy?
- Eating other organisms
 - Anaerobic respiration
 - Photosynthesis
 - Breaking down waste and decaying matter

27. List the five assumptions that must be met for Hardy-Weinberg equilibrium to be possible:

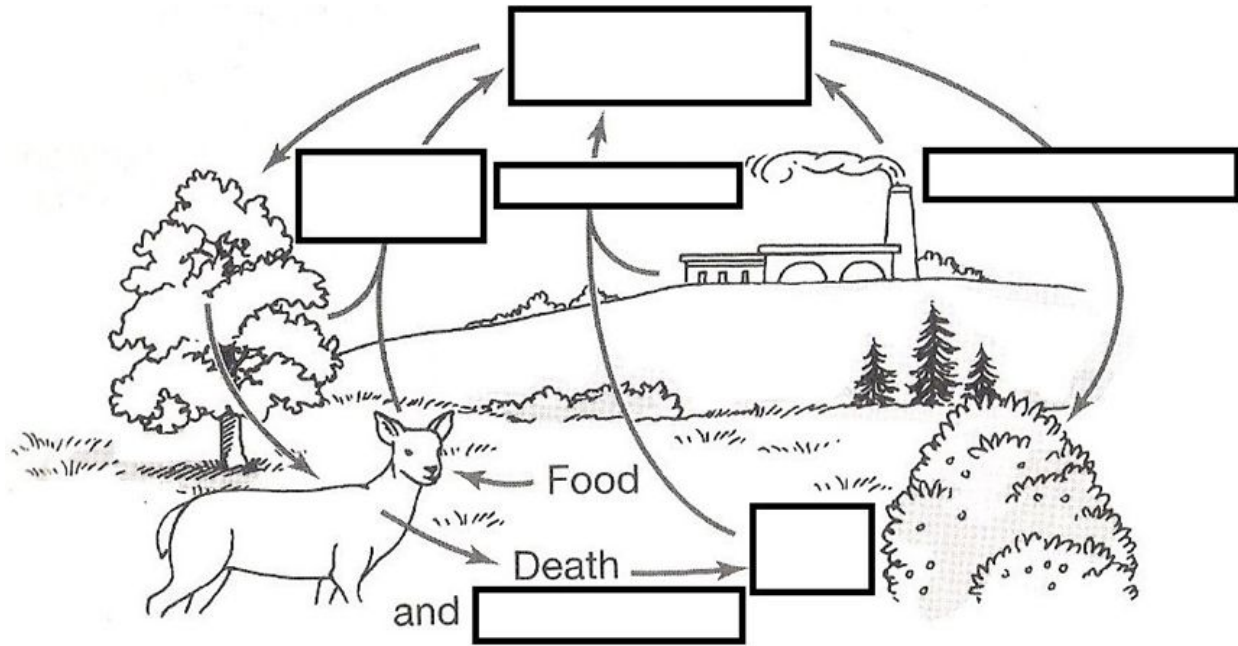
- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

Diagrams

Complete the diagrams. Try to do so from memory.



The Carbon Cycle



Short Answer

28. Why can the biological species concept *not* be used to identify fossil organisms? 3 sentences.

29. How is the transfer of energy different from the transfer of nutrients in an ecosystem? 5 sentences.

30. About how much energy is transferred from each trophic level to the next? Why is it this way? What possible factors could change the amount of energy transfer? 5 sentences.

Remote Learning Packet

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April 20 - 24, 2020

Course: 9 Geometry

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

Weekly Plan:

Monday, April 20

- Review “Answer Keys” IV.11 and IV.15
- Repeat constructions IV.11 and IV.15

Tuesday, April 21

- Read Book V Definitions 1-8
- Book V Definitions Questions #1-18

Wednesday, April 22

- Read V.Definitions 9-17
- Book V Definitions Questions #19-22

Thursday, April 23

- Read Book V Propositions (all)
- Answer Book V Propositions Questions

Friday, April 24

- Read VI.Definitions.1-3
- Read VI.1 and put into two-column

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 another week of Remote Geometry! I hope you are all doing well. I know that remote learning can be tough, especially when studying something as intellectually difficult as Euclid's *Elements*. I encourage you to persevere and to please email me or come to Office Hours if you have any questions.

We have now finished with Book IV, with its beautiful and triumphant constructions. This week, we plunge into the concepts of ratio and proportion, concepts which--I might argue--are the very heart and soul of all mathematics. These are difficult concepts to learn and will require a significant shift in the way we have been thinking.

I like to think of Books V and VI in terms of the following analogy. If we were going to travel to a foreign country (perhaps now is not the right time for that, but it's just an analogy!), we would first want to learn the language that is spoken there. If you learn the language, you will have a great time and easily be able to travel around and see all there is to see. If you *don't* learn the language, you will easily become lost and will not have a great time. Book V is the language, and Book VI the foreign country. In Book V, we learn to speak the language of ratio and proportion. In Book VI, we apply the language of ratio and proportion to figures like triangles. You may find Book V's definitions and propositions confusing and difficult at first, but I really want to encourage you to persevere and strive to master them--when we get to Book VI, you will be very glad that you did.

As you'll see, I have written explanations to go along with the definitions and propositions that we are studying in Book V. When we look at the propositions, you'll notice that our focus will only be on the *enunciations*--indeed, we will not look at the proofs at all. We will seek to understand how each enunciation is true and how it makes good sense, and then we will look at how it would be used. I've written practice problems for both the definitions and the enunciations, to help you get the hang of using them.

Then, finally, on Friday, we will begin to put our "language" skills to use as we begin our journey in the land of Book VI.

I wish you all the best of luck this week, and I hope you enjoy opening your mind to the fundamental ideas of ratio and proportion.

Let's get started!

Monday, April 20

Before we begin on Ratio and Proportion, let's first finish up and polish our knowledge and skills from last week. Today I would like you to:

- 1) Review the "Answer Keys" for the construction of IV.11 and IV.15
- 2) On the pages provided, repeat the constructions IV.11 and IV.15

Tuesday, April 21

Ratio and Proportion, here we come!

Today I would like you to:

- 3) Read V.Definitions.1-8 *in your textbook*. Spend about 3-5 minutes reading these, doing your best to understand. If there are things that you still do not understand after 3-5 minutes, that is fine, go ahead and move on.
- 4) Read Definitions 1-8 in the supplementary reading, to be found in this packet, under the title "Book V Definitions Reading."
- 5) Answer questions #1-18 in the section entitled "Book V Definitions Questions"

Wednesday, April 22

Today, we will finish up with Book V definitions. I would like you to:

- 1) Read V.Definitions.9-17 *in your textbook*. Spend about 3-5 minutes reading these, doing your best to understand. If there are things that you still do not understand after 3-5 minutes, that is fine, go ahead and move on.
- 2) Read Definitions 9-17 in the supplementary reading, to be found in this packet, under the title "Book V Definitions Reading."
- 3) Answer questions #19-22 in the section entitled "Book V Definitions Questions"

Thursday, April 23

Today, we begin Book V propositions! As I mentioned earlier, we will not be looking at any proofs of these propositions, focusing only on the enunciations. In fact, you do not even need to look at these propositions in your *Elements* (although of course you may if you are interested!).

I would like you to:

- 1) Read the pages entitled “Book V Propositions Reading” in this packet. This will cover V.7, V.9, V.11, V.12, V.15, V.16, V.18, and V.22. These are the only propositions we will study together in Book V.
- 2) Answer questions #1-22 in the section entitled “Book V Propositions Questions”

Friday, April 24

The time has come--today, we begin our journey into the foreign land of Book VI. The first sight to see is the four definitions of Book VI. And then we will head to the ancient (and eternal!) monument: proposition 1!

I would like you to:

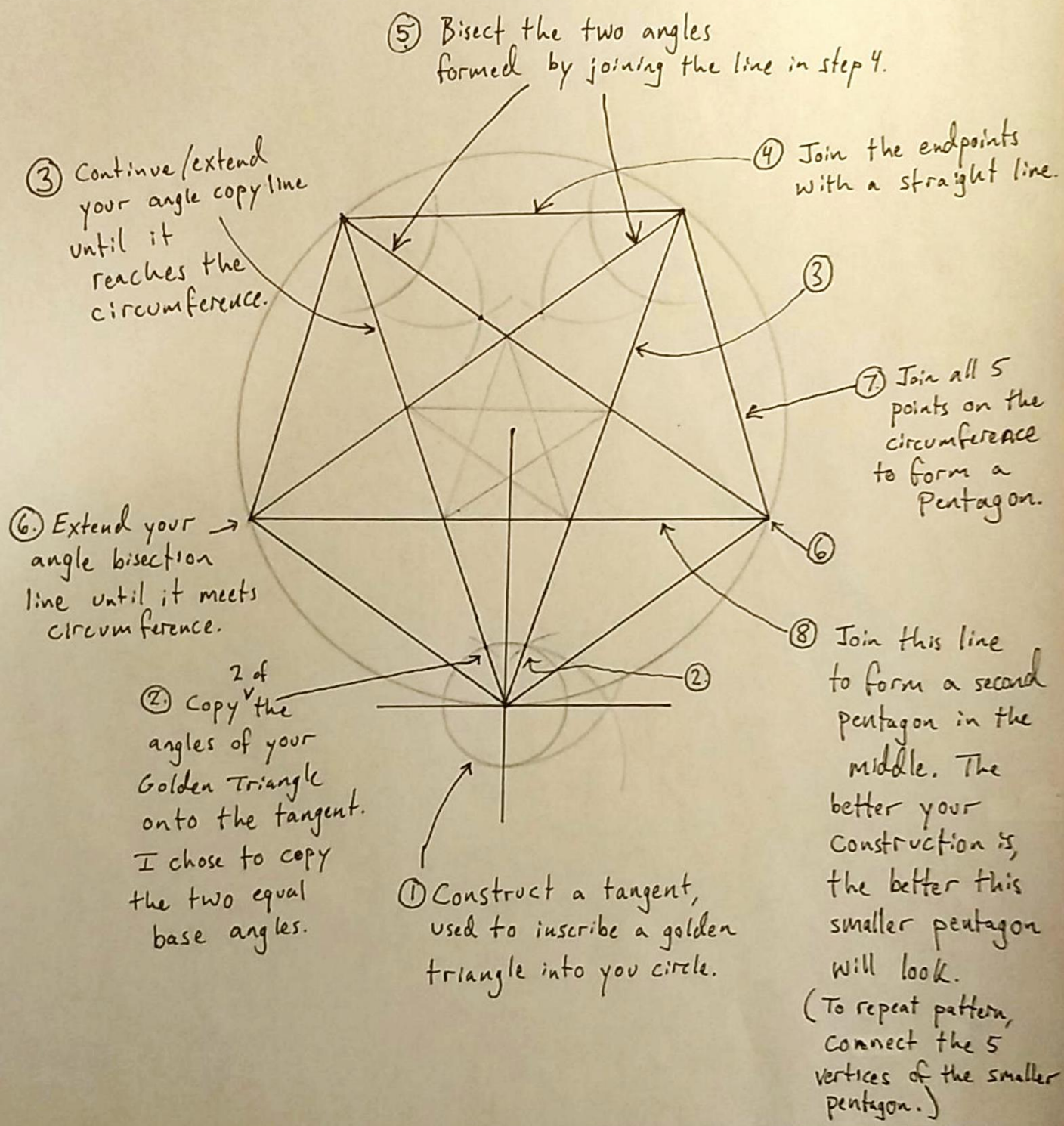
- 1) Read VI.Definitions.1-4. Go ahead and read all of them, but focus your attention primarily on definitions 1 and 4. We will look more closely at what the others mean when they come up later on.
- 2) Read proposition VI.1 and write out the argument in two-column format.

That’s all for this week! Good work! I wish you a very happy weekend, filled only with true, good, and beautiful things!

