

Lesson 91: Geometric Formulas

Using your Saxon Math book, complete the chart. The information can be found on page 489 in your book.

Figure	Perimeter	Area
Square		
Rectangle		
Parallelogram		
Triangle		

Answer Practice Set questions a. and b. (page 491 in your math book for reference.)

- a Write the formula for the area of a rectangle. Then substitute 8 cm for the length and 5 cm for the width. Solve the equation to find the area of the rectangle.

- b Write the formula for the perimeter of a parallelogram. Then substitute 10 cm for the base and 6 cm for the side. Solve the equation to find the perimeter of the parallelogram.

Answer Mixed Practice questions 10 and 30 (pages 492 and 493 in your math book for reference.)

10. $P=2l + 2w$ is a formula for the perimeter of a rectangle. Find P when l is 5 ft and w is 3 ft.

30. Write the formula for the area of a parallelogram as given in this lesson. Then substitute 15 cm for the base and 4 cm for the height. Solve the equation to find the area of the parallelogram.

Lesson 92: Expanded Notation

Using your Saxon Math book (p. 494) complete the chart below.

Trillions			Billions			Millions			Thousands			Ones		
Hund.	Tens	Ones	Hund.	Tens	Ones	Hund.	Tens	Ones	Hund.	Tens	Ones	Hundreds	Tens	Ones

Practice Set (p. 496) a-b

- a. Write 2, 500, 000 in expanded notation using exponents.

- b Write this number in standard notation: $(5 \times 10^9) + (2 \times 10^8)$

Lesson 92: PEMDAS

P =

E =

M =

D =

A =

S =

Complete c. and g. for the Practice Set (p. 496)

c.

g.

Complete 6 and 11 from the Mixed Practice (p. 497)

6.

11.

Lesson 92: Powers of Fractions

Review Example #3 on page 496.

Complete Practice Set d-f (p. 496)

Complete Mixed Practice 1-30 (attached grid paper)

Practice Set:

d.

e.

f.

Lesson 93: Classifying Triangles

Review charts on pages 499 and 500.

Answer Practice Set a-e (p. 500)

a.

b.

c.

d.

e.

Answer Mixed Practice 1-30 (p. 500-502) on graph paper

Julius Caesar Introduction Packet

Elizabethan theatre & kinds of plays reading pages 1-2

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Shakespearean Language pages 4-5

Main Character List page 6

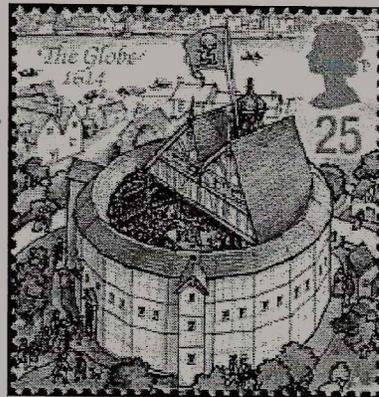
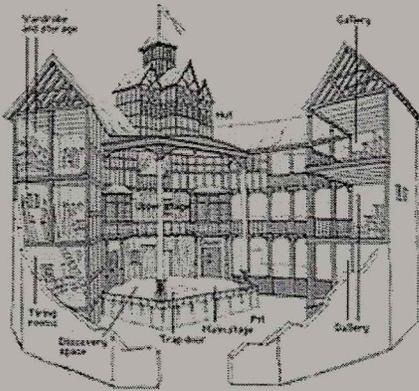
Character Web page 7

Elizabethan Theatre

Until the mid-16th century, most plays were performed outside London. Craftsmen or tradespeople put on traditional plays in town squares and on village greens. As it grew in size and importance, though, London became the centre of English theatre. In Shakespeare's lifetime, theatre became hugely popular. At first it was not considered a very respectable pastime, and most of the theatres were in the rougher parts of town.

The first theatre in London was called The Theatre. It was built in 1576 in north London. In 1587, the Rose Theatre was built south of the Thames, among the prisons, in an area called Bankside. In 1595, the huge Swan Theatre was built and said to hold up to 3,000 people. All three of those theatres were built *outside* of city limits, so they were free from the restrictions of City regulations. During that same time Queen Elizabeth I loved to watch plays herself. So oftentimes she would hold performances of plays at her court.

From 1599 onwards, Shakespeare's plays were usually performed at the Globe Theatre, a huge, open-air circular theatre in Southwark in London. In London, plays were put on by theatre companies (groups of professional actors). By law, a company had to have a patron, a rich friend who would support it financially. Theatre companies were named after their patrons. For example, the company supported by the Earl of Leicester was called Leicester's Men. Shakespeare spent much of his career with a company called the Lord Chamberlain's Men. When James I became King, in 1603, he wanted to be a patron, and he started supporting the Chamberlain's Men. From then on, they were called King's Men.



Kinds of Plays

During Shakespeare's lifetime, drama developed faster than ever before. In London, playgoing became a large-scale business. With some theatres holding two or three thousand people, there were huge profits to be made, and new material was always needed. Drama was not seen as "literature", but merely as popular entertainment, in the same way as Hollywood films or television sitcoms and soap operas are now.

During Shakespeare's career, fashions and tastes in drama changed. Shakespeare himself wrote mostly comedies and history plays during the Elizabethan period (1558-1603), and tragedies and tragicomedies during the reign of King James (1603-1625).

There are five kinds of plays Shakespeare used listed on the next page.

*FIVE KINDS of PLAYS

Tragedy – ends in death of one or more of the main characters. In a revenge tragedy such as *Titus Andronicus*, one murder sets off a chain of revenge killings. Most of Shakespeare's tragedies involved historical individuals and events.



Comedy – usually has a happy ending, and can also include jokes, farce, and innuendo. Shakespeare's comedies are usually love stories, set far away from England.



Tragicomedy – is a mixture of comedy and tragedy. The play seems to move towards a tragic ending, but a twist in the plots saves the characters. Shakespeare's romance plays, such as *The Winter's Tale*, are examples of tragicomedy.



History plays – usually tell the stories of great leaders and kings. In his history plays, Shakespeare sometimes altered what he found in the history books to suit his own dramatic purposes and make the plays more exciting.

Satirical comedies, such as *The Alchemist* by Ben Jonson, attack ideas or individuals by laughing at them. They are similar to comedies, but have a more cynical tone.

The Roman Tragedies – *Julius Caesar*, *Antony and Cleopatra*, and *Coriolanus*

All of the 3 plays above deal with political power. Their heroes are state leaders who have a responsibility to the people. Often, tragedy results when they fail to meet their responsibilities. However, those plays are not just about politics. They are full of personal emotions, dramatic power struggles, and brilliant writing, including some of the most famous speeches in Shakespeare's plays.

The power of rhetoric –

In Shakespeare's political plays, rhetoric (persuasive language) is very important. The characters use it to attack those in power, or to win the support of the mob (the common people of the city), which can be the key to achieving and holding onto power. A good speech is shown to be as influential as a great battle.

Shakespeare's Players

Shakespeare is thought to have joined the theatre as an actor, or "player", and become a writer *later*. It was normal for actors to help write plays, or to change them a lot during rehearsals. Shakespeare probably started gradually writing more and more and acting less.

Julius Caesar – Important Terms and Definitions

- 1. Historical Setting** – While not all segments of the population had the vote, the Roman Republic was a representative form of government.
 - Voting was the right of the aristocratic senators, and their favorite was Pompey
 - Caesar, who seemed to have the support of the common people, fought with and defeated first Pompey and then Pompey's son
 - Caesar returned to Rome and appeared to be on the verge of being declared King. Many of the aristocratic senators did not like this development and this is where the play begins.
- 2. Monarchy** – the Divine Right of Kings, and the need for stability and order in Elizabethan England – In the time of Queen Elizabeth I, the Elizabethans were used to a strong, benevolent monarch. Such a ruler pleased them because only a strong monarch could keep the peace and prevent civil war. In fact, the killing of a legitimate king not only plunged the country into civil war and chaos, but also violated God's law. The people of the time believed that Kings and a Divine Right to Rule; that is, that the Kings' received their right to rule from God. Killing a King violated not only civil law but also God's law, i.e – natural law.
- 3. Omens and Portents** – Things or events regarded as signs of future good or bad luck
 - These elements play a large role in *Julius Caesar*
 - Romans were a superstitious people who believed that future events could be seen in dreams, the stars, the entrails of animals, and unnatural occurrences.
- 4. Tragedy** – a serious play in which the ruin of the main character, the tragic hero, is inevitable
- 5. Tragic hero** – an admirable figure who, because of one character flaw, falls from a high place and ends up dying by his own hand or by the hand of others
- 6. Fate** – The invisible force or power that is supposed to determine the course of events in human lives.
- 7. Tribunes** – government officials whose job was to be a protector of the people
- 8. Asides** – Lines spoken to another character or oneself that are heard from the audience, but not by the other characters on stage.
- 9. Soliloquies** – lengthy speeches by one character, usually alone on stage, which reveal his or her inner thoughts. The character is, so to speak, thinking aloud. None of the other people in the play can hear the soliloquies.
- 10. Humors** – The particular moods or personality types which medieval medicine believed were caused by body fluids (e.g. blood) within each person.

Mastering Shakespearean Language

You can figure out much of Shakespearean language from the context.

“Translate” the following words or phrases, as used in the examples below each one, into modern English.

1. an = _____
An there be more fighting, the prince will be furious with us.

2. aye = _____
Aye, my lord, I will do as thou asketh.

3. o' = _____
Dawn is the best hour o' the morn. Then, a plague o' both your houses!

4. wherefore = _____ thou art = _____
Wherefore art thou so sad?

5. thou shalt = _____ thy/thine = _____
I fear thou shalt fail; I see it in thy posture and in thine eyes.

6. thou dost = _____ thou wilt = _____
An thou dost not try, thou wilt surely fail.

7. hath = _____ hast = _____ thee = _____
Hast thou no pride? He hath forsaken thee!

8. coz = _____ ye = _____
Good morrow, coz! Hast ye the time?

9. ere = _____
I must be gone, ere I am discovered.

10. e'er, ne'er = _____
I shall love thee for e'er, and ne'er shall I forsake thee.

11. soft = _____
But, soft! What light through yonder window breaks?

12. anon = _____
I shall be there anon.

13. I'll to = _____
You stay here. I'll to Friar Laurence's cell, where . . .

14. canst = _____ o'er = _____
Canst thou leap o'er the moon?

15. whereto = _____
This is the throne whereto I owe my loyalty.

16. fortnight = _____
I shall be gone only a fortnight.

17. whither = _____ thither = _____ hither = _____
We searched hither and thither, and finally he asked us whither we could get help.

18. marry = _____
Marry, I will not help such foolishness.

19. mine = _____
Zounds! All unknown to me, I have been feasting with mine enemy!

Main Character List

Julius Caesar

By William Shakespeare

Brutus – supporter of the republic; friend of Caesar

Julius Caesar – a great, successful Roman general and senator; dictator of Rome

Marcus Antonius (Antony) – friend of Caesar; triumvir after Caesar's death

Lepidus – the third member of Antony and Octavius' coalition ("triumvirs") after the death of Julius Caesar

Octavius – adopted son of Julius Caesar; his nephew; triumvir after Caesar's death

Cassius – general; conspirator against Caesar

Cinna - conspirator against Caesar

Casca – conspirator against Caesar

Calpurnia – Caesar's wife

Portia – Brutus' wife; daughter of a noble Roman who took sides against Caesar

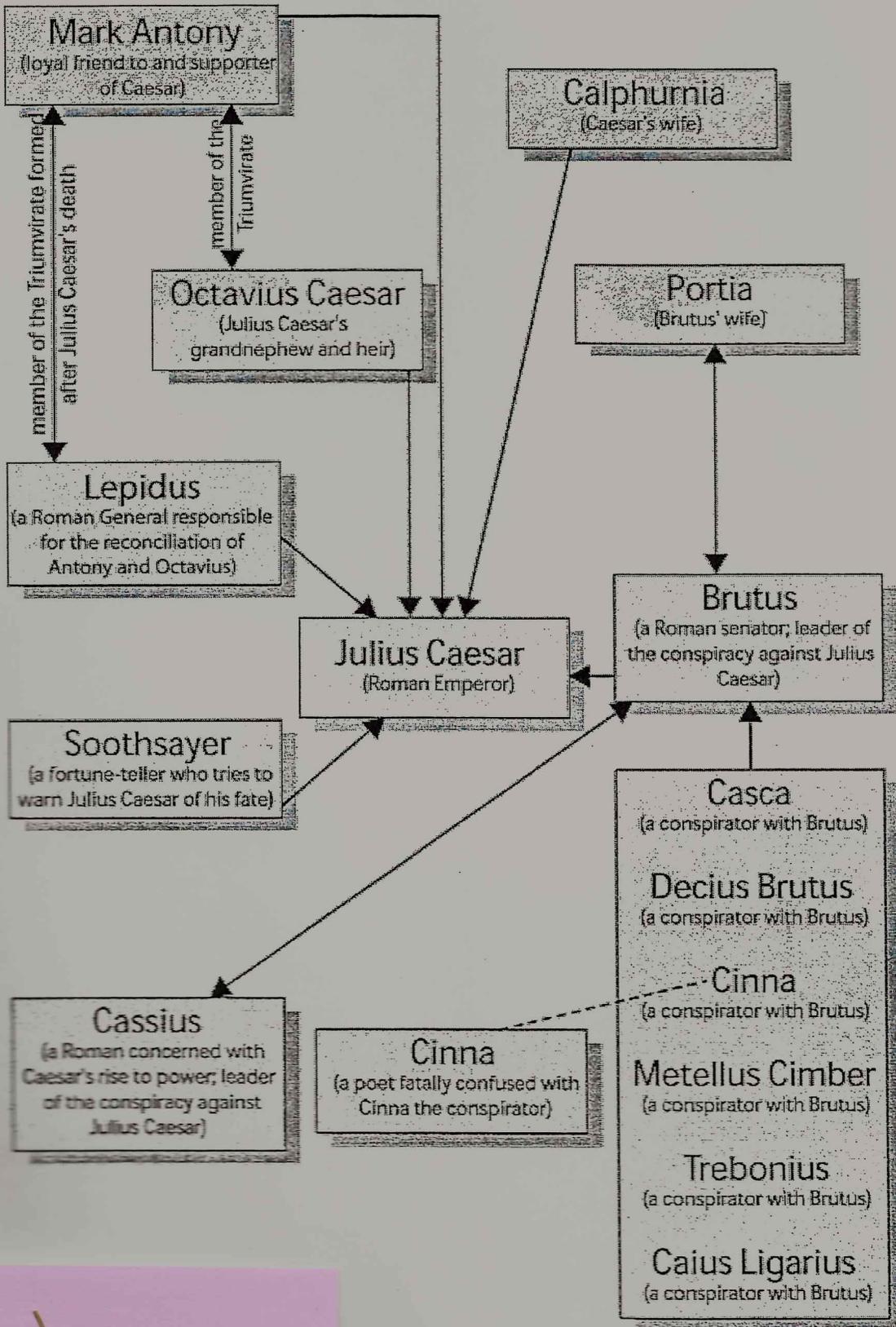
Flavius – a tribune (an official elected by the people to protect their rights)

Marullus – a tribune (like Flavius)

Cicero – A Roman senator well known for his oratorical skill.