Sincerely,

Mr. Mooney

IV. 11 Construction "Answer Key"



⑤ Bisect the two angles formed by joining the line in step 4.

③ Continue/extend your angle copy line until it reaches the circumference.

④ Join the endpoints with a straight line.

③

⑦ Join all 5 points on the circumference to form a Pentagon.

⑥ Extend your angle bisection line until it meets circumference.

⑧ Join this line to form a second pentagon in the middle. The better your construction is, the better this smaller pentagon will look.

② Copy 2 of the angles of your Golden Triangle onto the tangent. I chose to copy the two equal base angles.

① Construct a tangent, used to inscribe a golden triangle into your circle.

(To repeat pattern, connect the 5 vertices of the smaller pentagon.)

IV. 15 Construction (+ Porism) "Answer Key"

⑤ Porism:
Draw a perpendicular from each vertex, perpendicular to the diameter.

② Draw a circle around the endpoint of the diameter, with a radius equal to the radius of your original circle.

③ From the points where the two circles intersect, draw two new diameters.

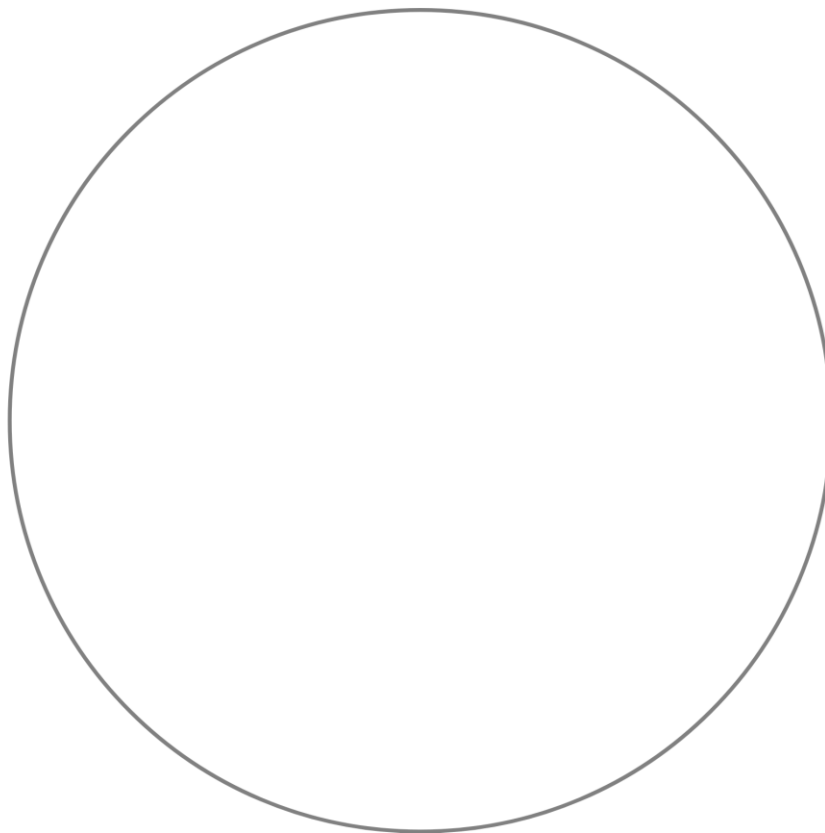
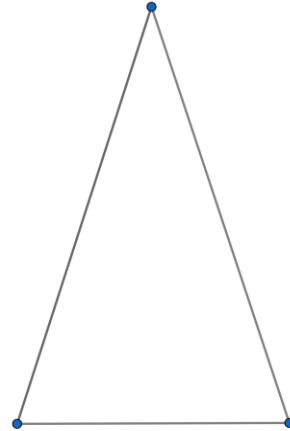
④ Now, you should have a total of 3 diameters, for a total of 6 endpoints on the circumference. These are the vertices of your hexagon. Join them.

① Draw a diameter in your given circle.

⑥ You now have two regular hexagons, one inscribed in the circle, and one circumscribed about it.

IV.11 and IV.15 Constructions (To be done with help of Answer Keys)

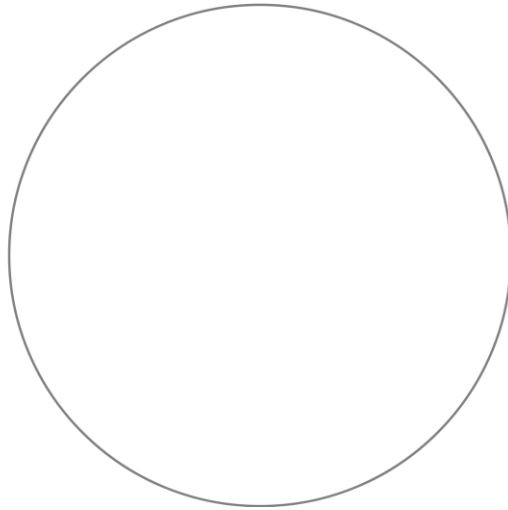
IV.11: Using the given Golden Triangle, inscribe a regular Pentagon in the given circle.



IV.11 and IV.15 Constructions (To be done with help of Answer Keys)

IV.15: In the given circle, inscribe a regular hexagon.

IV.15.Porism: On the same construction, circumscribe a regular hexagon about the original circle.

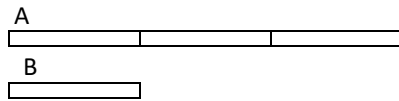


Book V Definitions Reading

1. PART

*“A magnitude is **part** of a magnitude, the less of the greater, when it measures the greater.”*

- a) Magnitude: any kind of quantity, e.g. lines, figures or areas, solids, numbers, etc.
- b) Measures: Referring to the diagram below, we say that “B measures A three times.” It is similar to the way sometimes we say a number “goes into” another number a certain number of times. For example, 3 goes into 12 four times.



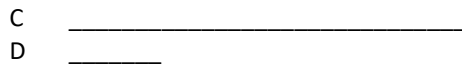
Thus, if we say that magnitude B is **part** of magnitude A, we mean that B measures A. Sometimes, we will specify: B is the a **third part** of A—meaning that B measures A three times.

2. MULTIPLE

*“The greater is a **multiple** of the less when it is measured by the less.”*

This definition is similar to the first, but from the other perspective. If speaking about B in relation to A, we say that B is part of A; but if we want to talk about A in relation to B, we say that A is a **multiple** of B.

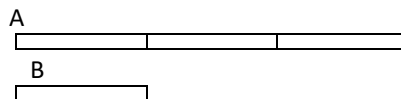
For example, in the diagram below, C is a multiple of D. (Specifically, it looks like the *fourth* multiple)



3. RATIO

*“A **ratio** is a sort of relation in respect of size between two magnitudes of the same kind.”*

- a) Relation: Ratio is a *relation*. That is, when thinking about ratio, we are considering *how something relates* to another thing.
- b) “in respect of size”: Ratio is not just *any* relation, it is a relation of *size*. The ratio of A to B, for example, is about *how the size of A relates to the size of B*.



How *does* magnitude A’s size relate to magnitude B’s? The expression of this relation—that is, this ratio—is $A : B$.¹

- c) Same Kind: Lastly, there can only be a ratio between magnitudes of the same kind. For example,



There can be no ratio $A : B$ here, because A is a *length* and B is a *figure/area*, and those are *different kinds* of magnitudes.

¹ In the example above, since you can actually tell that B measures A three times, we could also say that $A : B$ as $3 : 1$. . . but this is getting a little bit ahead.

Book V Definitions Reading

4. "HAVE A RATIO"

"Magnitudes are said to **have a ratio** to one another which are capable, when multiplied, or exceeding one another."

- a) Multiplied: A line is said to be "multiplied" when its length is set out multiple times.

For example, if I multiply the line A three times, I get:

A _____ → 3A _____

This, of course, also applies to the use of "multiplication" that you are more familiar with: the multiplication of *number*.

For example, if I multiply the number 3 four times, I get...



- b) Exceeding: If one magnitude exceeds another magnitude, it surpasses the other in size.

This definition is something like a test to see what magnitudes can be said to have a ratio with one another. Can A and 3A have a ratio? Yes, says definition four, because if A is multiplied enough (four times) it will eventually exceed 3A. Can the number five have a ratio to infinity (∞)? No, it cannot. The number five, no matter how many times you multiply it, will never exceed infinity.

5. SAME RATIO

"Magnitudes are said to be **in the same ratio**, the first to the second and the third to the fourth, when, if any equimultiples whatever be taken of the first and third, and any equimultiples whatever of the second and fourth, the former equimultiples alike exceed, are alike equal to, or alike fall short of, the latter equimultiples respectively taken in corresponding order."

Can one person's height be the *same* as another person's height? Of course! Can one length be the *same* as another? Sure! But can one relation be the *same* as another relation? This last question is more difficult to answer. Definition Five tells us what it would mean to say that two magnitudes relate to each other *in the same way* as two other magnitudes relate to each other—that is, that they have the *same ratio*.

Here is an example of what it could look like if the ratio of two lengths A and B was the *same* as the ratio between two other lengths, C and D?

A _____ C _____
B _____ D _____

Now, my diagram is not perfect, but do you see what is meant here? The ratio of A: B—that is, the way A's size relates to B's size—is the *same* as the ratio of C: D—that is, it is the same as the way that C's size compares to D's size.

Let us now make sense of the difficult definition, which aims to put this idea into strict, logical, and theoretically verifiable² terms.

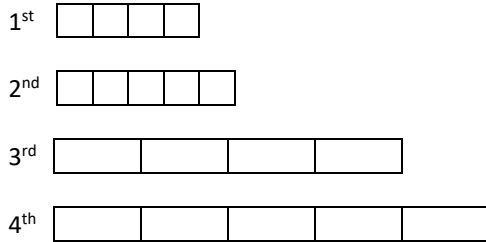
Euclid is talking about four magnitudes: namely, the first, second, third, and fourth.

² Remember, we are not judging things by appearance, or with a ruler. We need some other strictly theoretical way of determining whether or not two ratios are the same.

Book V Definitions Reading

Here we take the *fourth* multiple of the first and third, and the *eighth* multiple of the second and fourth, and we see that the first and third are *alike equal* to the second and fourth respectively.

And lastly,



The last condition—*alike fall short of*—is met when we take the second multiple of the first and third, and the fifth multiple of the second and fourth.

What does this all mean? It means that the ratios are the same! The ratio of 1st : 2nd is the same as the ratio of 3rd : 4th. This all may perhaps seem a bit underwhelming to you right now, but as you will see, the idea of *same ratio* is absolutely the most important and foundational idea of Books V and VI and will thus occupy our thoughts for the remainder of the year.

6. PROPORTIONAL

*“Let magnitudes with have the same ratio be called **proportional**.”*

Thus, if the ratio of $A : B$ is the *same* as the ratio of $C : D$,

$$\begin{array}{l} A \text{ _____} \\ B \text{ _____} \end{array} \qquad \begin{array}{l} C \text{ _____} \\ D \text{ _____} \end{array}$$

we would say that the *ratios are the same*, and the *magnitudes are proportional*. That is, “proportional” is an adjective that describes the magnitudes when they are in the same ratio.

A **proportion** is a statement that the magnitudes are proportional (that is, that they have the same ratio). The proportion in this case would be written:

$$A : B :: C : D$$

This would be read “As A is to B , so C is to D .”

7. HAVE A GREATER RATIO

*“When, of the equimultiples, the multiple of the first magnitude exceeds the multiple of the second, but the multiple of the third does not exceed the multiple of the fourth, then the first is said to **have a greater ratio** to the second than the third has to the fourth.”*

This definition carries on from definition five. That is, what if our magnitudes had *not* passed the tests for same ratio? What if, when equimultiples were taken, the first and third did not exceed, equal, or fall short of the second and fourth respectively? If the ratios are not the same, then one of them is greater. Definition seven serves to tell us how to know which ratio is greater.

Book V Definitions Reading

Consider the following four magnitudes.

1st

2nd

3rd

4th

Let's take the second multiple of the first and third magnitudes, and the third multiple of the second and fourth magnitudes.

1st

2nd

3rd

4th

Notice that the 1st and 3rd magnitudes are multiplied twice and the 2nd and 4th magnitudes are multiplied three times. When we do this, the 1st exceeds the 2nd, but the 3rd falls short of the fourth. This means, according to this definition seven, that the first has to the second as greater ratio than the third has to the fourth.

We can write it this way: 1st : 2nd > 3rd : 4th

8. PROPORTION IN THREE TERMS

"A proportion in three terms is the least possible."

So far, the proportions that we have looked at involve four terms. For example, in the proportion

$$AB:CD :: EF:GH$$

we have four terms (AB, CD, EF, and GH). How could there be a proportion in three terms only?

Let's consider three magnitudes PQ, RS, and TU:

P _____ Q

R _____ S

T _____ U

I have attempted to draw these so that it appears that the ratio of PQ to RS is the same as the ratio of RS to TU (PQ is roughly a third the size of RS, and RS is roughly a third of TU). That is:

$$PQ:RS :: RS:TU$$

Euclid says that such a proportion is the "least possible," apparently to say that it is less likely to find a proportion in three terms than in four.

Book V Definitions Reading

9. DUPLICATE RATIO

*“When three magnitudes are proportional, the first is said to have to the third the **duplicate ratio** of that which it has to the second.”*

Consider the example of three proportional magnitudes, from definition eight above:

P _____ Q
R _____ S
T _____ U

The first (PQ) is said to have to the third (TU) the *duplicate ratio* of that which it (PQ) has to the second (RS).

Let's say that PQ is exactly one third of RS (that is, they have a 1 : 3 ratio). Since they are proportional, RS is therefore exactly one third of TU.

According to this definition, PQ has to TU the duplicate ratio of that which it (PQ) has to RS. We know that PQ has to RS a ratio of 1 : 3. Since RS and TU *also* have a 1 : 3 ratio, can you figure out what the ratio of PQ to TU would be? ... That's right! It would have to be a 1 : 9 ratio!

In algebra, the duplicate ratio is thought of as the ratio “squared.” It would look something like this: $(1:3)^2$. And $(1:3)^2 = 1:9$.

You could think of it this way too: if PQ is one third of RS, then PQ is *a third of a third* of TU. (And “a third of a third” is the duplicate ratio, which is equal to one ninth.)

10. TRIPPLICATE RATIO

*“When four magnitudes are [continuously] proportional, the first is said to have to the fourth the **triplicate ratio** of that which has to the second, and so on continually, whatever be the proportion.”*

TriPLICATE ratio is just like duplicate ratio. Consider *four* proportional magnitudes:

A ___ B
C _____ D
E _____ F
G _____ H

We would write the proportion thus: $AB:CD :: CD:EF :: EF:GH$.

In this case, AB has to GH the triplicate ratio of that which it has to CD.

That is, if AB is $\frac{1}{2}$ of CD, then it is a $\frac{1}{2}$ of a $\frac{1}{2}$ of a $\frac{1}{2}$ of GH. And a $\frac{1}{2}$ of a $\frac{1}{2}$ of a $\frac{1}{2}$ is the *triplicate ratio*, and we can see that it equal $\frac{1}{8}$.

Thus, we can also express the triplicate ratio as $(1:2)^3$, which we know is equal to 1:8

Book V Definitions Reading

11. CORRESPONDING MAGNITUDES

*“The term **corresponding magnitudes** is used of antecedents in relation to antecedents, and of consequents in relation to consequents.”*

This definition is simply giving us some terms with which to talk about the parts of proportions. Let’s take a look at an example proportion:

$$A : B :: C : D$$

The terms A and C, since they are the first terms in each ratio, are called the *antecedents*. The terms B and D, since they are the second terms in each ratio, are called the *consequents*.

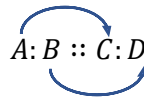
When antecedents or consequents are taken *together*, they are called *corresponding magnitudes*. In this example, A and C are corresponding magnitudes, and B and D are corresponding magnitudes.

12. ALTERNATE RATIO

*“**Alternate ratio** means taking the antecedent in relation to the antecedent and the consequent in relation to the consequent.”*

This is the first of several definitions that describe different forms of proportions. The importance of these forms will not become clear until later, but it is important that we take the time to learn them now. The first of these is the *alternate* form.

If you have this original proportion:

$$A : B :: C : D$$


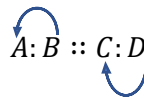
Then the alternate form would be:

$$A : C :: B : D$$

13. INVERSE RATIO

*“**Inverse ratio** means taking the consequent as antecedent in relation to the antecedent as consequent.”*

Thus, if you have this original proportion:

$$A : B :: C : D$$


Then the alternate form would be:

$$B : A :: D : C$$

14. COMPOSITION OF A RATIO

*“**Composition of a ratio** means taking the antecedent together with the consequent as one in relation to the consequent by itself.”*

Thus, if you have this original proportion:

$$A : B :: C : D$$

Then the composed (or “*componendo*”) form would be:

$$(A + B) : B :: (C + D) : D$$

Book V Definitions Reading

15. SEPARATION OF A RATIO

“Separation of a ratio means taking the excess by which the antecedent exceeds the consequent in relation to the consequent by itself.”

Separation is like composition, except with subtraction.

Thus, if you have this original proportion:

$$A : B :: C : D$$

Then the separated (or “separando”) form would be:

$$(A - B) : B :: (C - D) : D$$

16. CONVERSION OF A RATIO

“Conversion of a ratio means taking the antecedent in relation to the excess by which antecedent exceeds the consequent.”

The conversion of a ratio is the inverse of the separando form.

Thus, if you have this original proportion:

$$A : B :: C : D$$

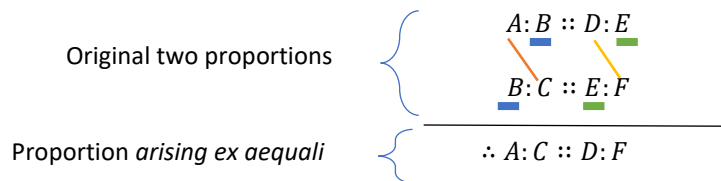
Then the converted (or “convertendo”) form would be:

$$A : (A - B) :: C : (C - D)$$

17. EX AEQUALI

“A ratio *ex aequali* arises when, there being several magnitudes and another set equal to them in multitude which taken two and two are in the same proportion, as the first is to the last among the first magnitudes, so is the first to the last among the second magnitudes.”

This definition is difficult to understand, especially without a diagram to refer to. We will see example of it later on; for now, let’s simply look at how to recognize when a proportion has *arisen ex aequali* from two other proportions. It looks like this:



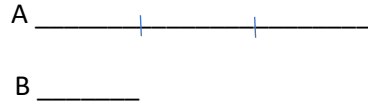
Can you follow the pattern here? Notice, in the ratios on the left-hand side of each of the original two proportions, B appears in both, but it does not appear in the left-hand ratio of the *ex aequali* proportion. Then, the antecedent of the first (A) and the consequent of the second (C) end up in a ratio in the *ex aequali* proportion.

Similarly, on the right side, E appears in both original proportions, but not in the one *ex aequali*. And the antecedent of the first (D) and the consequent of the second (F) are in a ratio in the *ex aequali* proportion.

Book V Definitions Questions

- Definition 1: "A magnitude is _____ of a magnitude, the less of the greater, when it _____ the greater."
- Looking at the diagram to the right, which of the following statements is true (circle all that apply):

- A is part of B
- B is part of A
- A measures B
- B measures A
- A is a multiple of B
- B is a multiple of A



- In particular, which multiple/part is B of A?

- List three different kinds of magnitudes: _____, _____, and _____
- Draw diagrams to the right to match the statements in the left column. Use line segments for all of your magnitudes, and make sure you are neat enough to make your meaning clear.

AB is a part of CD	
EF is a multiple of GH	
PQ measures RS three times	
AB is the fourth part of XY	
CD is the second multiple of QR	

- Write out the definition of *ratio* word for word:

Book V Definitions Questions

7. A ratio is a type of _____.

8. When two magnitudes are related in a ratio, in what respect are they being related?

9. Which of the following are said to *have a ratio* to one another, according to definition four. Put a check next to those that *can*, and an X next to those that cannot.

_____ Two finite lines

_____ A finite line and an infinite line

_____ The number 5 and the number 0

_____ Two angles in a triangle

_____ Two finite areas

_____ A line and a circle

10. Explain in your own words what it means to say that two ratios are the "same."

11. Looking at the magnitudes below, which of the ratios *appear* to be the same?

A _____

C _____

E _____

B _____

D _____

F _____

- a) A:B and C:D
- b) C:D and E:F
- c) A:B and E:F
- d) B:A and E:F

12. What is meant by equimultiples?

Book V Definitions Questions

13. Which of the following proportions are true? Circle all that apply.

- a) $1:2 :: 4:8$
- b) $1:3 :: 2:6$
- c) $1:3 :: 5:7$
- d) $2:3 :: 4:5$
- e) $2:10 :: 3:15$
- f) $4:6 :: 3:2$

14. Let's test out Euclid's definition of same ratio on a true proportion: $1:2 :: 3:6$.

Original	Alike Exceed	Alike equal	Alike fall short of
1 ○	○○○	○○	○
2 ○○	○○	○○	○○
3 ○○○	○○○○○○○○○○	○○○○○○○○	○○○
6 ○○○○○○○○	○○○○○○○○	○○○○○○○○	○○○○○○○○

In the second column, the **equimultiples** of the first and third magnitudes alike exceed the **equimultiples** of the second and fourth magnitudes.

What multiple is taken of the first and third? The _____ multiple.

What multiple is taken of the second and fourth? The _____ multiple.

In the third column, the **equimultiples** of the first and third magnitudes alike equal the **equimultiples** of the second and fourth magnitudes.

What multiple is taken of the first and third? The _____ multiple.

What multiple is taken of the second and fourth? The _____ multiple.

In the second column, the **equimultiples** of the first and third magnitudes alike fall short of the **equimultiples** of the second and fourth magnitudes.

What multiple is taken of the first and third? The _____ multiple.

What multiple is taken of the second and fourth? The _____ multiple.

Book V Definitions Questions

15. Now, test out Euclid's definition of same ratio on a false proportion: $1:2 :: 3:4$.

Original	Alike Exceed	Alike equal	Alike fall short of
1 ○	x3 ○○○	x2 ○○	x1 ○
2 ○○	x1 ○○	x1 ○○	x2 ○○○○
3 ○○○	x3 ○○○○○○○○○○	x2 ○○○○○○○○	x1 ○○○
4 ○○○○	x1 ○○○○	x1 ○○○○	x2 ○○○○○○○○○○

Which of the three tests does this proportion fail?

What does that mean about this proportion?

16. Write the following proportion out in words: $A:B :: C:D$

17. Write the following out in proportion notation: As AB is to CD, so is EF to GH.

18. Which of the following ratios is greater, 2:3 or 3:5? _____

19. Consider the following proportion in three terms: $A:B :: B:C$. Look at A and B, given below, and draw in C to be the appropriate length to make the proportion true.

A _____

B _____

C _____

Book V Definitions Questions

20. Write the following proportion in each of the following forms:

$$A : B :: C : D$$

Alternate: _____

Inverse: _____

Componendo: _____

Separando: _____

Convertendo: _____

21. Now, put into each form the proportion that immediately preceded it. That is, when you are taking the alternate, it is not the alternate of the original proportion, but the alternate of the inverse proportion that you just wrote. And so on.