Decius Brutus – a member of the conspiracy

**Pompey – *Roman general who tried to stop Caesar's rise to power*



Julius Caesar
Act I, Scene I

Which characters appear in this scene?

Where does this scene take place?

What is the overall tone for this scene?

What is a homonym

- A **HOMONYM** is a word that has the same pronunciation or spelling (or both) as another word, but a **different** meaning

Homonyms can be broken into two categories:

Homophones – words that are pronounced the same (and may or may not be spelled the same), but differ in meaning, such as *waste* and *waist*.

Homographs – words that are spelled the same (and may or may not be pronounced the same), but differ in meaning, such as *desert* (abandon) and *desert* (arid region).

These words will not be detected by spell check so it is very important not to be confused.

- Examples:

- **accept:** to accept is to receive, admit or take on responsibility
I accept responsibility for the car accident.
- **except:** usually a preposition meaning other than or a conjunction meaning if it weren't for the fact that
I have every card except the ace of spades.

- **affect:** usually a verb meaning to have an influence on, to bring about a change
Eating too much can affect your weight.
- **effect:** usually a noun meaning result
The effect of the frost will be higher fruit prices.

- **advice:** a noun meaning an opinion about an action
The pediatrician gave advice on how to bathe infants.
- **advise:** a verb meaning to offer advice or recommend
I would advise you not to speed at night.

- **forth:** an adverb meaning forward in time, place or order
We went forth with our plans to move.
- **fourth:** follows third
I was fourth in line.

- **its:** shows possession, answers the question, "Whose?"
Its gas tank was empty.
- **it's:** contraction of it is
It's the third Sunday of the month.

- **there:** (1) indicates direction: *The dog is over there.*
(2) subject: *There are five cookies left.*
- **their:** shows possession: *That is their new home.*
- **they're:** contraction of they are: *They're going to be late.*

- **there:** (1) indicates direction: *The dog is over there.*
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- **their:** shows possession: *That is their new home.*
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What are Homographs?

Name: _____



Homographs are easy to remember if you think of your Greek roots. **Homo** means "same." **Graph** means "write." So homographs are literally two words that are written exactly the same way, but have different meanings and sometimes different pronunciations. One example of this is the word **bow**. You'd need to hear the word out loud or see it written in a sentence to know whether we were talking about a ribbon or a polite gesture.

Write the homograph that completes both sentences.

1. Tie a _____ to finish wrapping the present.
Take a _____ when you finish your performance.
2. All the girls started screaming when a _____ flew into their camp cabin.
The softball team gave their star player a new _____ for her birthday.
3. I hoped my best friend would sit in my _____ at school.
We had to _____ the boat all the way across the lake to get home.
4. Since my books were late, the librarian told me to pay a _____.
Gabriel was sick yesterday, but today he's feeling _____.
5. When Allan fell off of his bike, he got a bad _____ on his leg.
Lisa _____ up the duck toy and let it waddle down the hallway.
6. Mom said I could improve my sculpture by _____ out the bumps.
My father doesn't get home from work until late in the _____.
7. In science I learned that my stomach expands and _____ as I eat.
My class had to sign behavior _____ as a promise to behave.
8. When they asked who would go first, I volunteered to _____ the way.
I had to find a regular pencil because mine was out of _____.
9. I was happy to learn that though I didn't win, I got _____ place.
I asked my mom to give me one more _____ to get ready for school.
10. My dog really did try to _____ up my homework last night!
My sister said she wasn't crying, but there was a _____ on her cheek.

What are Homographs?

Homographs are easy to remember if you think of your Greek roots. **Homo** means "same." **Graph** means "write." So homographs are literally two words that are written exactly the same way, but have different meanings and sometimes different pronunciations. One example of this is the word **bow**. You'd need to hear the word out loud or see it written in a sentence to know whether we were talking about a ribbon or a polite gesture.



Write the homograph that completes both sentences.

1. Tie a bow to finish wrapping the present.
Take a bow when you finish your performance.
2. All the girls started screaming when a bat flew into their camp cabin.
The softball team gave their star player a new bat for her birthday.
3. I hoped my best friend would sit in my row at school.
We had to row the boat all the way across the lake to get home.
4. Since my books were late, the librarian told me to pay a fine.
Gabriel was sick yesterday, but today he's feeling fine.
5. When Allan fell off of his bike, he got a bad wound on his leg.
Lisa wound up the duck toy and let it waddle down the hallway.
6. Mom said I could improve my sculpture by evening out the bumps.
My father doesn't get home from work until late in the evening.
7. In science I learned that my stomach expands and contracts as I eat.
My class had to sign behavior contracts as a promise to behave.
8. When they asked who would go first, I volunteered to lead the way.
I had to find a regular pencil because mine was out of lead.
9. I was happy to learn that though I didn't win, I got second place.
I asked my mom to give me one more second to get ready for school.
10. My dog really did try to tear up my homework last night!
My sister said she wasn't crying, but there was a tear on her cheek.

Name: _____

Subject: Year 6 English

Date: _____

Sheet: Which homonym?

Which Homonym?



Choose the correct spelling to complete each sentence.

- A _____ can breathe through its skin. toad/towed
- Bread is made from _____. flower/flour
- A thick _____ covered the countryside. mist/missed
- He got on his bike and _____ away. road/rode
- There were a lot of _____ in the waiting room. patients/patience
- The _____ slept on a bed of leaves. dear/deer
- They climbed _____ up the mountain. hire/higher
- I _____ my mum coming down the stairs. heard/herd
- She painted the room _____ yellow. pail/pale
- This type of cat has no _____. tale/tail
- Tom _____ the egg and spoon race. won/one
- It's rude to _____ at people. stair/stare
- She _____ a beautiful dress. war/wore
- The _____ is becoming cooler. weather/whether
- Can you untie this _____? not/knot



Homonym Fun



Instructions: The clues on this worksheet will give you a hint about two different words that sound the same but have different meanings. See if you can think of the words!

1. A number that looks like a vertical infinity symbol, or what your friend just did to your cookie. _____

2. What you call your dad's sister, or a preliminary bet when you're playing poker.

3. The way a sailor or pirate says "yes," or the hole in a needle.

4. A slang term for your best friend, or type of water found in nature ocean or lake. _____

5. To cry very hard, or a round toy.

6. A group of musicians that play together, or a book that some people don't want others to read. _____

7. To tolerate someone or something, or a furry animal that lives in the woods.

8. The bottom support for something, or the lowest notes in a song.



Name: _____ Teacher: _____ Total: _____/20

HOMONYMS QUIZ

Choose and write the correct word to complete each sentence

1. The _____ and the frog walked together through the wood. toad/towed
2. The _____ covered the tops of the mountains. mist/missed
3. Dr. Doolittle accepted only _____ that could fly. patients/patience
4. Bambi lost his mother during a _____ hunt. dear/deer
5. In order to get a _____ score on the test, a student must study. hire/higher
6. He was so frightened, his face turned _____. pail/pale
7. The 4L scholar _____ the National Spelling Bee contest. won/one
8. Last year, 1L scholars _____ navy fleeces. war/wore
9. I like to tie my shoes in one _____. not/knot
10. A cookie recipe required eggs, sugar and _____. flower/flour
11. We _____ a bus to visit the Bakken Museum. road/rode
12. Jack _____ a kitten meow outside his bedroom window. heard/herd
13. The raja's peacock spread open its beautiful _____. tale/tail
14. He likes to _____ at himself in the mirror every morning. stare/stair
15. This _____ is uncommonly warm for March. weather/whether
16. Little Red Riding Hood was brining food to her _____ grandma. deer/dear
17. The earth was shaking as a _____ of elephants ran for water. herd/heard
18. The teacher was running out of _____ at recess. patients/patience

Write a sentence in *cursive* using a homonym word in two different meanings. **2pts**

For example: Bambi was a deer who cried after his dear mother's death.

Photosynthesis and Light

Learning Preview

Concepts

What happens when light strikes a green leaf? How do scientists summarize the process of photosynthesis?

Terms

transmission • reflection
absorption • accessory pigment

Get Reading Skill

Previewing Visuals Preview Figure 9. Then write two questions you have about the diagram in the graphic organizer like the one shown. As you read, answer your questions.

Photosynthesis Process

What light is involved in photosynthesis?

Lab zone Discover Activity

What Colors Make Up Sunlight?

1. Glue a piece of white paper onto the inside bottom of a shoe box.
2. Place the box on its side near a window or outside in a sunny area.
3. Hold a mirror in front of the open side of the box. Adjust the mirror until it reflects sunlight onto the paper in the box. **CAUTION: Do not direct the sunlight into your eyes.**
4. Place a prism between the mirror and the box. Adjust the location of the prism so that sunlight passes through the prism.
5. Describe what you see on the paper in the box.

Think It Over

Observing What did you learn about light from this activity?



The year was 1883. T. W. Engelmann, a German biologist, was at work in his laboratory. He peered into the microscope at some algae on a slide. The microscope had a prism located between the light source and the algae. As Engelmann watched the algae, he saw gas bubbles forming in the water around some of the cells. Curiously, no gas bubbles formed around other cells. Although Engelmann did not know it at the time, his experiment provided a clue about how light is involved in photosynthesis. To understand what Engelmann observed, you need to know more about the nature of light.



FIGURE 7

The Visible Spectrum

When white light passes through a prism, you can see that it is made up of the colors of the rainbow.



FIGURE 8

When Light Strikes Objects When white light strikes the lemon and the leaf, different colors of light are reflected by the two objects. Because of the reflected light, we see the lemon as yellow and the leaf as green. **Inferring** What happens to the colors of light that are not reflected off the lemon and the leaf?

The Nature of Light

The sun is the source of energy on Earth. If you take a walk outside on a sunny day, you feel the sun's energy as it warms your skin. You see the energy in the form of light on objects around you. The light that you see is called white light. But when white light passes through a prism like the one in Figure 7, you can see that it is made up of the colors of the rainbow. Scientists refer to these colors—red, orange, yellow, green, blue, and violet—as the visible spectrum.

When Light Strikes Objects In addition to prisms, white light strikes many other objects. Some objects such as glass and other transparent materials allow light to pass through them. This process is called **transmission**. When light hits a shiny surface such as a mirror, the light bounces back. This process is called **reflection**. When dark objects, such as street pavements, take in light, it is called **absorption**.

Most objects, however, reflect some colors of the visible spectrum while they absorb other colors. When white light strikes the lemon in Figure 8, the lemon absorbs most of the light's colors. However, the lemon reflects yellow light. The lemon looks yellow because your eyes see the reflected color.

Plants and Light Like yellow lemons and most other objects, plants absorb some colors of the visible spectrum and reflect others. **When light strikes the green leaves of a plant, most of the green part of the spectrum is reflected. Most of the other colors of light are absorbed.**

Plant Pigments When light strikes a leaf, it is absorbed by pigments found in the leaf's cells. Chlorophyll, the most abundant pigment in leaves, absorbs most of the blue and red light. Most of the green light, on the other hand, is reflected rather than absorbed. This explains why chlorophyll appears green in color, and why leaves usually appear green.

Other pigments, called **accessory pigments**, are also found in leaves. These pigments, which include orange and yellow pigments, absorb different colors of light than chlorophyll does. Most accessory pigments are not visible in plants because they are masked by chlorophyll.



What is the most abundant pigment in leaves?

Science and History

Unraveling the Mysteries of Photosynthesis

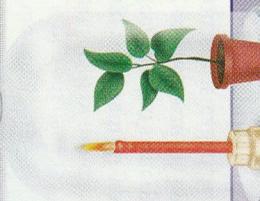
What do plants need to make their own food? What substances do plants produce in the process of photosynthesis? Over time, the work of many scientists has provided answers to these questions.

22

1771

Joseph Priestley

When Joseph Priestley, an English scientist, placed a burning candle in a covered jar, the flame went out. When he placed both a plant and a candle in a covered jar, the candle kept burning. Priestley concluded that the plant released something into the air that kept the candle burning. Today, we know that plants produce oxygen, a product of photosynthesis.



1779

Jan Ingenhousz

Jan Ingenhousz, a Dutch scientist, placed branches with leaves in water. In sunlight, the leaves produced oxygen bubbles. In the dark, the leaves produced no oxygen. Ingenhousz concluded that plants need sunlight to produce oxygen, a product of photosynthesis.



1643

Jean-Baptiste Van Helmont

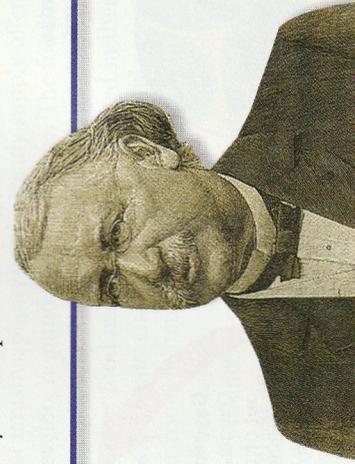
A Dutch scientist, Jean-Baptiste Van Helmont, planted a willow tree in a tub of soil. After five years of adding only water, the tree gained 74 kilograms. Van Helmont concluded that trees need only water to grow. Today, we know that water is one of the raw materials of photosynthesis.



The Photosynthesis Process

When light strikes a plant's leaves, it sets in motion the process known as photosynthesis. You can think of photosynthesis as a two-part process. First, the plant captures energy from the sun. Then, it uses that energy to produce food.

Capturing Energy Because light is one form of energy, a substance that absorbs light absorbs energy. Just as a car requires the energy in gasoline to move, plants require energy in the form of light to power photosynthesis. Photosynthesis begins when light strikes the chlorophyll in a plant's chloroplasts. The light energy that is absorbed powers the next stage of the photosynthesis process.



1883

T. W. Engelmann

Building on the work of Jan Ingenhousz, T. W. Engelmann studied how different colors of light affect photosynthesis in green algae. He found that cells bathed in blue and red light had the fastest rates of photosynthesis. Today, scientists know that the chlorophyll in green algae and plants absorbs mostly blue and red light.

1864

Julius Sachs

A German biologist, Julius Sachs, observed living leaf cells under a microscope. As he watched, he tested the cells for the presence of carbohydrates. Sachs discovered that plants produce carbohydrates during photosynthesis.

1650

1700

1750

1850

1900

1950

Writing in Science

Research and Write Find out more about one of the scientists discussed in this timeline. Write a dialogue you might have had with the scientist. Discuss how the scientist's work contributed to our current understanding of photosynthesis.

1948

Melvin Calvin

The American scientist Melvin Calvin traced the chemical path that the carbon from carbon dioxide follows during photosynthesis. By doing this, Calvin learned about the complex chemical reactions of photosynthesis.



The Chemistry of Photosynthesis Light energy is just one of the things that plants need to carry out photosynthesis. Just as you need flour and eggs to make cookies, a plant also needs raw materials to make its own food. Plants use carbon dioxide gas and water as raw materials for photosynthesis.

During this stage of photosynthesis, plants use the energy absorbed by chlorophyll to power a series of complex chemical reactions. In these reactions, carbon dioxide from the air and water from the soil combine to produce sugar, a type of carbohydrate. Another product, oxygen gas, is also produced. The events of photosynthesis are pictured in Figure 9.

Go online
active art

For: The Photosynthesis Process activity

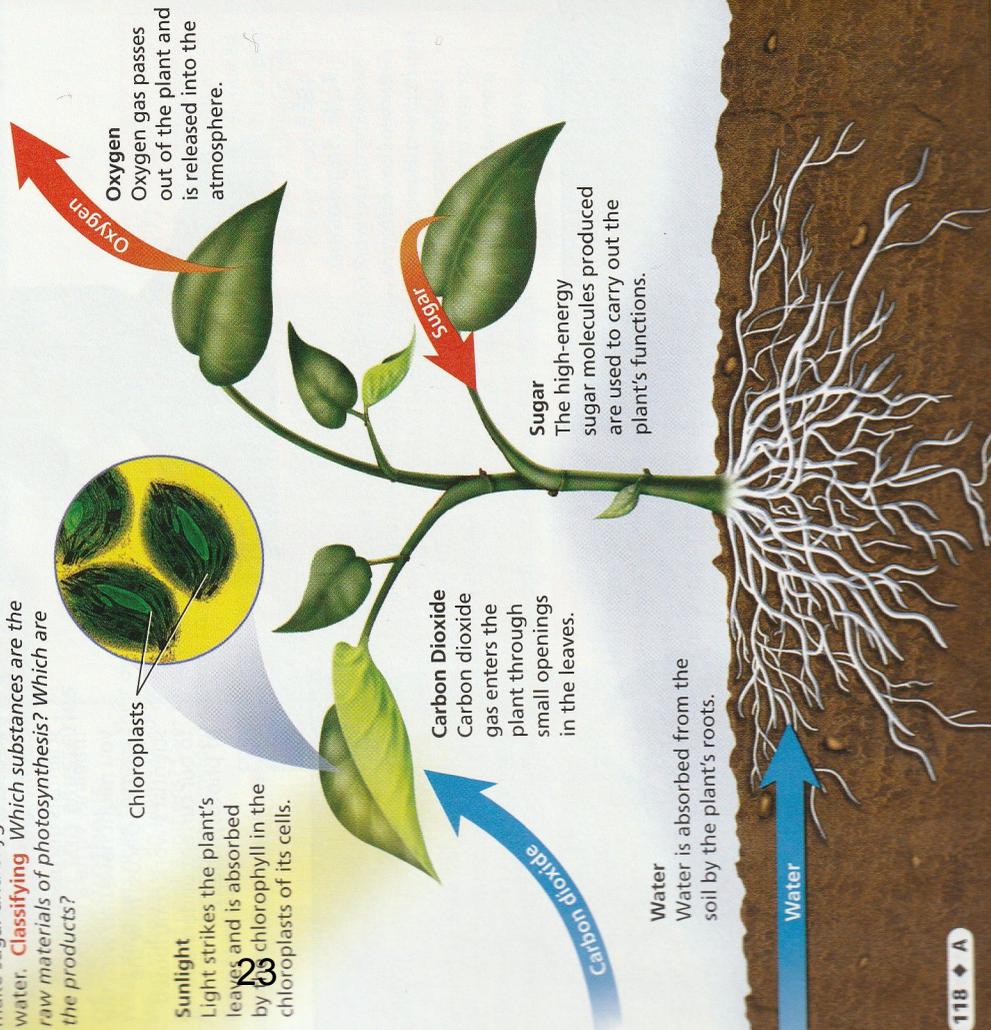
Visit: PHSchool.com

Web Code: cep-1042

FIGURE 9

The Photosynthesis Process

In photosynthesis, the energy in sunlight is used to make sugar and oxygen from carbon dioxide and water. **Classifying** Which substances are the raw materials of photosynthesis? Which are the products?



The Photosynthesis Equation Scientists write equations to describe chemical reactions. A chemical equation shows raw materials and products. The many chemical reactions of photosynthesis can be summarized by this equation:



You can read this equation as, “carbon dioxide and water combine in the presence of light to produce sugar and oxygen.” Photosynthesis takes place in the parts of a plant that contain chlorophyll.

Like all organisms, plants need a steady supply of energy to grow and develop, respond, and reproduce. The food made by plants during photosynthesis supplies energy for these processes. Any excess food made by plants is stored in their roots, stems, leaves, or fruits. Carrot plants, for example, store excess food in their roots. When you eat a carrot, you are eating the plant’s stored food.

The other product of photosynthesis is oxygen. Most of the oxygen produced during photosynthesis passes out of the plant and into the air. It can then be used by other organisms for their body processes.



What are the products of photosynthesis?

Section 2 Assessment



Target Reading Skill Previewing Visuals

Refer to your questions and answers about photosynthesis to help you answer Question 2.

Reviewing Key Concepts

- Listing** What are three things that might happen to light when it strikes an object?
 - Relating Cause and Effect** What happens when light strikes a green leaf? How does this explain why leaves appear green?
 - Predicting** Predict whether a plant would grow better when exposed to green light or to blue light. Explain.
- Reviewing** What is the overall equation for photosynthesis?
 - Summarizing** In a sentence, summarize what happens during each of the two stages of photosynthesis.

- Applying Concepts** Explain how each of the conditions could affect photosynthesis in a plant: (a) cloudy weather, (b) drought, (c) bright sunlight.

Lab zone

At-Home Activity

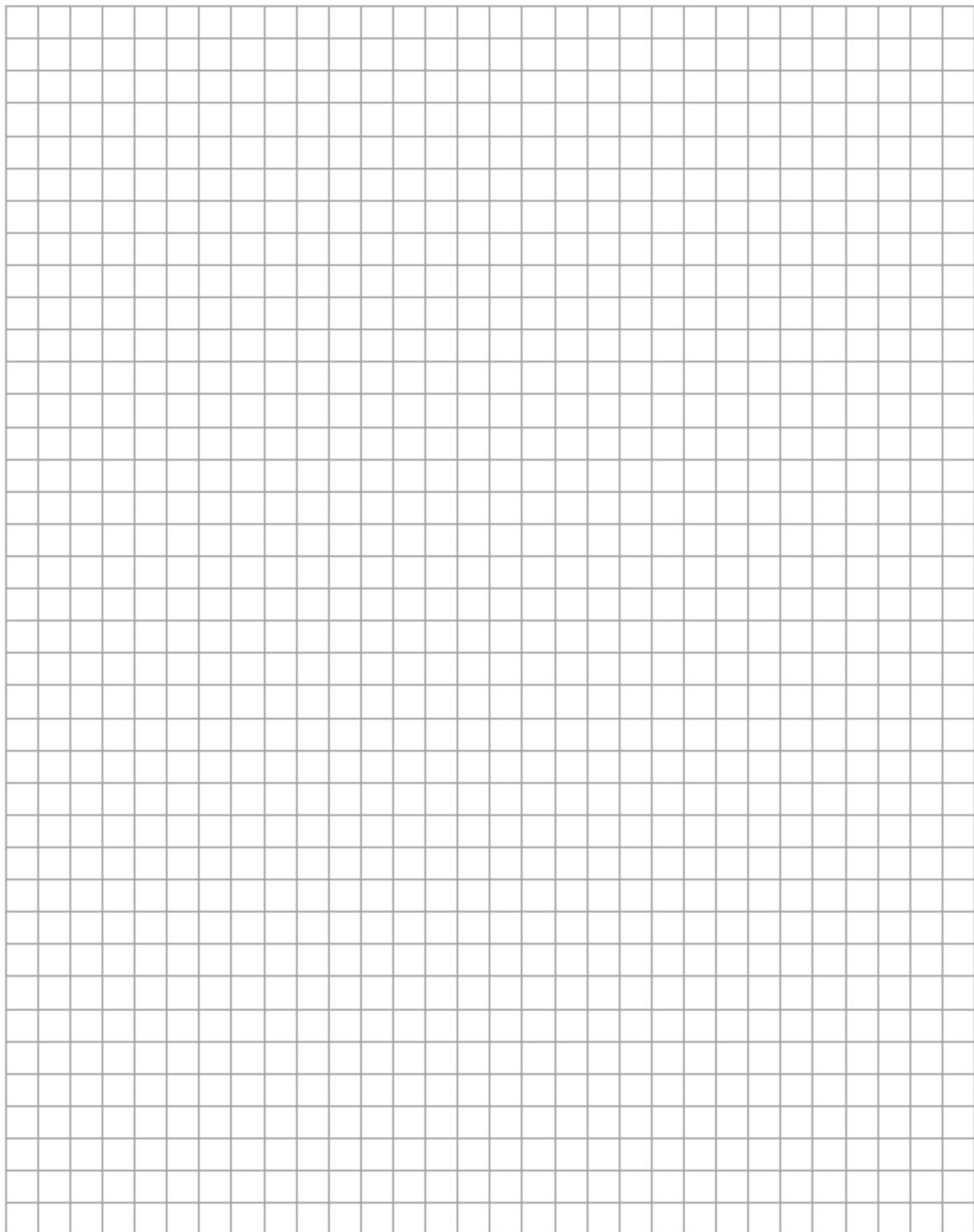
Reflecting on Light With a family member, look around your kitchen for objects that transmit, reflect, and absorb white light. Explain to your family member what happens to white light when it strikes each object. Then, choose one of the objects and explain why you see it as the color you do.



FIGURE 10

Food Made by Plants

You can enjoy the results of photosynthesis in a salad. When you eat cucumbers, tomatoes, and other plant products, you are eating food made and stored by plants.



Name: _____

Reading 67 – Constantine I and the Fall of Rome

Constantine accepted Christianity

P. 1 Civil war _____

P. 2 Constantine attributed _____

P. 3 In A.D. 313 _____

Edict of Milan _____

Constantine founded a new capital.

P. 1 In A.D. 330 he moved _____

P. 2 Byzantium's four advantages _____

P. 3 New name _____

Barbarians overran the empire.

P. 1 Third phase of decline _____

8 Germanic language groups _____

P. 2 Germanic groups hated each other & Rome _____

P. 3 Danube River marked _____

P. 4 Germanic tribes feared _____

P. 5 Pressure from Huns attack _____

This massive movement of Germanic peoples _____

In A.D. 378 _____

P. 6 In A.D. 406 Vandals _____

15,000 Vandals raided _____

Barbarians sacked Rome.