Original: $A : B :: C : D$

Inverse: _____

Alternate: _____

Componendo: _____

Separando: _____

Alternate: _____

22. Given the following two proportions, what new proportion would arise *ex aequali*?

$$AB : CD :: GH : KL$$

$$\underline{CD : EF :: KL : MN}$$

\therefore _____

Book V Propositions Reading

V.7: *“Equal magnitudes have to the same the same ratio, as also has the same to equal magnitudes.”*

The truth of this proposition is very straightforward and easy to see. If you have two equal magnitudes, they will have the same ratio to the same third magnitude.

A _____
B _____ C _____

In if-then form, it looks like this:

IF: $A=B$, and there is some third magnitude C

THEN: $A:C :: B:C$

The last part—*“as also has the same to equal magnitudes”*—means that the inverse form of the proportion is also true.

The obvious truth of this proposition is clear if you think about it. If you and I are the same height, obviously we will compare to some third person’s height in the same way.

V.9: *“Magnitudes which have the same ratio to the same are equal to one another; and magnitudes to which the same has the same ratio are equal.”*

This proposition is the converse of V.7. It says:

IF: $A:C :: B:C$

THEN: $A = B$

Again, think about it: if you and I both compare to some third person’s height *in the same way*, then of course we would have to be the same height.

V.11: *“Ratios which are the same with the same ratio are also the same with one another.”*

Do you hear it? This is sort of like the common notion one of *ratios*. It looks like this:

IF: $A:B :: C:D$
and $C:D :: E:F$

THEN: $A:B :: E:F$

To make this clear and obvious, imagine a particular numerical ratio for A:B, say 1:3. If A:B is a 1:3 ratio, and it is the same with C:D, then C:D is also in a 1:3 ratio. But if $C:D :: E:F$, then E:F is also a 1:3 ratio. And that, of course, means that the ratio of A:B is the same as the ratio of E:F (both 1:3).

,

Book V Propositions Reading

V.12: *“If any number of magnitudes be proportional, as one of the antecedents is to one of the consequents, so will all the antecedents be to all the consequents.”*

This truth may surprise you. It says:

$$\text{IF: } AB:CD :: EF:GH :: KL:MN$$

$$\text{THEN: } AB:CD :: (AB + EF + KL):(CD + GH + MN)$$

Do you see how this works? As one of the antecedents is to one of the consequents (e.g. AB:CD, or any of the three ratios in the proportion), so will all the antecedents *taken together* be to all the consequents *taken together* (AB+EF+KL : CD+GH+MN).

V.15: *“Parts have the same ratio as the same multiples of them taken in corresponding order.”*

This means that if two magnitudes have a ratio, then equimultiples of them will have the same ratio. That is:

$$\text{IF: } A:B$$

$$\text{Then: } A:B :: CD:EF$$

A _____

B _____

C _____ D

E _____ F

If CD and EF are equimultiples of A and B respectively (say CD is the third multiple of A, and EF is the third multiple of B), then CD and EF are in the same ratio as A and B (i.e. $A:B :: CD:EF$)

It will always be true that $A:B :: 3A:3B$, or $A:B :: 5A:5B$. As long as **equimultiples** are taken, they will be in the same ratio as the original magnitudes.

V.16: *“If four magnitudes be proportional, they will also be proportional alternately.”*

This proposition simply states that the alternate form of a true proportion will always be true.

$$\text{IF: } A:B :: C:D$$

$$\text{THEN: } A:C :: B:D$$

V.18: *“If magnitudes be proportional separando, they will also be proportional componendo.”*

This proposition simply states that the *componendo* form of a true proportion will always be true.

$$\text{IF: } A:B :: C:D$$

$$\text{THEN: } A+B:B :: C+D:D$$

Book V Propositions Reading

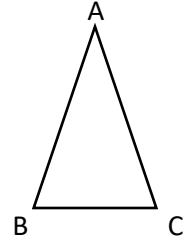
V.22: "If there be any number of magnitudes whatever, and others equal to them in multitude, which taken two and two together are in the same ratio, they will also be in the same ratio ex aequali."

This proposition simply states that proportions that arise *ex aequali* from true proportions will always be true.

$$\begin{array}{l} \underline{\text{I\!F:}} \\ \underline{\text{THEN:}} \end{array} \left\{ \begin{array}{l} A:B :: D:E \\ B:C :: E:F \end{array} \right. \quad \begin{array}{l} \text{---} \\ \therefore A:C :: D:F \end{array}$$

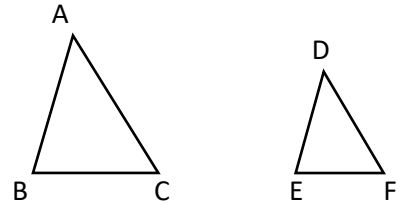
Book V Definitions Questions

1. If AB and AC are equal,
then (by V.7) _____



2. If $AB:BC :: AC:BC$
then _____

3. If in triangle ABC and DEF,
 $AB:BC :: DE:EF$,
then alternately _____



4. (Referring to the same diagram) If $AB:BC :: DE:EF$,
then inversely _____

5. (Referring to the same diagram) If $DF:AC :: EF:BC$,
then alternately _____

6. (Referring to the same diagram) If $BC:EF :: AB:DE$
then alternately _____

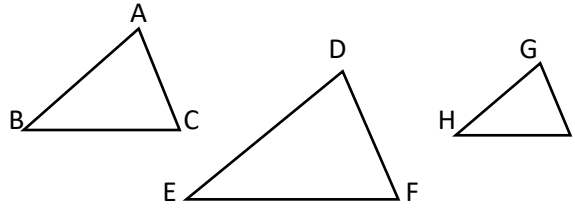
7. If A and B have a ratio (A:B),
then by V.15, write three true proportions:
_____, _____, and _____

8. Take the alternate form of one of your proportions in number 7: _____

Book V Definitions Questions

9. If $AB:BC :: DE:EF$
and $GH:HI :: DE:EF$

then _____



10. If $GH:HI :: DE:EF$,

then alternately _____

and inversely _____

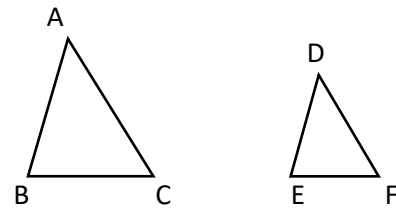
and componendo _____

11. If $A:B :: C:D :: E:F$

then by V.12 _____

12. Take the proportion in your answer to #11 above alternately: _____

13. If in triangle ABC and DEF,
 $AB:BC :: DE:EF$, and
 $BC:AC :: EF:DF$
then *ex aequali* _____



14. Now take the *ex aequali* proportion alternately _____

15. If $A:B :: C:D$, and $C:D :: E:F$,

then _____

Book V Definitions Questions

As you know, in Geometry, we do not deal much with number. Just to see that these truths hold true for *all magnitudes* (which includes number), let's try a few of them out with numbers. Your prior knowledge of fractions should confirm that all your conclusions are true.

16. If $2:3 :: 4:6 :: 8:12$

then by V.12 _____

17. If $1:2 :: 3:6$

then alternately _____

18. If $1:2 :: 5:10$

then componendo _____

19. Take the proportion in your answer to #18 alternately _____

20. If the number 2 and the number 3 have a ratio (2:3),

then by V.15, list three true proportions:

21. If $2:3 :: 4:6$ and
 $3:12 :: 6:24$

then *ex aequali* _____

22. Take your *ex aequali* proportion (from #21 above) alternately: _____

_____ :

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

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20 - 24, 2020

Course: Humane Letters 9

Teacher(s): Mr. McKowen (robert.mckowen@greatheartsirving.org)

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

Mrs. Hunt (natalie.hunt@greatheartsirving.org)

Weekly Plan:

Monday, April 20

- Thesis statement, outline, and supporting quotations for *Old Man and the Sea* essay (40 min)
- Read *America: A Narrative History* pp. 1258-1268 (40 min)
- Order your copy of *The Tempest* by William Shakespeare (ISBN: 978-1501130014)

Tuesday, April 21

- Write 3 body paragraphs for your essay (40 min)
- Read *America: A Narrative History* pp. 1268-1276 (40 min)

Wednesday, April 22

- Revise thesis statement and write intro and conclusion (40 min)
- Read *America: A Narrative History* 1276-1287 (40 min)

Thursday, April 23

- Revise your full rough draft (40 min)
- Read *America: A Narrative History* 1287-1298 (40 min.)

Friday, April 24

- Continue revisions (20 min)
- Read *America: A Narrative History* 1298-1307 (40 min.)
- Answer history questions (20 min)

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, April 20

1. Choose a prompt from the list at the end of this packet for your essay on *The Old Man and the Sea*.
***If you choose to write on a topic of your own devising, email your teacher ASAP for permission and guidance!
2. Spend about 40 minutes developing a thesis statement and outline, including important quotations that you plan to analyze in your argument.
3. Read *America: A Narrative History* ch. 28 pp. 1258-1268.

Tuesday, April 21

1. Write a rough draft of the three central paragraphs of your paper, based on your outline from yesterday. Be sure that you format your quotations from the text correctly, and that you provide analysis that supports your thesis statement!
2. Read *America: A Narrative History* ch. 28 pp. 1268-1276

Wednesday, April 22

1. Revise your thesis statement by asking yourself the questions
 - a. Is it a single sentence?
 - b. Is it clear and specific? If not, rewrite and sharpen the sentence.
 - c. Does it introduce an argument? That is, does it take a position on a central question about the text that must be supported with evidence and analysis?
 - d. Does it provide your reader with a roadmap to your argument?
2. Write an introduction and a conclusion for your paper. **You should now have a complete rough draft.**
3. Read *America: A Narrative History* 1276-1287

Thursday, April 23

1. Carefully revise your rough draft. Strengthen your argumentation and root out technical errors that will detract from the beauty and clarity of your paper.
2. Read *America: A Narrative History* 1287-1298

Friday, April 24

1. Continue to revise your paper. Type it if it is not already typed. Make sure that your paper is formatted correctly (margins, font, spacing) with your full heading and a creative title! The final draft will be due on **Sunday, May 3**, so you may choose to bring your questions to office hours today and then continue your revisions next week.
2. Read *America: A Narrative History* 1298-1307.
3. Answer questions 2, 4, and 5 on page 1259. Write at least one paragraph for each question, and be sure to use specific historical details in your answers.

Essay: *The Old Man and the Sea*

Write a five paragraph essay on one of the following prompts.

Your paper should include a gripping **introduction**, a strong **thesis statement** that introduces an argument, clear **supporting evidence**, incisive **analysis** of quotations from the text, and an elegant **conclusion**.

Each paragraph in the body of your paper should begin with a **topic sentence** that establishes the purpose of the paragraph and end with a **concluding sentence** that provides a transition into the next paragraph.

Remember that a prompt is there to guide your thinking as you formulate your thesis statement. You will not necessarily address every aspect of the prompt in your essay.

Essays Prompts:

1. Note the unique relationship between Santiago and Manolin. How do they treat each other? How does loyalty impact their communion (Def. The sharing or exchanging of intimate thoughts and feelings, especially when the exchange is on a mental or spiritual level.)? How has their relationship changed by the end?
2. Analyze the tension between guilt and responsibility in the novel as the old man physically and mentally wrestles with nature. How do these two themes contrast with how the old man views different sea creatures (i.e., the marlin, sharks, birds, etc.)?
3. Explore the purpose of the old man's venture out into the open ocean. Was it to make a living? Was it to prove his skill? Was it a fight against growing old? Identify what motive or motives he might have had in going so far beyond the normal fishing grounds.
4. Analyze Hemingway's descriptions of Santiago's physical features throughout the story, particularly his hands and his eyes. What do these descriptions reveal about his character?
5. A question of your choice dealing with a weighty theme in the novella. If you choose this option, do not start writing until you have discussed your topic with your teacher via email!