P. 2 In 410 Alaric, king of the Visigoths, _____

P. 3 In 455 Gaiseric, king of the Vandals, _____

Attila the Hun

P. 2 With 100,000 soldiers Attila _____

In A.D. 452 Attila _____

P. 3 Pope Leo I _____

The last emperor of the west

P. 2 Last Roman emperor _____

Odoacer _____

P. 3 Eastern half _____

P. 4 Latin and Christian Church _____

Constantine accepted Christianity.

8.1 Civil war broke out immediately after Diocletian retired. By A.D. 311, four rivals were competing for power. Among them was a dashing young commander named Constantine. One of the most critical moments in history occurred in A.D. 312 when Constantine marched to the Tiber River to fight his chief rival, Maxentius (mak-SĒN-shee-uhs). On the day before the battle, Constantine prayed for divine help. What happened next was reported by a Christian bishop, Eusebius (yoo-SEE-bee-uhs):

And while [Constantine] was thus praying, a most marvelous sign appeared to him from heaven. He said that about noon he saw with his own eyes a cross of light in the heavens, above the sun, and bearing the inscription, "In this sign, conquer."

8.2 The next morning, Constantine ordered artisans to put a Christian symbol on his soldiers' shields. Then came the clash between the armies of Constantine and Maxentius. Near the Milvian Bridge, two miles outside Rome, Constantine scored an overwhelming victory. He marched into Rome and became emperor of the western half of the empire. He attributed his victory to the power of the Christian God.

8.3 The next year, A.D. 313, Constantine announced an end to the persecution of Christians. From Milan, he granted "both to the Christians and to all men freedom to follow the religion that they choose." By this famous Edict of Milan, Constantine changed Christianity from an outlawed sect into a religion approved by the emperor.

Constantine founded a new capital.

8.1 Eventually, Constantine won control of the eastern as well as the western empire. In A.D. 330, he took the momentous step of moving the empire's capital from Rome to the Greek city of Byzantium (bih-ZANT-ee-uhm) in what is now Turkey.

8.2 The new capital had four advantages over Rome. First, it stood at a crossroad for trade. Located on a narrow water passageway called the Bosphorus (BAHS-puhr-uhs), Byzantium controlled all shipping between the Black Sea and the Mediterranean Sea. The city also dominated

the east-west overland trade between Asia Minor and Greece. Second, the city was easy to defend against attack, as it was nearly surrounded by water. Third, the old Rome was a pagan city dedicated to pagan gods. Byzantium was strongly Christian. Finally, Byzantium had the advantage of being in the more prosperous half of the empire, the east.

8.3 Thus, the center of empire shifted from west to east. Soon the new capital was protected by massive walls and gleamed with stately buildings. The city even had a new name—Constantinople (KAHN-STANT-uhn-oh-puhl), city of Constantine.

8.4 Because of the policies of Diocletian and Constantine, there were now two empires, not one. Because of Constantine's victory at the Milvian Bridge, both empires were Christian.

Barbarians overran the empire.

8.1 The third phase of Rome's decline was a century of destruction beginning in A.D. 376 and ending in 476. Many different groups took part in Rome's destruction: Ostrogoths, Visigoths, Franks, Angles, Saxons, Burgundians, Lombards, Vandals. All these groups were semibarbaric peoples who spoke Germanic languages.

8.2 Germanic men wore their hair down to their shoulders. They loved to gamble, drink, and fight. They assigned most of the drudgery of farmwork to their sisters, wives, and mothers. The historian Tacitus said they had "blue eyes and reddish hair, great bodies, especially powerful for attack, but not equally patient of hard work." Though the different Germanic groups shared similar ways of life, they hated one another and were frequently at war. Rome often took advantage of this hatred.

8.3 When Rome was still strong, the Germanic tribes generally respected the borders guarded by Roman legions. These borders stretched across Europe from the Black Sea to the North Sea. The longest section of the Roman border followed the Danube River. For many years, the Danube marked the dividing line between the barbaric north and the civilized south.

8.4 Though fearless fighters, the Germanic tribes were terrified of the Huns, a nomadic people from central Asia.

P.5 When the Huns began to move west, they first attacked the Ostrogoths, the most easterly Germanic tribe. The terrified Ostrogoths fled westward and pressed against their old enemies, the Visigoths. Squeezed off their land, the Visigoths looked for a new home south of the Danube border. Thus began the massive movement of Germanic peoples that eventually destroyed the western half of the Roman empire. In A.D. 378, Visigoths routed a Roman army. This disaster shattered Rome's military reputation.

P.6 The Huns kept raiding westward, destroying as they went. Germanic people near the Rhine River—Burgundians, Franks, and Vandals—began to feel the pressure and to move westward also. The Rhine River froze during an especially cold winter in A.D. 406. Bundled in furs, Vandal warriors and their families swarmed across the river ice. They met practically no resistance and so they kept moving westward through the Roman province of Gaul. There were no more than 15,000 Vandal warriors. The population of Gaul was probably 20 million. Yet the Vandals raided the cities of Gaul as if they were defenseless. The empire of the west was now so disorganized that it could not muster even a medium-sized army to stop the barbarians.

Barbarians sacked Rome.

P.1 During the first half of the fifth century, Rome was sacked twice by Germanic armies: first by the Visigoths in A.D. 410, next by the Vandals in A.D. 455.

P.2 In 410, Alaric [AL-uh-rik], king of the Visigoths, marched across the Alps toward Rome. Rome still was widely regarded as the center of civilization. The news that Alaric and his army stood outside its walls was shocking. A traitor opened Rome's gates, and thousands of Germans stormed in. They plundered the city for three days.

P.3 Rome remained rich enough to act as bait for other looters. In 455, the king of the Vandals from North Africa sailed to Rome in pursuit of more treasure. This ruthless leader, known as Gaiseric [GY-zuh-rik] the Lame, sacked Rome more thoroughly than Alaric had. Thousands of Romans were taken captive and shipped back to North Africa as slaves.

P.1 **Attila the Hun** Meanwhile, the Huns, who indirectly began this mayhem, were still on the rampage. In fact, the Huns seemed more dangerous than ever under their new leader, Attila [AT-uhl-uh]. The Germanic writer Jordanes described this terrifying chieftain as a short man with a flat nose and thin, graying beard. "He was haughty in his walk, rolling his eyes hither and thither, so that the power of his proud spirit appeared in the movement of his body."

P.2 With his 100,000 soldiers, Attila threatened to conquer the entire empire. In the east, his armies sacked 70 cities. (The Huns failed, however, to scale the high walls of Constantinople.)

P.3 In A.D. 452, Attila advanced against Rome. But then the barbarian king was stopped in his tracks by a Christian bishop. The first truly powerful pope of Rome, Leo I, journeyed to Attila's camp near the Po River. No record survives of Leo's words to Attila. Perhaps Leo frightened the Hun by telling of the plague that was then ravishing Italy. Perhaps Attila was simply awed by Leo. Whatever the reason, Attila withdrew his forces.

P.1 **The last emperor of the west** By A.D. 455, the Roman emperor in the west was practically powerless. Germanic tribes now fought one another for possession of the western provinces. Spain belonged to the Visigoths, North Africa to the Vandals. Gaul was overrun by competing tribes: Franks, Burgundians, and Visigoths. Britannia was being invaded by Angles and Saxons. Italy was falling victim to raids by the Ostrogoths.

P.2 The last Roman emperor was a 14-year-old boy whose name, Romulus Augustulus, recalled 1,000 years of past glory. In A.D. 476, he lost his throne to a barbarian general named Odoacer [oh-doh-AY-sur]. Odoacer sent Romulus Augustulus into exile. After 476, no emperor even pretended to rule Rome and its western provinces. Roman power in the western half of the empire had disappeared.

P.3 The eastern half, which came to be called the Byzantine empire, not only survived but flourished for another 1,000 years. Its emperors ruled from Constantinople.

P.4 Even though Rome's political power ended in the west, its cultural influence was felt for centuries afterward. Latin remained the language of learning in the west. The Christian Church, governed from Rome by a succession of popes, became the chief civilizing force of western Europe. Civilization, though shaken to its roots by the barbarian terror, did not perish.

Name: _____

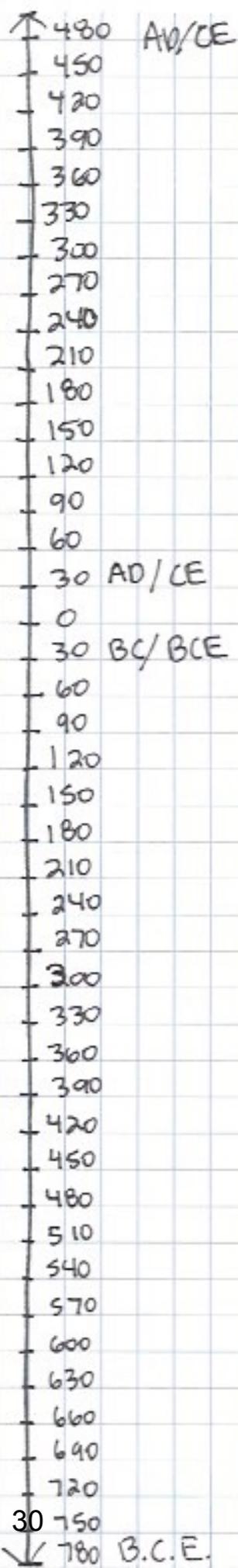
Timeline of Ancient Rome

To better help us understand the time period of Ancient Rome, complete a timeline on the attached graph paper. Use separate lines or colors to indicate events with duration (things that lasted over a period of years). Events that occurred within a single year can be indicated with a line attaching to the timeline at the correct point in time.

Please use pencil so you can erase any errors.

** Add years to every label **

753 BC	Founding of Rome
509-27 BC	Roman Republic
264-146 BC	Punic Wars
60-50 BC	First Triumvirate
43-33 BC	Second Triumvirate
27 BC–180 AD	Pax Romana
14-68 AD	Julian dynasty
96-180 AD	the Five Good Emperors
330 AD	Constantine I moved capital to Constantinople
410 AD	Sack of Rome
476 AD	Fall of the last emperor Romulus Augustus



1L Latin Distance Learning Week 3

Part 1: Ille, Illa, Illud

Directions: *There are TEN mistakes in the following chart, identify the mistakes then correct them by filling in the complete correct answer in the space.*

Case	Masc Sg	Fem Sg	Neut Sg	Trans. Sg	Masc Pl	Fem Pl	Neut Pl	Trans. Pl
Nom	ill	illa	illud	That	illī	illea	illae	Those
Gen	illsius	illius	illius	of that	illium	illārum	illōrum	of those
Dat	illī	illī	illī	to-for that	illes	illīs	illīs	to-fort those
Acc	illum	illam	illum	that	illōs	illās	illa	those
Abl	illō	illō	illō	BWF that	illīs	illīs	illibus	BWF those

Vocab Check 1:

hōrā	_____	cīvitās	_____
rēx	_____	rēgīna	_____
soror	_____	frāter	_____
amīcus	_____	corpus	_____
īra	_____	terra	_____

Part 2: Vocab Identification

Directions: *For each verb, identify all FOUR principle parts, the conjugation to which it belongs, and the meaning.*

1 st P.P	2 nd P.P.	3 rd P.P.	4 th P.P.	Conj.	Meaning
terreō (1)	terrēre	terruī	territum	2 nd	
tolerō (6)					
discō (8)					
culpō (5)					
dō (1)					
vincō (8)					
sum (4)				X	
satiō (3)					
possum (6)			XXXXX	X	

Vocab Check 2:

vīta	_____	remedium	_____
filius	_____	virtūs	_____
pāx	_____	cūra	_____
fāma	_____	donum	_____
mōs	_____	exitium	_____

Part 3: Grammar Practice

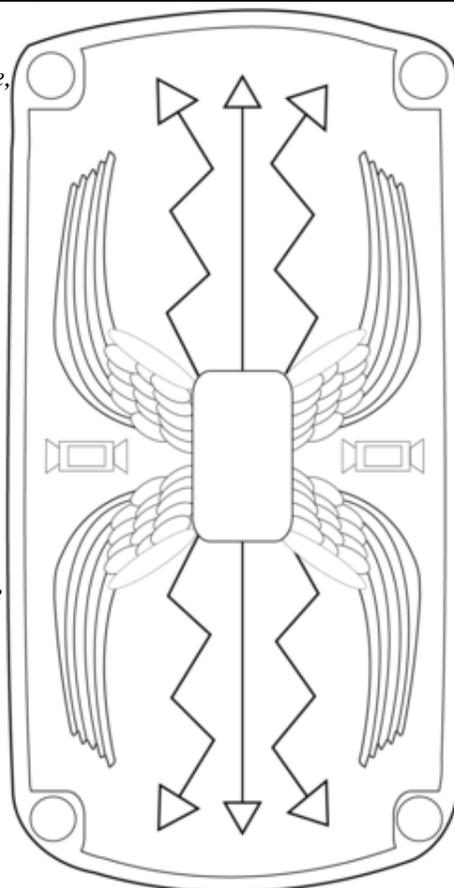
Directions: *Using your demonstrative charts, the noun endings on your cheat sheets, and your vocab sheets, identify the case, number, and gender of the following phrases THEN translate. Remember that both words need to have the same case, number, and gender to AGREE, meaning that you will need to identify the characteristics that ALL words share.*

Phrase	Case	Number	Gender	Translation
nūllum amōrem	Acc	Sg	M	No love (acc)
toī patriae				
ūnī locō				
nūllōs frātrēs				
aliō librō				
illī regī sōlī				
illōs mōrēs				
illud stūdiū				
illius sorōris sōlius				
ūnī uxori				

Part 4: Optional

Directions: *If you have extra time, feel free to color in the shield on the right.*

A Roman shield was invaluable on the battlefield, used to defend and attack. Romans would sometimes lock their shields close together into a formation called the TESTUDO meaning “Tortoise” because it looked like the shell of a tortoise. The Latin word for this type of shield is called SCUTUM.



A Roman TESTUDO formation

Part 4: Verbs

Directions: *Conjugate then translate gerō, gerere, gessī, gestum (to bear, wage) in the FUTURE tense.*

Person	Singular	Translation
1 st		
2 nd		
3 rd		
Person	Plural	Translation
1 st		
2 nd		
3 rd		

Part 4: Vocab Check

malus	_____	parvus	_____
bonus	_____	novus	_____
paucī	_____	plēnus	_____
avārus	_____	alius	_____
sānus	_____	vester	_____

1L Latin Distance Learning Week 3: Grammar Companion

Part 1: Ille Illa Illud

Refer to Chart Q on your Cheat Sheet. Note that the mistakes are spelling mistakes so look closely. I suggest getting in the habit of chanting the forms as you read them (ille! illa! illud!) to help memorize the chart without using your key.

Part 2: Vocab

For this part, refer to the Chapter #'s that I've already put on your sheet. Remember that a verb's principle parts are simply those 4 forms you see in the vocab entry. If I put XXXXX in the boxes, that means that the verb does not a form for that particular principle part.

To find the conjugation (1-3), remember that you look at the SECOND principle part and the endings:

- (1) -āre (2) -ēre (3) -ere

Note that the 2nd and 3rd conjugations are distinguished by the presence of a long mark.

Part 3: Grammar Practice

For each word, I've given you the *number* that points you to the chapter where you can find the gender and meaning as well as the *letter* that labels the chart where you can find case and number. Use Chart H if you still need help translating the cases. Refer to last week's Grammar Companion for help on using the charts. Remember, to appropriately identify the case, number, and gender, you need to find all options for each word and choose the case, number, and gender that are in common for ALL of them (especially the phrases with 3 words).

Phrase	Chart		
nūllum amōrem	nūllum (9) R	amōrem (7) C	
totī patriae	totī (9) R	patriae (2) A	
ūnī locō	ūnī (9) R	locō (9) B	
nūllōs frātrēs	nūllōs (9) R	frātrēs (8) C	
aliō librō	aliō (9) R	librō (6) B	
illī regī sōlī	illī (9) Q	regī (7) C	sōlī (9) R
illōs mōrēs	illōs (9) Q	mōrēs (7) C	
illud stūdiū	illud (9) Q	stūdiū (9) (B)-Neuter	
illius sorōris sōlius	illius (9) Q	sorōris(8) C	sōlius (9) R
ūnī uxori	ūnī (9) R	uxori (7) C	

Part 4: Verbs

The key to conjugating any verb, just like nouns, is finding the STEM plus the ENDING. To find your stem, you need to chop off a piece of the 2nd Principle Part.

Ex. ducō, **ducere**, dūxī, ductum (to lead)

If your verb is in the 1st or 2nd Conjugation, chop off the **re**. If your verb is 3rd Conjugation, chop off the **ere**. Everything that's left will be your Present *stem*.

(1st) laudāre → laudā | re → Stem = laudā

(2nd) monēre → monē | re → Stem = monē

(3rd) ducere → duc | ere → Stem = duc

Once the stem and conjugation have been found, you will need to decide which chart to use based off the CONJUGATION and the TENSE that I requested.

For verb in Part 4 of your assignment, your Conjugation is 3rd (because the 2nd P.P. of gerō, gerere has the short e like *ducere*) and the Tense is FUTURE. If you check your Cheat Sheet, you will be using Chart **K**.

To complete the Latin, write down the stem for in every box under the Latin column, singular and plural. THEN simply add the endings you found on Chart **K**

So if we had been conjugating ducō, ducere the Latin would look like:

Person	Singular
1 st	ducam
2 nd	ducēs
3 rd	ducet
Person	Plural
1 st	ducēmus
2 nd	ducētis
3 rd	ducent

To translate, refer to the personal pronouns of Chart **G**, the magic words on Chart **K**, and the meaning of the verb already given on your assignment (gerere = to wage, bear). Using ducō as the example, the translation would like:

Person	Singular
1 st	I will lead
2 nd	You will lead
3 rd	He, she, it will lead
Person	Plural
1 st	We will lead
2 nd	You all will lead
3 rd	They will lead

- cūpā, culpāre, culpāvī, culpātum - to blame, censure (5)
 dēmōnstrō, dēmōnstrāre, dēmōnstrātum - to point out, show, demonstrate (8)
 dō, dāre, dēdī, dātum - to give, offer (1)
 errō, errāre, errāvī, errātum - to wander; err, go astray, make a mistake, be mistaken (1)
 iuvō, iuvāre, iuvī, iūtum - to help, aid, assist; to please (4)
 laudō, laudāre, laudāvī, laudātum - to praise (1)
 necō, necāre, necāvī, necātum - to murder, kill (7)
 satīō, satīāre, satīāvī, satīātum - to satisfy, sate (3)
 servō, servāre, servāvī, servātum - to preserve, save, keep, guard (1)
 sūperō, superāre, superāvī, superātum - to be above, have the upper hand, surpass; overcome, conquer (5)
 tolerō, tolerāre, tolerāvī, tolerātum - to bear, endure (6)
 vōcō, vocāre, vocāvī, vocātum - to call, summon (1)
- 2nd Conjugation
 audeō, audēre, atisus sum - to dare (7)
 dēbeō, debēre, debui, debitum - to owe; ought, must, should (1)
 docēō, docēre, docui, docitum - to teach (8)
 habēō, habēre, habui, habitum - to have, hold, possess; consider, regard (3)
- māneō, manēre, mānāvī, mānātum - to remain, stay, stay behind, abide, continue (5)
 mōneō, monēre, mōnuī, mōnitum - to remind, advise, warn (1)
 remāneō, remanēre, remānāvī, remānātum - to remain, stay, stay behind, abide, continue (5)
 salvē, salvēte - hello, greetings (1)
 salvēō, salvēre - to be well, be in good health (1)
 terrēō, terrēre, terruī, territum - to frighten, terrify (1)
 vālē, valēte - good-bye, farewell (1)
 vālēō, valēre, vālui, valitum - to be strong, have power; be well (1)
 vidēō, vidēre, vīdī, vīsum - to see; observe, understand (1)
- 3rd Conjugation
 āgō, āgere, ēgī, āctum - to drive, lead, do, act; pass, spend (*like or time*) (8)
 discō, discere, didici - to learn (8)
 dūcō, dūcere, dūxī, dūctum - to lead; consider, regard; prolong (8)
 gērō, gērere, gēssi, gēstum - to carry; carry on, manage, conduct, wage, accomplish, perform (8)
 scrībō, scrībere, scrīpsī, scrīptum - to write, compose (8)
 trāhō, trāhere, trāxī, trāctum - to draw, drag; derive, acquire (8)
 vīncō, vīncere, vīcī, vīctum - to conquer, overcome (8)
- Irregular
 posse, pōsse, pōtui - to be able, can, could, have power (6)
 sum, ēsse, fūi, futūrum - to be, exist (4)
- Adverbs**
 crās - tomorrow (5)
 hērī - yesterday (5)
 hōdiē - today (3)
 ibi - there (6)
 nimis, nīnium - too, too much, excessive; (*in a positive sense, esp. with adjectives and adverbs*) exceedingly, very (9)
 nōn - not (1)
 nūquam - never (8)
 nūc - now, at present (6)
 quāndō - when (5)
 quāre - because of which thing (*lit.*); therefore, wherefore, why (6)
 saepe - often (1)
 sētis - enough, sufficiently (5)
 sēmpēr - always (3)
 tāmēn - nevertheless, still (8)
 tūm - then, at that time; thereupon, in the next place (5)
 ubi - where, when (6)
- Conjunctions**
 dum - while, as long as, at the same time that; or until (*+subjunctive*) (8)
 enim - for, in fact, truly (9)
 et - and; even (2)
 et... et - both... and (2)
 igitur - therefore, consequently (5)
 sed - but (2)
 si - if (1)
- Prepositions**
 ad (+acc.) - to, up to, near to (8)
 cū (+abl.) - down from, from; concerning, about (3)
 ex, ē (+abl.+) - out of, from, from within; by reason of, on account of; of (*after cardinal numerals*) (8)
 in (+acc.) - into, toward; against (9)
 in (+abl.) - in, on (3)
 post (+acc.) - after, behind (7)
 pōpter (+acc.) - on account of, because of (5)
 sine (+abl.) - without (2)
 sub (+abl. w/ verbs of rest) - +acc. w/ verbs of motion) - under, up under, close to, down to/into, to/at the foot of (7)
- Interjection**
 ō - Oh, Oh! (2)
- Idioms**
 amābō tē - please (1)
 grātias āgere (+dat.) - to thank someone; to give thanks to (8)
 nōn sōtūm... sed etiam - not only... but also (9)
 poenās dāre - to pay the penalty (2)
 si quāndō - if ever (5)
- Suffixes**
 -ne - interrogative suffix attached to the first word of a sentence, typically the verb or another word on which the question hinges, to introduce a question whose answer is uncertain (5)
 -que - and (*enclitic conjunction; appended to the second of two words to be joined*) (6)

Chapter 9

Nouns

- 1st Declension
adulescēntia, adulescēntiae (f) - youth, young manhood;
youthfulness (5)
agricola, agricolae (m) - farmer (3)
amicus, amicae (f) - friend (female) (3)
cōpia, cōpiae (f) - abundance, supply (8)
cōpulae, cōpularum (f) - supplies, troops, forces (8)
cūlpa, cūlpae (f) - fault, blame (5)
cūra, cūrae (f) - care, attention, caution, anxiety (4)
dēa, dēae (f) - goddess (6)
discipula, discipulae (f) - learner, pupil, student (female) (6)
fama, famae (f) - rumor, report, fame, reputation (2)
fēmina, fēminae (f) - woman (3)
filia, filiae (f) - daughter (3)
fōma, fōmae (f) - form, shape; beauty (2)
fortūna, fortunae (f) - fortune, luck (2)
glōria, glōriæ (f) - glory, fame (5)
insidiæ, insidiarum (f) - ambush, plot, treachery (6)
ira, irae (f) - ire, anger (2)
littera, litteræ (f) - a letter of the alphabet (7)
litterarē, litterarum (f) - a letter (epistle), literature (7)
magistra, magistrae (f) - schoolmistress, teacher, mistress (4)
morā, morae (f) - delay (4)
navis, navisae (m) - sailor (2)
pātris, patrīae (f) - fatherland, native land,
 (one's) country (2)
pecūnia, pecūniae (f) - money (2)

- philosophia, philosophiae (f) - philosophy (2)
poena, poenae (f) - penalty, punishment (2)
poeta, poetae (m) - poet (2)
porta, portae (f) - gate, entrance (2)
puella, puellae (f) - girl (2)
rēgina, rēginae (f) - queen (7)
rōsa, rōsae (f) - rose (2)
sapientia, sapientiae (f) - wisdom (3)
sententiā, sententiæ (f) - feeling, thought, opinion, vote, sentence (2)
terra, terrae (f) - earth, ground, land, country (7)
victōria, victoriæ (f) - victory (8)
vīta, vitæ (f) - life; mode of life (2)

2nd Declension

- ager, agrī* (m) - field, farm (3)
amicus, amicī (m) - friend (male) (3)
animi, animūrum (m) - high spirits, pride, courage (5)
animus, animī (m) - soul, spirit, mind (5)
bāsium, bāsī (m) - kiss (4)
bellum, bellī (m) - war (4)
caelum, caelī (m) - sky, heaven (5)
cōnsiliū, cōnsiliī (m) - plan, purpose, counsel, advice, judgment, wisdom (4)
dēus, dei (m) - god (6)
discipulus, discipulī (m) - learner, pupil, student (male) (6)
dōnum, dōnī (m) - gift, present (4)
exitium, exitī (m) - destruction, ruin (4)
fillus, fillī (m) - son (3)
Græcus, Græcī (m) - a Greek (6)
liber, librī (m) - book (6)

- loca, locorū* (n) - places, region (9)
loci, locorum (m) - passages in literature (9)
locus, locī (m) - place; passage in literature (9)
magister, magistrī (m) - schoolmaster, teacher, master (4)
morbūs, morbi (m) - disease, sickness (9)
nūmerus, nūmerī (m) - number (3)
oculus, oculī (m) - eye (4)
officium, officiī (n) - duty, service (4)
otium, otī (m) - leisure, peace (4)
periculum, periculī (n) - danger, risk (4)
pōpulus, populī (m) - the people, a people, a nation (3)
puer, puerī (m) - boy; boys, children (*pl.*) (3)
remediū, remediī (n) - cure, remedy (4)
studium, studiī (n) - eagerness, zeal, pursuit, study (9)
stultus, stultī (m) - a fool (4)
tyrānnus, tyrānī (m) - absolute ruler, tyrant (6)
verbum, verbī (n) - word (5)
vir, virī (m) - man, hero (3)
vitium, vitī (n) - fault, crime, vice (6)

3rd Declension

- amor, amoris* (m) - love (7)
carmen, carminis (n) - song, poem (7)
Cicero, Cicerois (m) - (Marcus Tullius) Cicero (8)
civitas, civitatis (f) - state, citizenship (7)
corpus, corporis (n) - body (7)
frater, fratris (m) - brother (8)