Reminders:

- Essays are a major component of the quarter's English grade.
- Final drafts must be typed and double spaced, using Times New Roman 12pt. font and 1 inch margins.
- Papers must have students' full heading (name, class, teacher, date) and a creative title on the first page.

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20 - 24, 2020

Course: 9 Latin III

Teacher(s): Mr. Bascom john.bascom@greatheartsirving.org

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

Weekly Plan:

Monday, April 20

- Read the Latin on page 84
- Read *About the language 1: indirect statement (concluded)* by going through 1-4 of the directions

Tuesday, April 21

- Read *accusatio I* and answer questions

Wednesday, April 22

- Review *About the language 1: indirect statement (concluded)*
- Complete the [indirect statement](#) worksheet

Thursday, April 23

- Read *accusatio II*
- Analyze words 1-12

Friday, April 24

- Read *cognitio*
- Write a brief summary

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, April 20

1. Read the Latin on page 84

- a. Do you notice anything in sentences 1-3 that you have not encountered before?

Hint: in each indirect statement for 1-3, notice the tense of the verb of sense perception and the tense of the infinitive.

Ex. *primus accusator affirmavit multa scelera a Salvio in Britannia commissa esse.*

2. Read *About the language 1: indirect statement (concluded)*

1. Read over the sentences for #1. Notice that all the verbs of sense perception are in the **present tense**.
2. Read over the sentences for #2. Notice that the verbs of sense perception are in a **past tense** (imperfect or perfect).
3. Take your time looking at these sentences, noticing the tenses of the verbs (specifically the infinitives) and how they are translated.

Notice: in the first sentence of #2:

puer dixit custodem revenire.

The boy said that the guard was returning.

The main verb *dixit* is in the perfect tense and the infinitive, *revenire* is in the present tense. That infinitive, however, is translated ‘was returning’, which is a past tense translation.

Look at the second sentence: *recitaturam esse* is a future infinitive.

Look at the third sentence: *deletas esse* is a perfect infinitive

Notice the Rule:

In indirect statement:

- Present tense infinitives are contemporaneous with (happen at the same time as) the verb of sense perception (whether that verb is past, present, or future).
- Future tense infinitives happen in the future in relation to the verb of sense perception.
- Perfect tense infinitives happen in the past in relation to the verb of sense perception.

4. For #3, write out a translation of sentences c-j.

For the indirect statement sentences (d, f, h, j)

- Copy down the verb of sense perception and the infinitive
- Indicate the tense of each.

Example:

b. Translation: “the accusers affirmed that Salvius had committed many wicked (deeds).”

affirmaverunt : perfect tense

commisisse : perfect infinitive

NOTE: the translation ‘had committed’ indicates that the action of the infinitive verb took place further in the past than the action of ‘affirmaverunt’ (affirmed).

Tuesday, April 21

1. Read *accusatio I*
2. Answer the following questions:
 1. What is Salvius accused of? By whom is he accused?
 2. How does Salvius react to this accusation at first (ln. 3-4)
 3. Translate lines 5-9 (Salvio roganti...veniamque peteret)
 4. What did Salvius decide to do (ln. 10-11).
 5. Who was helping Glabrio and the other accusers to prepare their case? What was his relation to Salvius? Why was he betraying Salvius?
 6. Why did Domitian 'caute se gessit' when he heard about the accusation?
 7. How did Domitian react towards Salvius and why?

Wednesday, April 22

1. Briefly review Monday's *About the language 1: indirect statement (concluded)*
2. Complete the indirect statement worksheet below. If you are unable to print the worksheet, simply number the sentences on a loose leaf piece of paper, copy down the required verbs, the time relationship and the translation (see the worksheet for more detailed directions).

Thursday, April 23

1. Read *accusatio II*, be sure you fully understand the story and how the analyzed words fit in.
2. Analyze the following words:
 1. revocata ln. 1
 2. meditabatur ln. 3
 3. Salvium ln. 3
 4. patefecerat ln. 4
 5. Domitiae ln. 4
 6. litteris ln. 5
 7. relegatam esse ln. 6
 8. accusatores ln. 8
 9. inscriptas ln. 12
 10. quibus ln. 13
 11. sibi ln. 16
 12. omni ln. 17

NOTE: for your analysis, be sure you state the part of speech of each underlined word. If the word is a participle simply state that.

1. Verb: identify its 5 parts; if subjunctive, state the reason.
2. Noun: identify its 3 parts and grammatical function
3. Pronoun: identify its 3 parts and antecedent.
4. Adjectives: identify its 3 parts and the a noun it is modifying
5. Participles: identify its gender, number, case, tense and voice and its antecedent.

If you need to, refer to the index on page 257 to find information on each of these parts of speech.

Friday, April 24

1. Read *cognitio*.
2. Write a brief summary of the story describing the progression of the story. Try to clearly state the most important aspects but write no more than 2 sentences per paragraph.

Indirect statement

Complete the table by underlining the main verb, and **circling the infinitive**, and indicating the time relationship of each infinitive with its main verb (STMV = same time as the main verb; TBMV = time before the main verb; TAMV = time after the main verb). Then translate the sentence. One is done for you.

	Time relationship
<p>1 Pōlla <u>affirmat</u> sē huic senī nūbere nōlle*. <i>Polla declares that she doesn't want to marry this old man.</i> (I bolded the infinitive because I could not double underline it)</p>	STMV
<p>2 Pōlla affirmāvit sē huic senī nūbere nōlle.</p>	
<p>3 scītisne vōs ad cēnam invītātōs esse?</p>	
<p>4 scīvistisne vōs ad cēnam invītātōs esse?</p>	
<p>5 audiō Agricolam epistulam mīsisse.</p>	
<p>6 audiō Agricolam epistulam missūrum esse.</p>	
<p>7 audīvī Agricolam epistulam mīsisse.</p>	
<p>8 audīvī Agricolam epistulam missūrum esse.</p>	
<p>9 senātōrēs putant exercitum Hiberniam oppugnātūrum esse.</p>	
<p>10 senātōrēs putāvērunt exercitum Hiberniam oppugnātūrum esse.</p>	
<p>11 prō certō habēmus amīcōs nostrōs in carcere tenērī.</p>	
<p>12 prō certō habēbāmus amīcōs nostrōs in carcere tenērī.</p>	

Remote Learning Packet - Week 4

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20-24, 2020

Course: Music

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

Weekly Plan:

Monday, April 20

- 15 minutes of reading - Read through the [Week 3 reading on J.S. Bach, Preludes and Fugues, and Baroque Dances](#).
- Check your work: Also, please go through the [Week 3 melodies \(with answers\)](#) and check your work for accuracy. If you have any questions, please let me know so I can explain or clarify.

Tuesday, April 21

- Continue reading: [Week 4 reading on J.S. Bach, Preludes and Fugues, and Baroque Dances](#) for 10 minutes
- Summarize: Write a summary for 5 minutes (instructions below)

Wednesday, April 22

- Listen to [WRR 101.1](#) (on the radio or through online streaming) for 12 minutes and follow the next step.
- Please fill in the attached listening guide. Refer to a list of terminology provided, in order to use these terms accurately. Use terms that you did not use last week. If you need further clarity on any of these terms, please research them further and be ready to ask questions during our optional office hour.

Thursday, April 23

- Please answer the questions about [J.S. Bach Fugue in C with added text](#). You will need information from this [music theory guide](#) as well as from the Week 3 reading.

Friday, April 24

- Complete any work this week you have not completed.
- For 15 minutes, watch and listen to my friend, Thomas Schwan's [performance of the J.S. Bach Preludes and Fugues](#), and please write a review using terminology from the listening guide. Use at least 5 new terms this week in 5 different sentences (one new term per sentence). *If you have limited (or no) internet connectivity, you may substitute this by listening to 15 minutes of WRR 101.1 FM radio music and write a review about it instead using the same review guidelines.*

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

Details for each assignment:

Monday, April 20

- 10 minutes of reading - Read through the [Week 4 reading on J.S. Bach, Preludes and Fugues, and Baroque Dances](#).
- 5 minutes of summarizing - Answer the following questions:
 - What are some things that J.S. Bach did to impress the Margrave of Brandenburg? What kinds of combinations of instruments did Bach use in the *Brandenburg Concertos*?
 - Please explain what is a *cadenza*.
 - What is a *solo* and a *ritornello*?
- Check your work: Also, please go through the [Week 3 melodies \(with answers\)](#) and check your work for accuracy. If you have any questions, please let me know so I can explain or clarify.

Tuesday, April 21

- Continue reading: [Week 3 reading on J.S. Bach, Preludes and Fugues, and Baroque Dances](#) for 10 minutes
- Summarize: Write a summary for 5 minutes, answering these questions:
 - What is a *fugue* and what does the term mean? Why do you think this term became popular for this type of composition of imitative polyphony?
 - What is a fugal *subject*? Why is the subject extremely important in a fugue?
 - How is the subject presented in all of the different voices?

Wednesday, April 22

- Listen to [WRR 101.1](#) (on the radio or through online streaming) for 12 minutes and follow the next step.
- Please fill in the attached listening guide. Refer to a list of terminology provided, in order to use these terms accurately. Use terms that you did not use last week. If you need further clarity on any of these terms, please research them further and be ready to ask questions during our optional office hour.

Thursday, April 23

- Please answer the questions about [J.S. Bach Fugue in C with added text](#).
- Using this [music theory guide](#) as well as from the Week 3 reading (the section on fugues), please answer the following questions on the score provided:
 - What is the first voice to introduce the subject? (Behold, a king...)
 - What is the first voice to introduce the next statement of the subject? In which measure does this occur?
 - Which voice introduces the subject next? In which measure does this occur? Finally, which voice introduces the last statement of the subject?
 - At each of these entrances, please write different dynamic symbols (provided on the music theory guide). Make sure to use variety in dynamics and to build up the volume as the number of voices increases.
 - For every appearance of the word "King," please add an accent mark on those notes. Also, add staccato markings to each note in "Behold a" and "reign in."
 - Add crescendo and decrescendo signs to lead into louder or softer dynamic levels.

Friday, April 24

- Complete any work this week you have not completed.
- For 15 minutes, watch and listen to my friend, Thomas Schwan's [performance of the J.S. Bach Preludes and Fugues](#), and please write a review using terminology from the listening guide. Use at least 5 new terms this week in 5 different sentences (one new term per sentence). *If you have limited (or no) internet connectivity, you may substitute this by listening to 15 minutes of WRR 101.1 FM radio music and write a review about it instead using the same review guidelines.*

*A note about the concert review: For obvious reasons, you are no longer required to attend a concert. Instead of doing that, you will gather information from your listening log and your notes from the readings I provide. You will take many notes over the next few weeks, so it is important that you keep these organized. Your final project will include listening to a concert with a variety of classical music, and you will write a paper about it. You will be expected to use the terminology provided in the weekly handouts. More details to come.

If you already turned in your concert review, you will still be expected to do all of these assignments, and your final project will be somewhat reduced.

the beginning; the fact that the lively second ritornello has nothing whatsoever to do with the official ritornello, namely the fanfare; and the way the solo violin keeps darting around and changing the kind of virtuoso material it plays throughout the movement.

However, order is asserted when the third ritornello takes the original fanfare as its point of departure (in the minor mode). And the final ritornello returns to its origins almost literally, as in the first movement.

JOHANN SEBASTIAN BACH

Brandenburg Concerto No. 5, for Flute, Violin, Harpsichord, and Orchestra (before 1721)



A concerto grosso is a concerto for a group of several solo instruments (rather than just a single one) and orchestra. In 1721 Johann Sebastian Bach sent a beautiful manuscript containing six of these works to the margrave of Brandenburg, a minor nobleman with a paper title—the duchy of Brandenburg had recently been merged into the kingdom of Prussia, Europe’s fastest-growing state. We do not know why this music was sent (if Bach was job-hunting, he was unsuccessful) or if it was ever performed in Brandenburg.