Adjectives

- hōmī, hominis* (m) - human being, man (7)
labor, laboris (m) - labor, work, toil; a work, production (7)
laus, laudis (f) - praise, glory, fame (8)
libertās, libertatis (f) - liberty (8)
mōris, morum (m) - habits, morals, character (7)
mōs, mōtis (m) - habit, custom, manner (7)
nōmen, nōminis (n) - name (7)
pax, pacis (f) - peace (7)
ratio, rationis (f) - reckoning, account; reason, judgment, consideration; system; manner, method (8)
rex, régis (m) - king (7)
scribtor, scripctoris (m) - writer, author (8)
sōror, sorōris (f) - sister (8)
tēmpus, tēmporis (n) - time; occasion, opportunity (7)
uxor, uxōris (f) - wife (7)
virgō, virginitis (f) - maiden, virgin (7)
virtus, virtutis (f) - manliness, courage, excellence, character, worth, virtue (7)

Indeclinable

- nihil* - nothing (1)
satis - enough (5)
Pronouns
hic, haec, hoc - this; the latter; he, she, it, they (9)
ille, illa, illud - that; the former; the famous; he, she, it, they (9)
iste, ista, istud - that of yours, that; such (as you have, as you speak of); *someones*
with contemptuous force,
eg, that despicable, that wretched (9)
mē - me, myself (1)
quid - what (1)
tū - you, yourself (*sing.*) (5)

Adjectives

- aliī, aliū* - some . . . others (9)
alius, alia, aliud - other, another (9)
alter, altera, alterum - the other (of two), second (9)
antīquus, antīquae, antīquum - ancient, old-time (2)
avarus, avāra, avārum - greedy, avaricious (3)
bellus, bella, bellum - pretty, handsome, charming (4)
bōnus, bona, bonum - good, kind (4)
Græcus, Graeca, Graecum - Greek (6)
hūmānus, hūmāna, hūmānum - pertaining to man, human; humane, kind; refined, cultivated (4)
liber, libera, liberum - free (5)
māgnus, magna, magnum - large, great; important (2)
maius, maius, maium - bad, wicked, evil (4)
maius, mea, meum - my (2)
multus, multa, multum - much, many (2)
neuter, neutra, neutrum - not either, neither (9)
nōster, nōstra, nostrum - our, ours (5)
nōvus, novus, novum - new; strange (7)
nūllus, nulla, nullum - not any, no, none (9)
pārvus, parva, parvum - small, little (4)
pauci, paucae, paucum - a few (3)
perpetuus, perpetua, perpetuum - perpetual, lasting, uninterrupted,
 continuous (6)
plēnus, plena, plēnum - full, abundant, generous (6)

Verbs

- 1st Conjugation
adiuvō, adiuvāre, adiuvī, adiutum - to help, aid, assist; to please (4)
amō, amāre, amāvī, amātum - to love, like (1)
cedō, cedāre, cedāvī, cedātum - to dine (5)
cōgitō, cōgitāre, cōgitāvī, cōgitātum - to think, ponder, consider, plan (1)
cōnservō, cōnservāre, cōnservāvī, cōnservātum - to preserve, conserve, maintain (1)

Reminder, to conjugate regular verbs (AR, ER, IR follow the same rules):

- 1) take the infinitive (ex: comer)
- 2) remove the ending, the last 2 letters (ex: comer = com__)
- 3) Add the ending that corresponds with the subject of the sentence (You = Tú = -ES ending > comes)

DAY 1

CONJUGATE THE ER VERBS CORRECTLY FOR EACH SENTENCE

ER VERBS

O	EMOS
ES	ÉIS
E	EN

1. Tú _____ estudiar mucho. (deber)
2. El perro _____ mucha agua. (beber)
3. En el centro commercial, las tiendas _____ muchas cosas diferentes. (vender)
4. Los estudiantes _____ mucho en la escuela. (aprender)
5. Mi amiga y yo _____ una milla (*mile*) cada fin de semana. (correr)
6. Vosotros no _____ la lectura de la clase de historia. (comprender)
7. La tienda _____ muchos zapatos. (vender)
8. Los niños _____ muchos libros en sus clases. (leer)
9. Nosotros _____ el desayuno a las ocho de la mañana. (comer)
10. Yo _____ de mis estudiantes. (aprender)

Aprender – to learn

Correr – to run

Beber – to drink

Deber – to ought to/'should'

Comer – to eat

Leer – to read

Comprender – to understand

Vender – to sell

IR Verbs – SAME INSTRUCTION AS DAY 1

DAY 2

1. Los estudiantes _____ los libros para leer. (abrir)

2. Mis padres y yo _____ en Minnesota. (vivir)

3. El trabajador _____ la escalera. (subir)

4. Vosotros _____ a muchas clases cada día. (asistir)

5. Yo _____ un cuarto con mi hermana. (compartir)

6. Mi hermana _____ una carta a mi abuela cada semana. (escribir)

7. Nosotros _____ el trabajo entre (*between*) todos. (dividir)

8. Los animales _____ mucho cuando no tienen comida. (sufrir)

9. Tú _____ muchas paquetes en el correo. (recibir)

10. Yo _____ la tarea con la maestra. (discutir)

O	IMOS
ES	ÍS
E	EN

Abrir – to open

Escribir – to write

Asistir + a – to attend

Recibir – to receive

Compartir – to share

Subir – to go up

Discutir – to discuss

Sufrir – to suffer

Dividir – to divide

Vivir – to live

Challenge – Choose 3 sentences and translate to English:

1. _____

2. _____

3. _____

DAY 3

PRESENT TENSE VERB PRACTICE – CONJUGATE THE VERBS IN THE PRESENT TENSE

1. Graciela _____ las revistas. (leer)
2. Marco y Juanita _____ muy bien. (bailar)
3. Mis amigos y yo _____ en el coro. (cantar)
4. Tú _____ la tele. (mirar)
5. La señora _____ el español. (enseñar)
6. Yo _____ cinco tacos de pollo. (comer)
7. Carlos _____ mucho. (estudiar)
8. Marisol y Julia _____ en la oficina. (trabajar)
9. Sara _____ la tarea en su cuaderno. (escribir)
10. Juan Carlos _____ a caballo los fines de semana. (montar)
11. Enrique y Tomas _____ en una casa grande. (vivir)
12. Ella _____ libros, mochilas y papel en Office Depot. (comprar)
13. Cuando hace buen tiempo yo _____ en la piscina. (nadar)
14. Nosotros _____ pesas en el gimnasio. (levantar)

Tener – To have

TENGO (I have)	TENEMOS (We have)
TIENES (You have)	TENÍS (Y'all have)
TIENE (He/She/It has)	TIENEN (They have)

Conjugate **tener** in the following sentences.

1. Yo _____ tres hermanas y tres hermanos.
2. Adamari y Ana _____ cinco clases hoy.
3. ¿Ellos _____ la clase de matemáticas a las nueve y media?
4. Vosotros no _____ dos videojuegos.
5. Mia, ¿ _____ mi falda nueva?
6. Omar y yo _____ quince años.

Translate the sentences from above to English

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

DAY 4 (2 of 2)

Let me know how you're doing this week!

¡La Cuarentena En Tres Palabras!

hint: cuarentena = quarantine

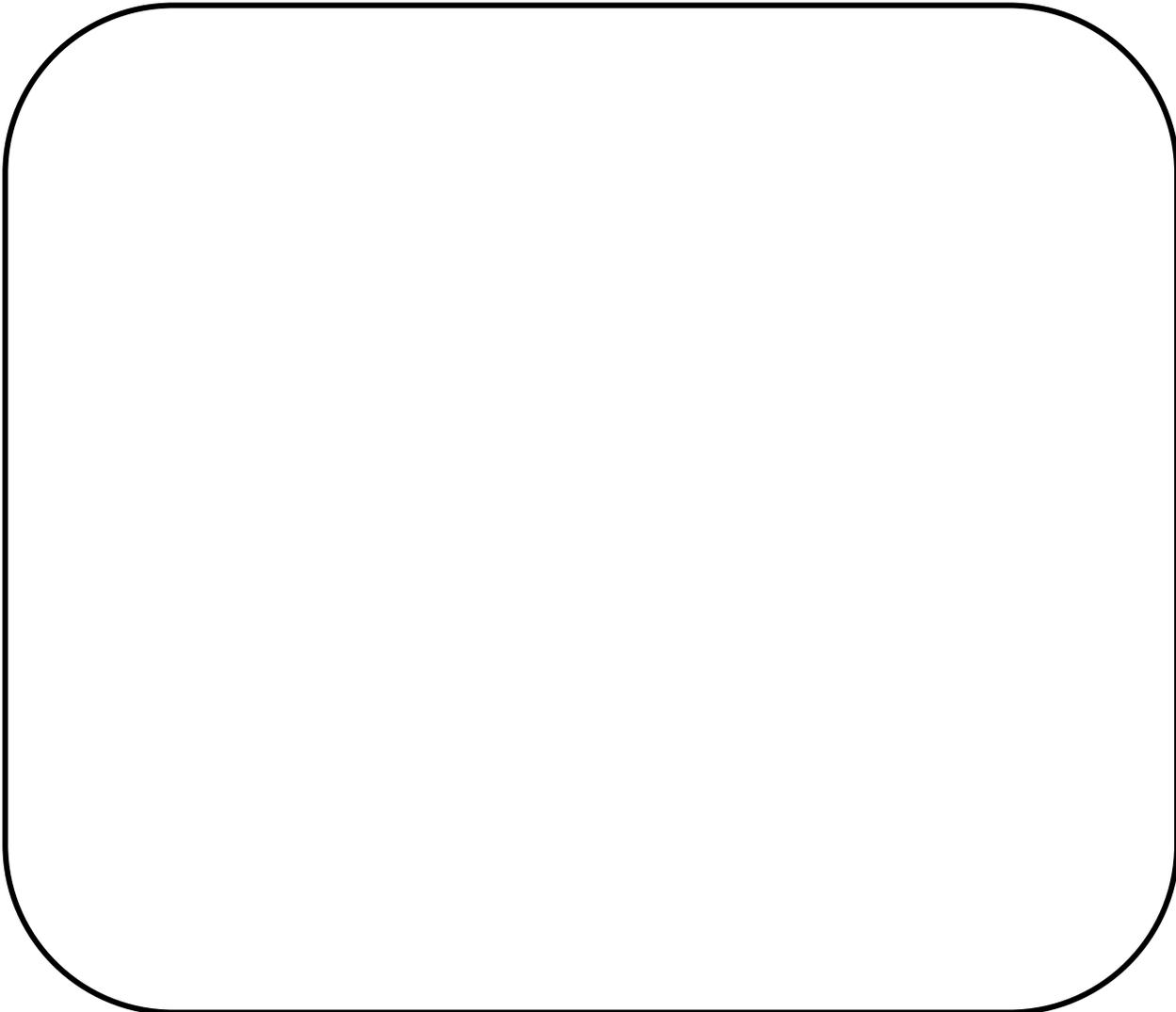
(use 3 words – in Spanish – to describe your quarantine time)

Mis palabras son: _____

(My word is:)

Haz un dibujo de la semana pasada y describelo como puedes:

(Make a drawing of your last week and label it in Spanish as best you can)



MÁS CON EL VERBO TENER

THIS PAGE IS FOR REFERENCE/NOTES

- The verb **tener** means “to have”. It is used to:
 - describe characteristics like hair color, eye color, size, age
 - Tengo ojos azules. *I have blue eyes*
 - Ella tiene pelo largo. *She has long hair.*
 - Mis hermanos tienen ocho años. *My brothers are 8 years old. [have 8 years]*
 - describe possessions, relationships
 - Tenemos dos tíos. *We have 2 uncles.*
 - Tú tienes un perro grande. *You have a big dog.*
 - describe feelings that someone may “have”
 - Los estudiantes tienen hambre. *The students are hungry. [have hunger]*
 - Julio tiene miedo de los payasos. *Julio is scared of clowns. [has fear of]*

Common “tener” expressions:

Tener cuidado	To take care (to be careful)
Tener suerte	To have luck (to be lucky)
Tener hambre	To have hunger (to be hungry)
Tener frío	To have cold (to be cold)
Tener sed	To have thirst (to be thirsty)
Tener miedo	To have fear (to be afraid)
Tener calor	To have warmth (to be hot)
Tener dolor de	To have pain of
Tener _____ años	To have _____ years

DAY 5 (2 of 2)

A. Write the tener expression from the first page that makes the most sense in each statement.

B. You will NEED TO CONJUGATE THE VERB TENER in each one.

1. El elefante _____ del ratón. *ratón = mouse*

2. No quiero comer ahora porque yo no _____.

3. La temperatura está muy alta. Ella _____.

4. Yo llevo un suéter y una gorra porque _____. *llevar = to wear*

5. Ellos necesitan agua porque _____.

6. OOWWW. Yo _____ de mi cabeza. *cabeza = head*

7. Mi hermana gana la lotería, _____. *ganar = to win*

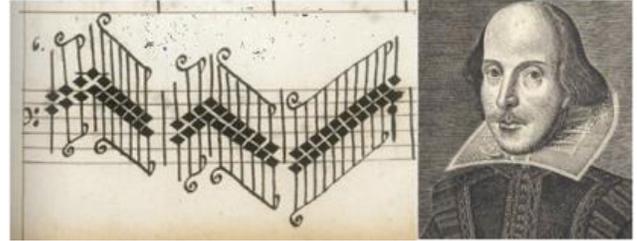
B. Choose 3 of the sentences from above and conjugate them into English.

1. _____

2. _____

3. _____

Scholar Name: _____



Music Lesson No. 2: Shakespeare and Music

This Thursday, April 23, we celebrate the birthday of the English poet and playwright, **William Shakespeare** (1564-1616).

Music plays many roles in Shakespeare’s works. Performances of his plays were full of song and dance scenes. They started with an overture performed by musicians playing the recorder, lute, sackbut, shawm, viol, small drums, and other late Renaissance instruments. At the end the cast would act out a comic dance, even after tragic plays such as *Hamlet* or *Julius Caesar*. “Kemp’s Jig” from 1599 is an example of the playful music for this final dance scene.

Shakespeare mentions more than 100 songs in his plays and sonnets. He often writes new words for melodies that were as popular at that time as today’s pop songs are now. Sometimes he gives stage directions telling what tune to use, such as “Greensleeves” or “Chi Passa.”

The round was a popular type of song in Shakespeare’s time. The melody of a round is repeated, literally going “round and round.” (Have you sung “Row, row, row your boat” or “Frere Jacques”? These are rounds.) Some of the most popular rounds during Shakespeare’s life were “Three Rounds in One,” “Three Ravens,” and “Three Blind Mice.”

Shakespeare was well-versed in the history of music. He refers to Orpheus, the most famous musician of Greek mythology, to show the power of music to affect our emotions and behavior. Shakespeare also mentions “the music of the spheres,” the name that the Greek philosopher Pythagoras gave to music coming from the outer reaches of the universe.

Shakespeare thought of music as a way to judge people’s characters. In *The Merchant of Venice*, he says that people who do not like music are not to be trusted. Shakespeare also used music as a metaphor. One famous example is from Shakespeare’s comedy *Twelfth Night*: “If music be the food of love, play on.”

Scholar Name _____

After reading the first page on “Shakespeare and Music,” please answer the following questions. As a reminder, answers such as “I don’t know” and “nothing” will not be accepted.

- If you attended a play during Shakespeare’s life, how would music be a part of your experience in the theatre?

- How many different songs are mentioned in Shakespeare’s writings? _____
- What type of song has one voice starting alone before the others join in with the same melody? _____
- Name a musician from Greek mythology that Shakespeare mentions in his plays.

- In two or more complete sentences, explain what you think Shakespeare means by, “If music be the food of love, play on.”

For Further Exploration

Music in Shakespeare's Writings. Read here:

<http://www.shakespeare-online.com/quotes/shakespearesongs.html> and here: <http://www.shakespeare-online.com/quotes/shakespeareonmusic.html>

Kemp's Jig. A dance by an unknown composer. It was popular in England at the beginning of the 1600s (17th century). Shakespeare used it in his play *The Tempest*.

Listen here: <https://www.youtube.com/watch?v=pyTTCvgMNDE>

Chi Passa. A song by the 16th-century Italian composer Filippo Azzaiuolo, originally with Italian words. Shakespeare wrote new English verses to the Che Passa melody for his play *Pericles*. Listen here: <https://www.youtube.com/watch?v=zgpKt8MNUFQ>

Greensleeves. Shakespeare wrote 18 (!) new verses to this tune for his play *The Merry Wives of Windsor*. The character John Falstaff says, "Let the sky rain potatoes; let it thunder to the tune of Green-sleeves...". Listen here:

<https://www.youtube.com/watch?v=qM36K0cmmU>

Three Blind Mice. A round in three voices by Thomas Ravenscroft, a musician who lived about the same time as Shakespeare. Ravenscroft published several books of rounds that were popular in the early 1600s. These are the original words:

Three Blinde Mice, Three Blinde Mice,
 Dame Iulian, Dame Iulian,
 The Miller and his merry olde Wife,
 She scrapte her tripe licke thou the knife.

1.	2.
	
<p>Three blind mice. Three blind mice. See how they run. See how they</p>	
	
<p>run. They all ran af-ter the far-mer's wife, who cut off their tails with a</p>	
	
<p>car-ving knife, Did you e- ver see such a sight in your life, as three blind mice?</p>	

Instruments of Shakespeare's time. The left image below shows a **lute** (a pear-shaped plucked string instrument) and several sizes of **viol**, a bowed string instrument that was popular in the late Renaissance and early Baroque (about 1500-1700). The **shawm** (third instrument from left in right image) is an ancestor of the modern oboe. The telescopic slide mechanism of the trombone-like **sackbut** (far right) increases the tube length for lower tones.



Orpheus. Greek mythological figure. Son of Apollo, god of music. Orpheus could tame trees and animals with his singing and lyre-playing. Read more here:

<https://www.theoi.com/articles/the-tragic-myth-about-orpheus-and-eurydice/>

Shakespeare on Orpheus:

Orpheus with his lute made trees,
And the mountain tops that freeze,
Bow themselves, when he did sing:
To his music plants and flowers
Ever sprung; as sun and showers
There had made a lasting spring.

(from *Henry VIII*, 3.1.4-15)

Orpheus' lute was strung with poets' sinews,
Whose golden touch could soften steel and stones,
Make tigers tame and huge leviathans
Forsake unsounded deeps to dance on sands.

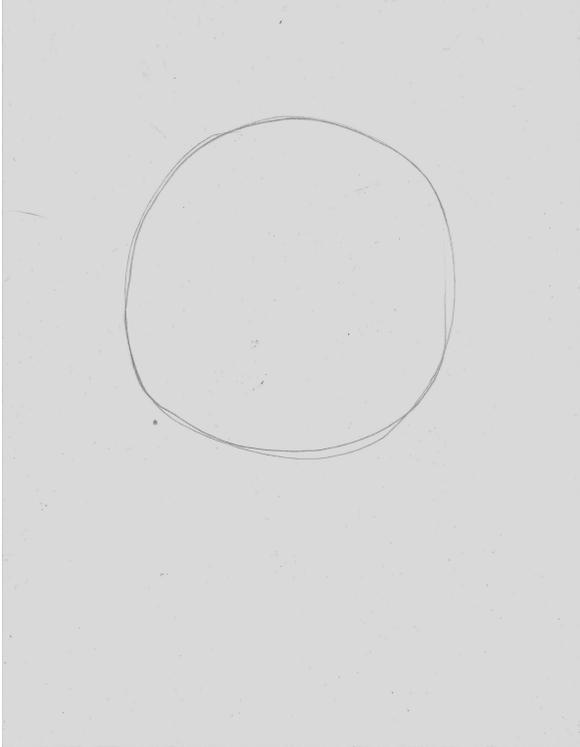
(from *The Two Gentlemen of Verona*, 3.2.79-82)

Later Music for Shakespeare Plays. Many composers of later times, especially in the 19th and 20th centuries, wrote music based on Shakespeare's plays. One example is Felix Mendelssohn's incidental music to *A Midsummer Night's Dream*. To listen, follow the link, and see if you hear the braying of Nick Bottom after Puck transforms him into a donkey! <https://www.youtube.com/watch?v=wlcImOYivDA>

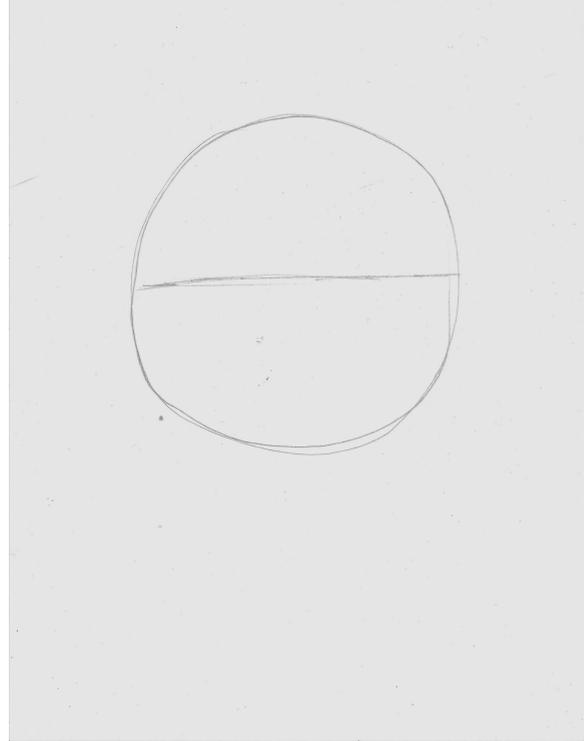
Step #1: making a map of the face (draw lightly)

Drawing the face map first will help you draw a more proportional face! Once you know how to lay out a face map, you know the basics for creating or drawing any face. Your assignment this week is to draw a detailed, and proportional face. Use this guide and Create any face or for a greater challenge, draw the face of someone you know!

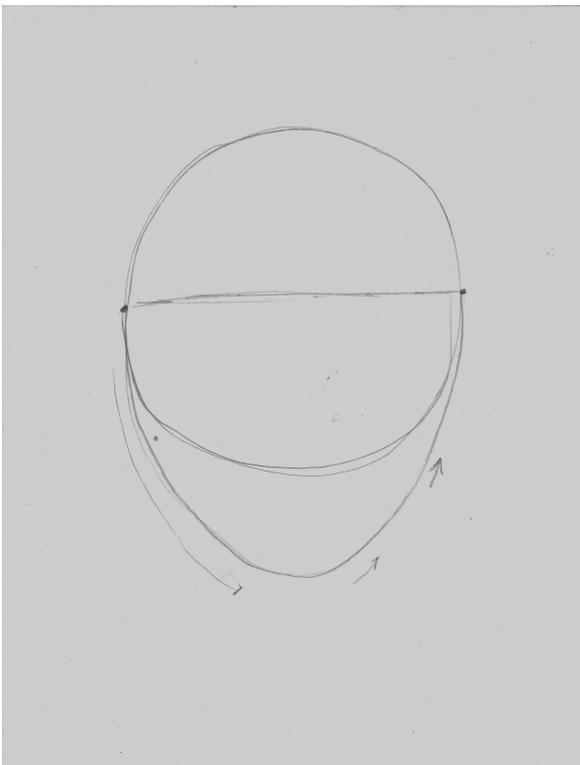
1. Draw a circle



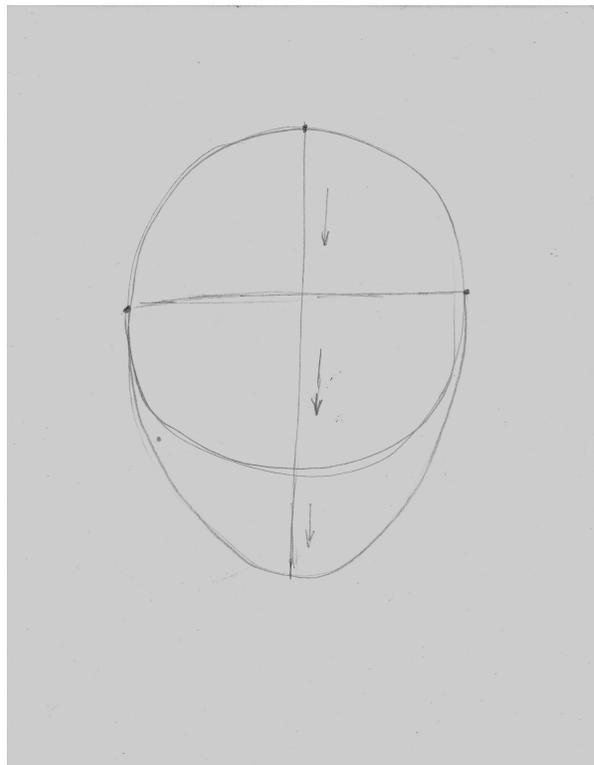
2. draw a line through the center of the circle



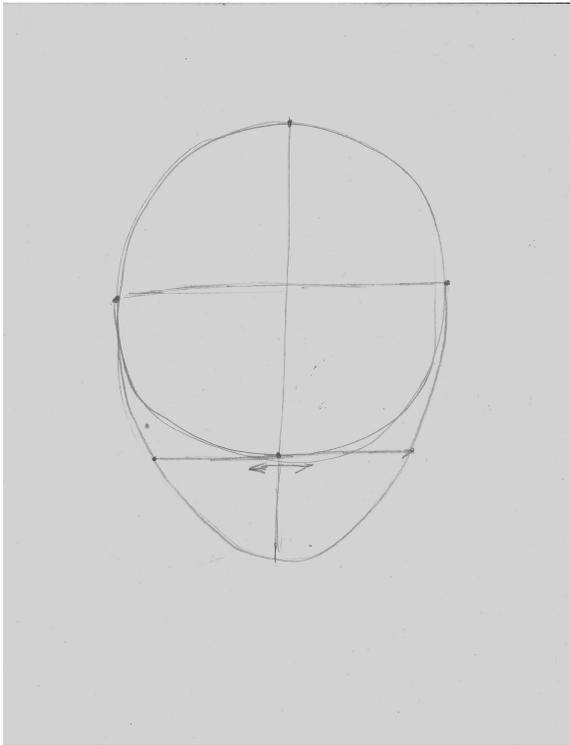
3. From the points where the line intersects the circle draw a U shape from side to side



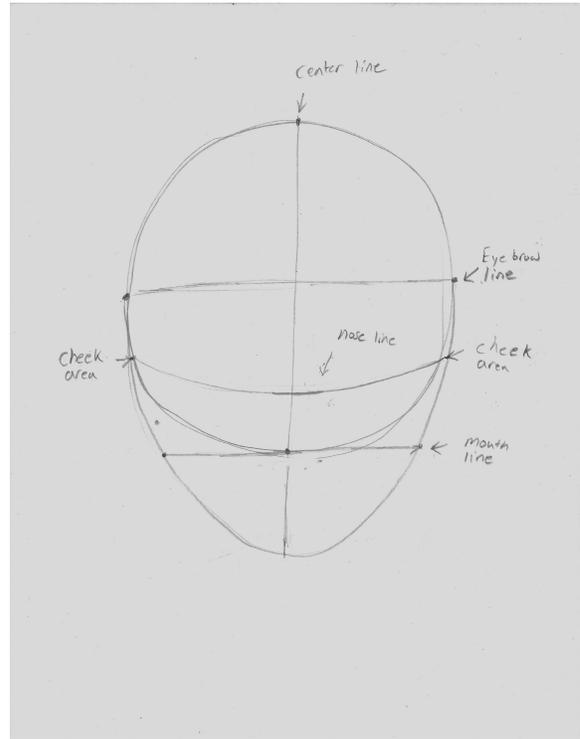
4. Draw a center line down the middle of you upside down egg shape.