To impress the margrave, presumably, Bach sent pieces with six different combinations of instruments, combinations that in some cases were never used before or after. Taken as a group, the *Brandenburg* Concertos present an unsurpassed anthology of dazzling tone colors and imaginative treatments of the concerto contrast between soloists and orchestra.

Brandenburg Concerto No. 5 features as its solo group a flute, violin, and harpsichord. The orchestra is the basic Baroque string orchestra (see page 113). The harpsichordist of the solo group doubles as the player of the orchestra’s continuo chords, and the solo violin leads the orchestra during the ritornellos.

First Movement (Allegro) In ritornello form, the first movement of *Brandenburg* Concerto No. 5 opens with a loud, bright, solid-sounding orchestral ritornello. We have seen this music before, as an example of a typical Baroque melody—intricate, wide-ranging, and saturated with sequences (see page 114). The brackets show the three segments of the ritornello, **a**, **b**, and **c**, that recur in the movement:

Once the ritornello ends with a solid cadence, the three solo instruments enter with rapid imitative polyphony. They dominate the rest of the movement. They introduce new motives and new patterns of figuration, take over some motives from the ritornello, and toss all these musical ideas back and forth between them. Every so often, the orchestra breaks in again, always with clear

“I Shall

1. set the boys a shining example of an honest, retiring manner of life, serve the School industriously, and instruct the boys conscientiously
2. Bring the music in both the principal Churches of this town [Leipzig] into a good state, to the best of my ability
3. Show to the Honorable and Most Wise Town Council all proper respect and obedience.”

Bach's contract at Leipzig, 1723—the first three of fourteen stipulations

fragments of the ritornello, in various keys. All this makes an effect very, very different from Vivaldi's Violin Concerto in G, not only because of the sheer length of the movement but also because of the richness of the counterpoint and the harmony.

During a particularly striking solo section in the minor mode (the first section printed in red on Listening Chart 5), the soloists abandon their motivic style and play music with even richer harmonies and intriguing, special textures. After this, you may be able to hear that all the remaining solos are closely related to solos heard before the minor-mode section—all, that is, except the very last. Here (the second red-printed section on the Listening Chart) the harpsichord gradually outpaces the violin and the flute, until finally it seizes the stage and plays a lengthy virtuoso passage, while the other instruments wait silently.

An improvised or improvisatory solo passage of this kind within a larger piece is called a cadenza. Cadenzas are a feature of concertos in all eras; the biggest cadenza always comes near the end of the first movement, as in *Brandenburg* Concerto No. 5.

In this cadenza, the harpsichord breaks out of the regular eighth-note rhythms that have dominated this long movement. Its swirling, unexpectedly powerful patterns prepare gradually but inexorably for the final entrance of the orchestra. This is an instance of Bach's masterful ability to ratchet up harmonic tension and expectancy.

Finally the whole ritornello is played, exactly as at the beginning; after nine minutes of rich and complex music, we hear it again as a complete and solid entity, not in fragments.

FLUTE

VIOLIN

etc.






This painting is thought to depict a viola da gamba player of Bach's time named C. F. Abel and his musician sons. It is a symbolic picture: The kindly, soberly dressed father is holding his continuo instrument (the viol) as a support for the upper lines of the boys, who wear the frothy costumes of a later era. One of them would become a major composer.

LISTENING CHART 5

Bach, *Brandenburg* Concerto No. 5,
first movement

Ritornello form. 9 min., 44 sec.



1 5	0:00	Ritornello (a, b, and c)	Complete ritornello is played by the orchestra, forte : bright and emphatic.	
	0:20	Solo	Harpichord, flute, and violin in a contrapuntal texture. Includes faster rhythms; the soloists play new themes and also play some of the motives from the ritornello.	
	0:44	Ritornello (a only)	Orchestra, f	
	0:49	Solo	Similar material to that of the first solo	
	1:09	Ritornello (b)	Orchestra, f	
	1:15	Solo	Similar solo material	
	1:36	Ritornello (b)	Orchestra, f ; minor mode	
	1:41	Solo	Similar solo material at first, then fast harpsichord runs are introduced.	
2 6	2:23	Ritornello (b)	Orchestra, f	
0:06	2:29	Solo	This solo leads directly into the central solo.	
0:31	2:54	Central solo	Quiet flute and violin dialogue (accompanied by the orchestra, p) is largely in the minor mode. The music is less motivic, and the harmonies change less rapidly than before.	
0:55	3:19		Detached notes in cello, flute, and violin; sequence	
1:34	3:52		Long high notes prepare for the return of the ritornello.	
3 7	4:06	Ritornello (a)	Orchestra, f	
0:04	4:10	Solo		
0:48	4:54	Ritornello (a and b)	Orchestra, f ; this ritornello section feels especially solid because it is longer than the others and in the tonic key.	
1:00	5:05	Solo		
1:27	5:34	Ritornello (b)	Orchestra, f	
1:33	5:40	Solo	Fast harpsichord run leads into the cadenza.	
4 8	6:18	Harpichord cadenza	<i>Section 1</i> : a lengthy passage developing motives from the solo sections	
1:46	8:05		<i>Section 2</i> : very fast and brilliant	
2:11	8:30		<i>Section 3</i> : long preparation for the anticipated return of the ritornello	
5 9	9:14	Ritornello (a, b, and c)	Orchestra, f , plays the complete ritornello.	

► Access Interactive Listening Chart 5 at bedfordstmartins.com/listen

Second Movement (Affettuoso) After the forceful first movement, a change is needed: something quieter, slower, and more emotional (*affettuoso* means just that, emotional). As often in concertos, this slow movement is in the minor mode, contrasting with the first and last, which are in the major.

Baroque composers had a simple way of reducing volume: They could omit many or even all of the orchestra instruments. So here Bach employs only the three solo instruments—flute, violin, and harpsichord—plus the orchestra cello playing the continuo bass.

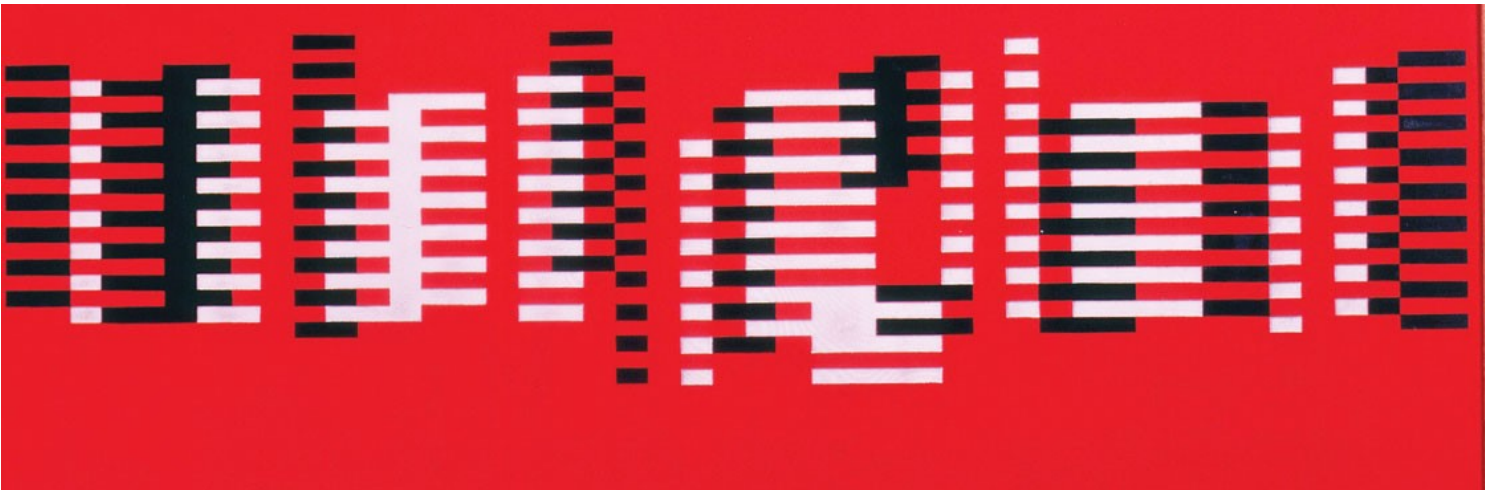
Third Movement (Allegro) The full orchestra returns in the last movement, which, however, begins with a lengthy passage for the three soloists in imitative, or fugal style (see the next section of this chapter). The lively compound meter with its triple component—*one* two three *four* five six—provides a welcome contrast to the duple meter of the two earlier movements.

2 Fugue

Fugue is one of the most impressive and characteristic achievements of Baroque music, indeed of Baroque culture altogether. In broad, general terms, fugue can be thought of as systematized imitative polyphony (see page 34). Composers of the Middle Ages first glimpsed imitative polyphony, and Renaissance composers developed it; Baroque composers, living in an age of science, systematized it. The thorough, methodical quality that we pointed to in Baroque music is nowhere more evident than in fugue.

A **fugue** is a polyphonic composition for a fixed number of instrumental lines or voices—usually three or four—built on a single principal theme. This theme, called the fugue **subject**, appears again and again in each of the instrumental or vocal lines.

The term *fugue* itself comes from the Latin word *fuga*, which means “running away”; imagine the fugue subject being chased from one line to another. Listening to a fugue, we follow that chase. The subject stays the same, but it takes on endless new shadings as it turns corners and surrounds itself with different melodic and rhythmic ideas.

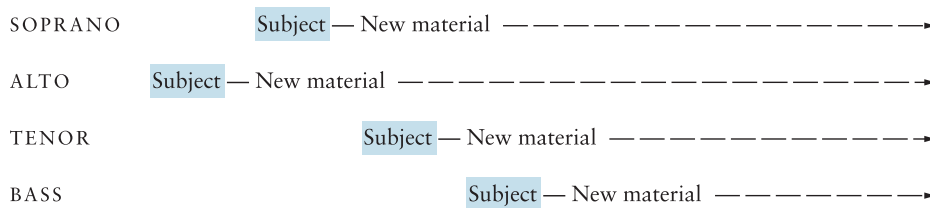


Fugue by Josef Albers. One can almost see the exposition and the subsequent subject entries.

Fugal Exposition

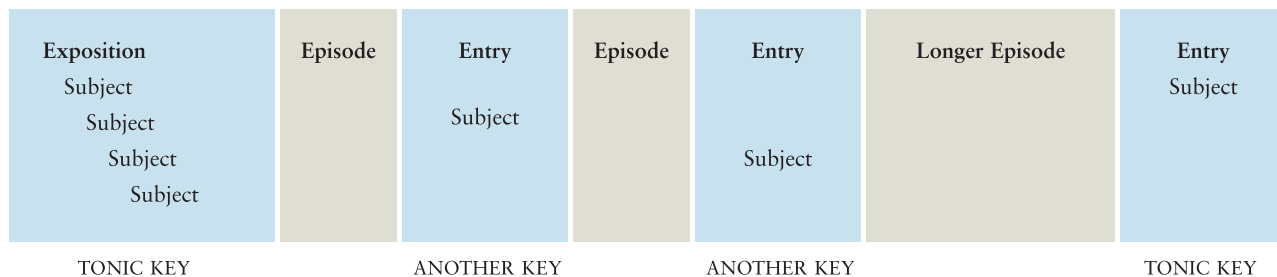
A fugue begins with an **exposition** in which all the voices present the subject in an orderly, standardized way. (The contrapuntal lines in fugues are referred to as *voices*, even when the fugue is written for instruments. We will refer to the four lines in our Bach fugue for keyboard as the *soprano*, *alto*, *tenor*, and *bass*.)

First, the subject is announced in the most prominent fashion possible: It enters in a single voice without any accompaniment, while the other voices wait. Any voice can begin, and any order of entry for the other voices is possible; in the first diagram below, we follow the order of the example on our recording (alto, then higher up for the soprano, then below the alto for the tenor, and finally, lowest of all, the bass). After leading off, voice 1 continues with new material of its own while the subject enters in voice 2. Next, the subject arrives in voice 3—with 1 and 2 continuing in counterpoint with it (and with each other), using more new material, and so on. This section of a fugue, the exposition, is over when all the voices have stated the subject.



After the exposition, the subject enters at intervals; usually it is spaced out by passages of other music. It may come at the top of the texture (in the soprano), the bottom (bass), or half hidden away in the middle; see the diagram below. Some of these later **subject entries** come in different keys. Although the modulations to these other keys may not be very obvious, without them the music would be dull and stodgy.

The passages of music separating the later subject entries are called **episodes**. They provide a contrast to the subject entries. This is true even though their motives are often derived from the subject; in such cases, the episodes present not the subject in full but fragments of it, and so they stand apart from subject entries. After the exposition, the form of a fugue falls into an alternating pattern: Episodes of various lengths come between subject entries in various voices and in various keys. Here is a diagram of a typical short fugue:



Fugal Devices

Many specialized techniques can enter into the imitative polyphony of fugues, and the art of composing them has been so often analyzed and taught in the wake of Bach that a whole terminology has grown up. In addition to *exposition*, *subject*, and *episode*, there is the **countersubject**, a kind of second

subject that fits together in counterpoint with the first, shadowing it in all its appearances after the beginning.

Composers may lengthen or shorten all the notes in the subject, making it twice as slow or twice as fast. They might turn the melody of the subject upside down, *inverting* its every interval (so that where the original subject went up a step, the **inversion** will go down, and so forth). Very often they shorten the space between subject entries from what was heard in the exposition, so that the entries follow one another faster and are stacked almost on top of each other. This technique is called **stretto** (the Italian word for “narrow”). All these possibilities and more are basic to the ingenious contrapuntal art of the fugue.

JOHANN SEBASTIAN BACH

Prelude and Fugue No. 1 in C Major, from *The Well-Tempered Clavier*, Book 1 (1722)



The *Well-Tempered Clavier* is a kind of encyclopedia of fugue composition, in which the greatest master of the genre tried out almost every technique and style available to it. It falls into two books, the first gathered together in 1722, the second twenty-two years later. Each book presents, systematically, a fugue in every key and in both major and minor modes: 12 keys × 2 modes × 2 books—that’s 48 fugues in all. Each fugue is preceded by an introductory piece, or **prelude**, in the same key and mode (forty-eight more pieces!).

Some of the fugues give the impression of stern regimentation, some are airy and serene; some echo counterpoint from a century before, others sound like up-to-date dances; some even seem to aim for comic effect. Bach was unsurpassed in the expressive variety he could milk from fugal techniques.

Clavier (or *Klavier*) is today the German word for piano. In Bach’s time it referred to a variety of keyboard instruments, including the harpsichord and the very earliest pianos (but not including the church organ). The term *well-tempered* refers to a particular way of tuning the keyboard, among the several employed in the eighteenth century. The *Well-Tempered Clavier* was probably played in Bach’s time on various instruments, but most often on harpsichord. Our prelude and fugue are played on piano by a modern master of Bach interpretation, Glenn Gould (see page 134).

“The bearer, *Monsieur J. C. Dorn*, student of music, has requested the undersigned to give him a testimonial as to his knowledge in *musicis*. . . . As his years increase it may well be expected that with his good native talent he will develop into a quite able musician.”

Joh. Seb. Bach (a tough grader)

6
10

Prelude Like the fugues, the preludes in the *Well-Tempered Clavier* display a wide variety of moods, from gentle and lyrical to aggressive and showy, and they explore many musical textures (though usually not the imitative polyphony that features in the fugues to follow). Each prelude tends to occupy itself in an almost obsessive manner with a single musical gesture, repeating it over and over across shifting harmonies. The preludes are, in their different way, systematic like the fugues that follow.

The most famous of them—and also one of the easiest for the novice pianist to work through—is the first, in C major. Its basic gesture is an upward-moving **arpeggio**—that is, a chord “broken” so that its pitches are played in quick succession rather than simultaneously. The wonder of this simple prelude is the rich array of chords Bach devised for it. We feel at its end as if we have taken a harmonic journey, ranging away from our starting point, exploring some rather rocky pathways (that is, dissonant harmonies), and finally—satisfyingly—arriving back home.

Glenn Gould (1932–1982)

The Canadian pianist Glenn Gould is remembered for making Bach, and especially his keyboard works, widely popular from the 1950s on. At that time the preferred medium was the harpsichord, which had been revived so that Bach could be played on his own instrument; audiences were specialized, to say the least, and pianists didn't play much Bach. Significantly, Gould's first great success was a best-selling three-LP recording of one of Bach's encyclopedic works, the *Goldberg Variations*. In a stroke he created a uniquely modern Bach sound by imitating the harpsichord on the piano, joining the crisp, even attack of the older instrument with the potent dynamic range of the newer one.

Thus his playing of Bach's Prelude No. 1 in C sounds less like chords made by a swishing harp than a hollow series of pings; yet the dynamics fall and rise, rise and fall so purposefully that this simple piece produces an almost majestic effect. Notice how carefully *p* and *f* moments are coordinated with the harmonies spelled out by the chords. In the fugue, Gould is in his element—every entry is loud and clear!

Like many performers, old and new, classical and popular, Gould derived some of his fame from his eccentricities. At concerts he had to have the piano bench very low and the temperature in the hall very high. On our recording you will hear weird little noises behind the music; even the top recording engineers couldn't filter out Gould's constant humming or yelping when he played.



Gould was also a popular broadcaster, promoting his pet ideas. For example, he thought that concerts were outmoded and the future of music lay with recordings. He was wrong, but it worked for him; for nearly twenty years at the end of his life, he concentrated on building up an extraordinary archive of recordings but played no concerts at all.

7 *Fugue* Perhaps because this fugue takes pride of place in the *Well-Tempered Clavier*, Bach crafts it with extraordinary economy and single-mindedness. There are no episodes here, and there is no countersubject to speak of. There are only incessant entries of the subject—twenty-four in all. (Was Bach, who loved number games, referring to the number of fugues in the whole of Book 1?) Many of them overlap in stretto fashion.

The subject is introduced in a spacious exposition—soprano, tenor, and bass follow the alto at even time intervals. The subject moves stepwise up the scale in even rhythms at first, only to reverse course with a quick twist downward. Listen carefully for this twist; it will help you pick out the many subject entries to come. (The whole subject is shown in Listening Chart 6.)

After the exposition, however, all bets are off, fugally speaking. Instead of the more usual episodes alternating with orderly entries of the subject, this fugue is all about stretto. The first stretto comes as soon as the exposition is complete, with two voices overlapping, and from then on entries begin to pile up.

But an overall order underlies all these strettos. The fugue comes, exactly at its midpoint, to a strong cadence on a key different from our starting key, and in the minor mode. This articulates but does not stop the action, as the stretto entries of the subject begin again immediately, back in the home key.

LISTENING CHART 6

Bach, *The Well-Tempered Clavier*, Book 1, Fugue 1 in C Major

1 min., 55 sec.



0:00	Exposition	<i>Fugue subject in:</i>
0:00		A (alto)
0:06		S (soprano)
0:12		T (tenor)
0:18		B (bass)
0:24	First stretto ,	S and T
0:32	Subject entry: A	
0:38	More stretto entries: B, A, T	
0:51	CADENCE	minor mode
0:52	Quickest voice entries yet in stretto : A, T, B, S	
1:01	More stretto : S, A, T, B	
1:33	CADENCE	major mode, home key; but three more entries follow quickly in stretto : T, A, S



▶ Access Interactive Listening Chart 6 at bedfordstmartins.com/listen

Indeed, as if to counterbalance the clarity of the cadence, the entries here come faster than anywhere else in the fugue—eight of them in quick succession. At one moment four entries all overlap, the last beginning before the first has finished.

After this frenzy of entries, even a big cadence back in the home key takes a moment to sink in, as three more entries of the subject quickly follow it. The energy of all this finally comes to rest in the soprano voice, which at the very end floats beautifully up to the highest pitch we have heard.

3 Baroque Dances

We have sampled Italian and German music of the Baroque era, and turn now to the French tradition. All Europe associated France with dance music. Paris was a center for ballet, which has always been a particularly strong feature of French opera—and French opera of the Baroque era was particularly grand and spectacular. An admirer writes of the great opera composer Jean-Philippe Rameau: “As a composer of dances, he bewilders comparison.”

The Dance Suite

Many different dance types existed in the Baroque era. What distinguished them were features originally associated with the dance steps—a certain meter, a distinctive tempo, and some rhythmic attributes. The **minuet**, for example, is a simple dance in triple time at a moderate tempo. The slower **sarabande** is a little more intricate; also in triple time, it has an accent on the second beat of the measure, as well as the normal accent on the first.



Concerts began late in the Baroque era. They were sometimes given in parks, where music accompanied gossip, flirtation, and food.

The custom all over Europe was to group a collection of miscellaneous dances together in a genre called the **suite**. Which dances occurred in a suite was not subject to any general rule, nor was there any specified order. But all the dances in a suite kept to the same key, and the last of them was always fast—frequently a **gigue**, a dance in compound meter that may have been derived from the Irish jig. Otherwise there was no standard overall structure to a suite.

Composers also wrote a great many dances and dance suites for the lute or the harpsichord. These are *stylized* dances, pieces written in the style and form of dance music but intended for listening rather than dancing, for mental rather than physical pleasure. Compared with music written for the actual dance floor, stylized ones naturally allowed for more musical elaboration and refinement, while still retaining some of the typical features of the various dances.

Baroque Dance Form

A Baroque dance has two sections, **a** and **b**. Each ends with a strong cadence coming to a complete stop, after which the section is immediately repeated. Both sections tend to include the same motives, cadences, and other such musical details, and this makes for a sense of symmetry between them, even though **b** is nearly always longer than **a**. Hence Baroque dance form is diagrammed **a a b b**, abbreviated as |: **a** :||: **b** :| where the signs |: and :| indicate that everything between them is to be repeated. This form is also called binary form.

1.

 1 2 3 4
 Do' Ti La Sol La Sol Fa Mi — Re Mi Fa Mi Fa Sol La Ti Do' —
 1-2 3 4 1+ 2+ 3-4 1+ 2 3+ 4 1 2 3-4

2.

 1 2 3 4
 Do Re Do Ti, Do Re Mi Fa — Mi Re Do —
 1 2+ 3 1 2 3 1-2 3+ 1-2-3

3.

 1 2 3 4
 Do Re Mi Re Do — Ti, La, Sol, La, Ti, Do —
 1+ 2 3 1-2 3+ 1 2 3 1-2-3

4.

 1 2 3 4
 Do Ti, Do Re Mi Mi Fa Mi Re — Mi Re Do Ti, La, Ti, Do Re Do —
 1+ 2+ 3 4 1 2 3-4 1+ 2+ 3 4 1 2 3-4

5.

 1 2 3 4
 Do Do Re Mi Mi Fa Sol La Sol Fa Mi — Fa Fa Mi Re Do Re Mi Re Do —
 1 2+ 3 4+ 1+ 2+ 3-4 1 2+ 3 4+ 1 2 3-4

6.

 1 2 3 4
 Do Re Mi Fa Sol La Sol Fa Mi Re Do
 1 2 1+ 2 1+ 2+ 1 2

7.

 1 2 3 4
 Do Do Ti, Do Re Do Ti, La, Sol, Fa, Sol, La, Sol, La, Ti, Do —
 1 2 3 4 1+ 2+ 3-4 1+ 2 3 4+ 1-2-3-4

8.

 1 2 3 4
 Do Re Mi Re Mi Fa Sol La Sol Fa Mi Re Do —
 1 2 3 1 2+ 3 1+ 2+ 3

Elements of Music

- The elements of music are combined to make a piece complete.
- It is the way that the elements are combined that gives a song/piece from various styles and genres their distinctive sound.
- The following table gives ways in which the different elements may be described.

Elements	Definition	How it can be described
Melody	The organisation of the notes.	Ascending, descending, treble, bass, repetitive wide/small range, stepwise, based on a scale, based on a triad, has sequences.
Rhythm	The arrangement of the relative lengths and shortness's of notes.	Long, short syncopated, repetitive, accented, regular, irregular, dotted, even, polyrhythmic
Metre	The reoccurring patter of accents or stress in the music. This is indicated by a time signature	Simple, Compound, Complex, duple, triple, quadruple
Harmony	The use of chords – usually to support a melody	Small/large number of chords, repetitive pattern, 12 bar blues, ice cream progression
Structure/ Form	The plan of a piece	Through composed, Binary (A.B.) Ternary (A.B.A) Rondo (A.B.A.C.A) Theme and variations, Verse/chorus, strophic form, introduction, phrase, section, coda
Texture	Refers to how many layers or voices are in a piece	Monophonic – one part. Also applies to doubling parts at an octave. (Thin) Homophonic – many – notes moving as part of a chord. Polyphonic – many. Many parts moving and stopping independently of each other (thick)
Timbre	Each instrument/voice has its own distinctive tone colour	Warm, bright, dull, metal, brilliant,
Tempo/ speed	The speed of the music	Fast slow, moderate, changing, speeds up, slows down, rallentando, accelerando
Dynamics/ Volume	The loudness or softness of the music	From very, very, soft through to very, very, loud, crescendo, diminuendo
Performing Media	Who or what is performing the music	Stings, winds, brass, percussion, keyboards, electronic. Voices – male, female
Tonality/ Modality	Its tone/key centre	Major, minor, modal, atonal

STYLE in MUSIC and the ELEMENTS of MUSIC

MUSICAL ANALYSIS WORKSHEET

SONG TITLE: _____

STYLE: _____

Element	Description
PITCH/MELODY	
TONALITY	
FORM/STRUCTURE	
HARMONY	
DURATION/RHYTHM	
TEMPO	
DYNAMICS	
TIMBRE/TONE COLOR	
TEXTURE	
PERFORMANCE MEDIA	
METER	

Quick-Start Music Theory Guide

L. Escobar

Choir

This is the Music Staff

Key Signature: \sharp
Time Signature: $\frac{4}{4}$ — Four beats per measure
Quarter Note ♩ = 1 beat
ONE MEASURE
ONE MEASURE
Final Bar Line

Most Common Note Lengths

whole note: 1-2-3-4
half notes: 1-2, 3-4
quarter notes: 1, 2, 3, 4
eighth notes (can be connected, or individual): 1 + 2 + 3 + 4 +
"and"

Rests = silence

whole rest: 1-2-3-4
half rest: 1-2, 3-4
quarter rest: 1, 2, 3, 4
eighth rest: 1 + 2 + 3 + 4 +

Ties add the length of notes together.

Dots add half of the length to the note.

Ties connect notes across bar lines. Dotted notes have a dot above them, extending the note's duration by half.

Notes on Lines

Treble Clef OR G Clef
E G B D F

Notes in Spaces

F A C E

The higher a note is, the higher it is sung.

Bass Clef OR F Clef
G B D F A
A C E G

Ledger Lines: notes below the staff.
Accent = stronger attack: note with > above it.
Staccato = shorter length: note with a dot above it.

Dynamic = volume

p *mp* *mf* *f* *p* *f* *p*
piano = soft forte = loud
Crescendo = gradually increase volume Decrescendo = gradually decrease volume

Beginning Repeat Sign

Ending Repeat Sign

(go back to beginning repeat sign, then move on)

Different Time Signatures

$\frac{3}{4}$ Three beats per measure
 $\frac{4}{4}$ Quarter Note $\text{♩} = 1 \text{ beat}$

1 2 3 1-2 3 1 2 + 3 +

$\frac{2}{4}$ Two beats per measure
 $\frac{4}{4}$ Quarter Note $\text{♩} = 1 \text{ beat}$

1 2 1-2 1 2 +

$\frac{6}{8}$ Six beats per measure
 $\frac{8}{8}$ Eighth Note $\text{♩} = 1 \text{ beat}$

1 2 3 4 5 6 1-2 3 4-5-6 1-2-3-4-5-6

First Ending

1.

Second Ending

2.

fermata = hold note until cut off

Go back to repeat sign, then go to the second ending.

Bach, Fugue I, from The Well-Tempered Clavier I
(1685-1750) Textual Setting by Peter Kalkavage (Isaiah 32:1)

1

S

A

T

B

Be - hold a king shall reign in

2

S

A

T

B

right - eous - ness a king shall

Be - hold a

3

S

A

T

B

king shall reign in right - eous -

reign, shall reign, shall

4

- ness; a king shall reign a king shall
 reign, a king shall reign shall
 Be - hold a king shall reign in

5

reign in right - eous - ness, a king
 reign
 right - eous - ness, right - eous
 Be - hold a

6

a king shall reign.
 Be - hold, a king a king shall reign.
 - ness, a king, a king shall reign.

king shall reign in right - eous - ness.

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20 - 24, 2020

Course: Physical Education

Teacher(s): James.Bascom@GreatHeartsIrving.org

John.Bascom@GreatHeartsIrving.org

Joseph.Turner@GreatHeartsIrving.org

Weekly Plan:

Monday, April 20

General Mobility Routine

Tuesday, April 21

Workout

Wednesday, April 22

General Mobility Routine

Thursday, April 23

Workout

Friday, April 24

General Mobility Routine

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, April 20

General Mobility Routine (15-20 minutes)

Complete Parts I and II without stopping. Record your overall time and whether or not you completed each exercise.

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

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, April 21

Warmup:

1. 3 minute warmup jog
2. 10 jumping back, 5 squats, 1 pushup x3

Workout:

The workout today will focus on full body strength training. You are going to choose your own degree of intensity by choosing the tier that you perform. “Tier 1” will be the easiest option and “Tier 4” will be the hardest option.

5 Squats, 2 Pushups

Bear crawl forward 5 meters

3 Lunges per leg

Bear crawl back (backwards)

3 Burpees

Crab walk forward 5 meters

Hold a high plank for 15 seconds

Crab walk back (backwards)

Repeat for 10 minutes.

Tier 1: Perform as stated above.

For tier 2: multiply quantities by 2 (from 5 to 10 squats, from 2 to 4 pushups etc.). Crawl distances don't change at any tier.

For tier 3: multiply quantities by 3.

For tier 4: multiply quantities by 4.

Cool down with a 1 minute light jog.

Wednesday, April 22

Repeat *General Mobility Routine (15-20 minutes)*

Thursday, April 23

Workout: Choose Your Own Adventure Run (What fun!) - 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.

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 state - 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, April 24

Repeat *General Mobility Routine (15-20 minutes)*

Optional workout:

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

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 20 - 24, 2020

Course: Spanish I

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

Supplemental links: www.conjuguemos.com, www.spanishdict.com
www.lingt.com/barreratumble

Weekly Plan:

Monday, April 20

- Capítulo 4B Quieres ir conmigo? Using Vocabulary Talk about activities you would like to do.
- Capítulo 4B Quieres ir conmigo? Talk about what sports you know and don't know how to play.

Tuesday, April 21

- Capítulo 4B Quieres ir conmigo? Using Vocabulary. State an opinion or preference in writing.
- Capítulo 4B Quieres ir conmigo? Answering to a dialogue.

Wednesday, April 22

- Capítulo 4B Quieres ir conmigo? Use the verbs *querer* and *estar* to make plans with a partner.
- Capítulo 4B Quieres ir conmigo? Articulate requests in writing and offer alternatives.

Thursday, April 23

- Capítulo 4B Quieres ir conmigo? Use the verbs *querer* and *estar* to make plans with a partner.
- Capítulo 4B Quieres ir conmigo? Learn how to write a negative or positive response.

Friday, April 24

- Capítulo 4B Quieres ir conmigo? Respond in **writing** to questions about everyday life.
- Capítulo 4B Quieres ir conmigo? Using interrogatives and writing the time of the event.

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, April 20

Capítulo 4B Quieres ir conmigo? Using Vocabulary (*Vocabulario en uso*). Talk about activities you would like to do. Talk about what sports you know and don't know how to play.

Textbook, p. 202 - Activity 4 *Me gustaria ir...* This activity will involve speaking using the link I provided for you in the cover page (1st page). This activity is under Spanish I in link. Say whether or not you would like to do these things this weekend. Look at the five pics for your speaking activities. Use the *Modelo* as an example.

Tuesday, April 21

Capítulo 4B Quieres ir conmigo? Using Vocabulary (*Vocabulario en uso*). State an opinion or preference in writing. Answering to a dialogue. Please write your name and date for these two activities.

1. **Textbook, p. 202 - Activity 5** *No se jugar...* Write a complete sentence in a loose leaf paper, if you know how to play the six activities illustrated with pics in your book. Reference the *Modelo* as an example.

2. **Textbook, p. 203 - Activity 7** *Como estas?* You've asked your friends how they are doing. Now read each friend's reply and write the correct form of the missing word from the list. Please write the entire dialogue filling in the appropriate vocabulary for each number. Reference the word bank on the top right hand for your answers. Please choose either the female or masculine adjective according to who is speaking.

Wednesday, April 22

Capítulo 4B Quieres ir conmigo? Use the verbs *querer* and *estar* to make plans with a partner. Articulate requests in writing and offer alternatives. Please write your name and date for this activity.

1. **Textbook, p. 203 - Activity 8** *Lo siento*. You will not speak in this activity as stated in your instructions. It will be a writing assignment. You will play the role of both Student A and B. Student A, you will write a question asking student B if he or she wants to do this activity with you. Student B, write the response, he or she will make an excuse and explain why he or she can't go. Example, **Student A:** (Skating) Oye! Quieres patinar **conmigo esta tarde?** **Student B: Lo siento**, Hoy no puedo, **Estoy demasiado enfermo(a)**. Substitute your answers (highlighted in bold) with a variety of responses listed in your vocabulary page 218. You should have 10 sentences that include A and B responses.

Thursday, April 23

Capítulo 4B Quieres ir conmigo? Use the verbs *querer* and *estar* to make plans with a partner. Articulate requests in writing and offer alternatives. Please write your name and date this activity.

Read the three invitations to events and the responses given. On a loose leaf paper answer the questions in a complete sentence. **Reference the vocabulary on page 218.**

1. Puedes ir conmigo al baile esta noche? For this question you will say, “I am sorry, I have to work”! Now you will write that answer but in Spanish.
2. Te gustaría ir conmigo al partido esta tarde? Your answer but in Spanish, “What a good idea, I would like that very much.”
3. Voy a jugar al golf el domingo. Quieres jugar? Your answer but in Spanish, “What a shame, I have soccer practice that afternoon.”

Friday, April 24

Capítulo 4B Quieres ir conmigo? Respond in writing to questions about everyday life in a spoken conversation. Using interrogatives and writing the time of the event. Please write your name and date this activity.

1. **Textbook p. 204. Activity 10 - A que hora?** You will not speak in this activity as stated in your instructions. It will be a writing assignment. You will play the role of both Student A and B. Student A, you will ask at what time the event will occur. Reference the six pics and times next to each one. Student B, you will respond by stating what time this event will take place. For example, Ir a las películas. **Student A: A qué hora es la película? Student B: A las ocho de la noche.** (Please remember to put an upside down question mark in your interrogative sentence, I just couldn't figure out how to type it in.) You will have a total of 12 sentences for both Student A and B.