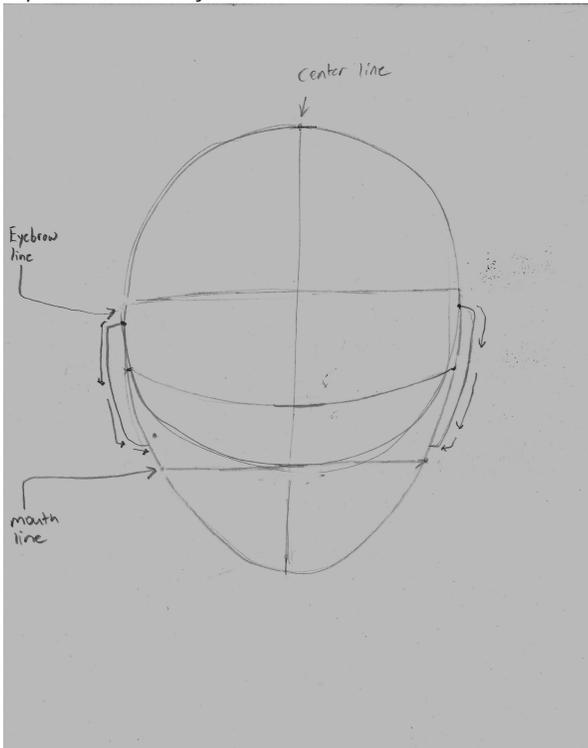
5. Find the bottom of your original circle, and draw lines straight out in either direction until they hit the U shape you drew.



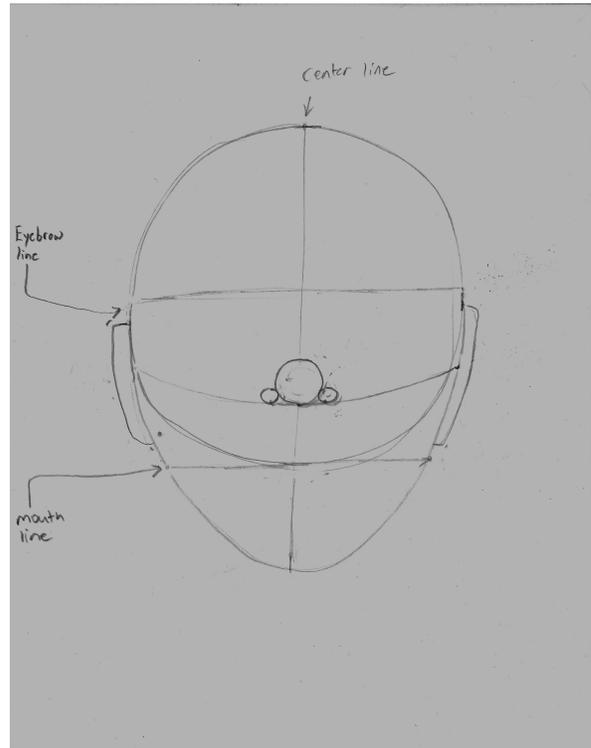
6. To find where our nose will go we will need to find the "cheek area" on both sides of the face. Then draw a slightly downward curved line from side to side. The nose line.



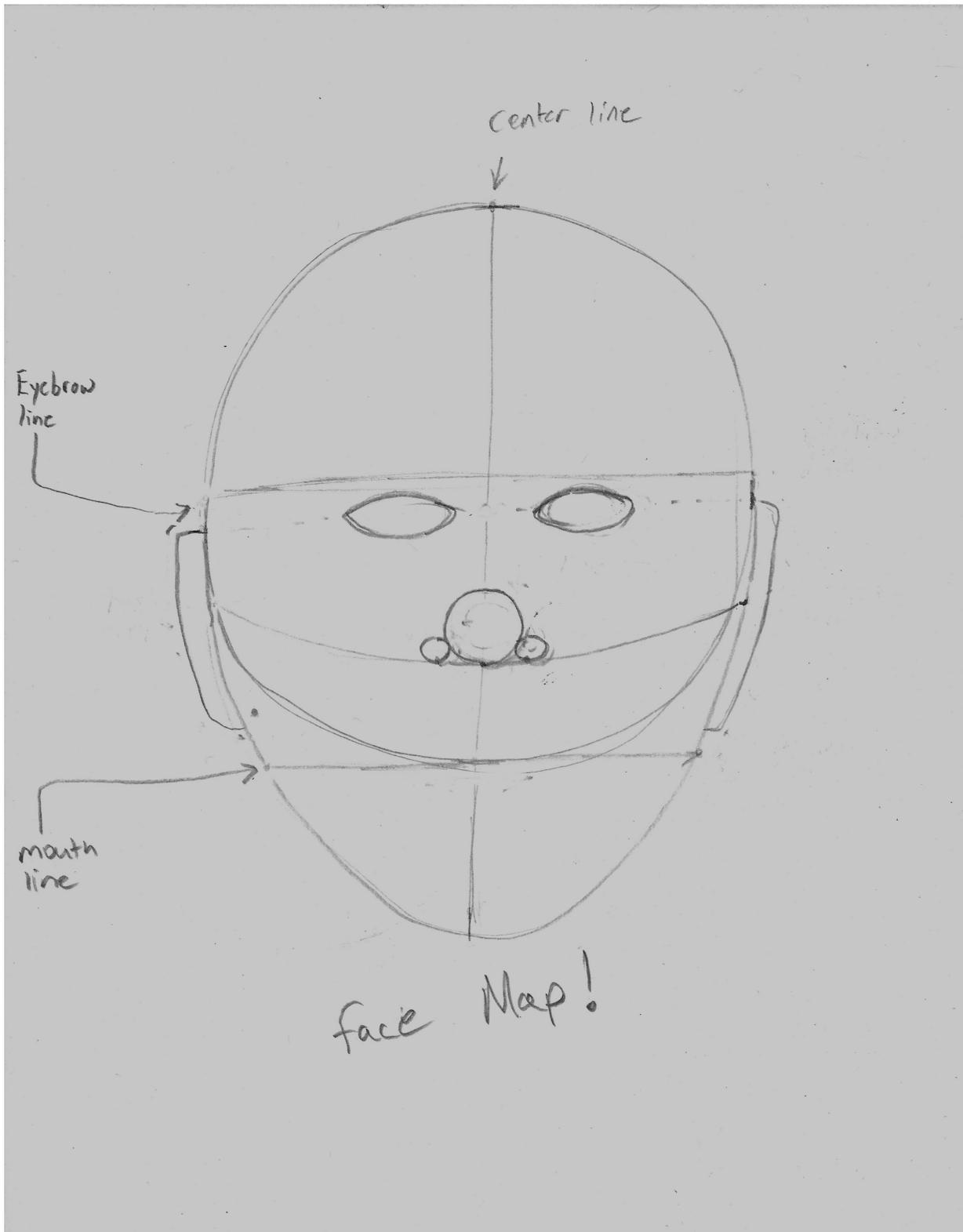
7. To place the ear shapes in, simply draw a C shape on both sides. Do this from just below the eyebrow line to just above the mouth line.



8. To place the nose shapes in, find where your nose line meets your center line and draw a **O**. Then place two smaller **o**'s on each side, creating a **oOo** shape



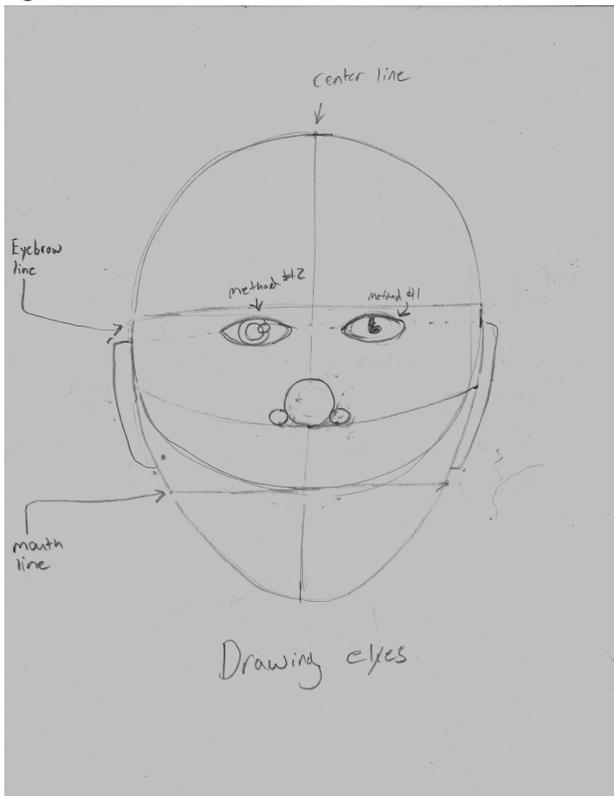
9. to place eye shapes in we simply draw in two football shapes. Try and make sure they are spaced away from your center line slightly. Also make sure to draw these football shapes below the eyebrow line. Once you have completed this you "FACE MAP" is complete. this will serve as a guild as we stat to build our face



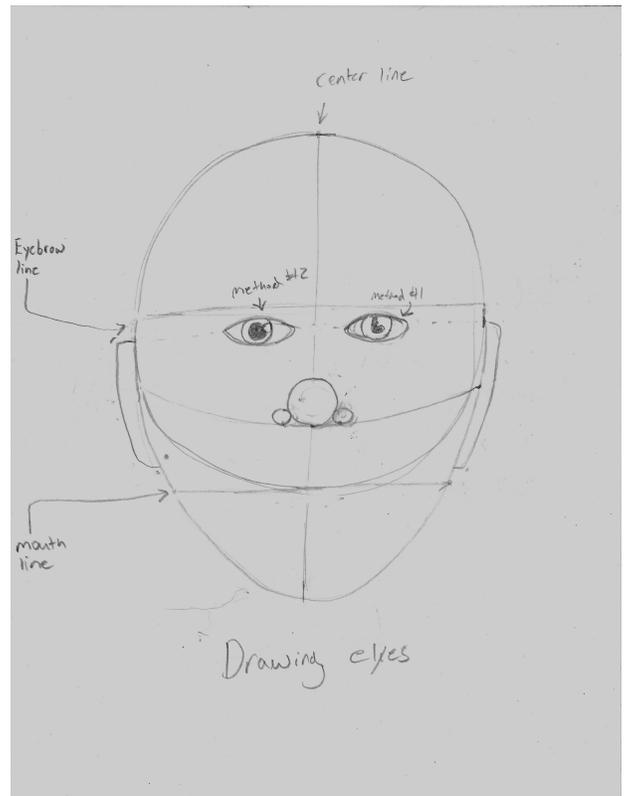
Step #2: Drawing in the facial features (Eyes, nose, mouth)

We are going to start with the eyes. there are 2 simple ways to finish a eye, for this I will call them method1 (M1) and method2 (M2). These are two methods, you only need to draw your face using one of them.

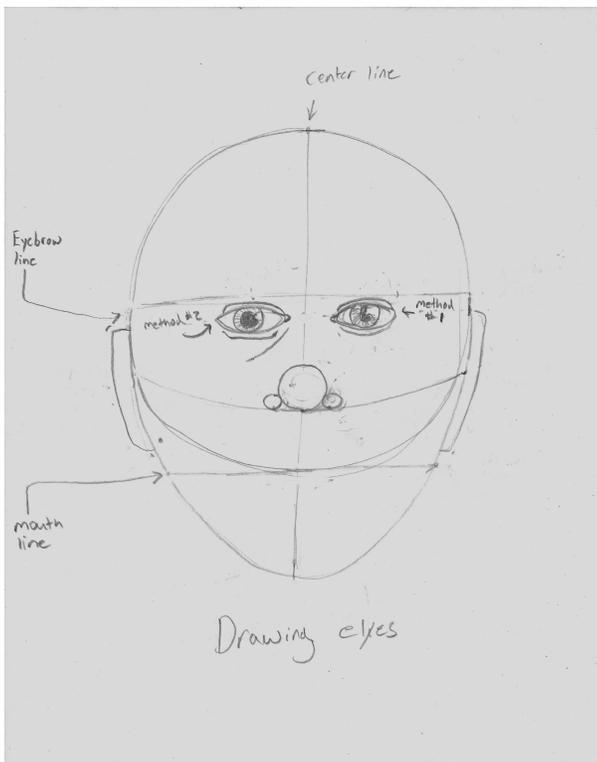
1. M1- Draw a rounded **L** as shown below on the right. M2- Draw 3 circles as shown below on the left



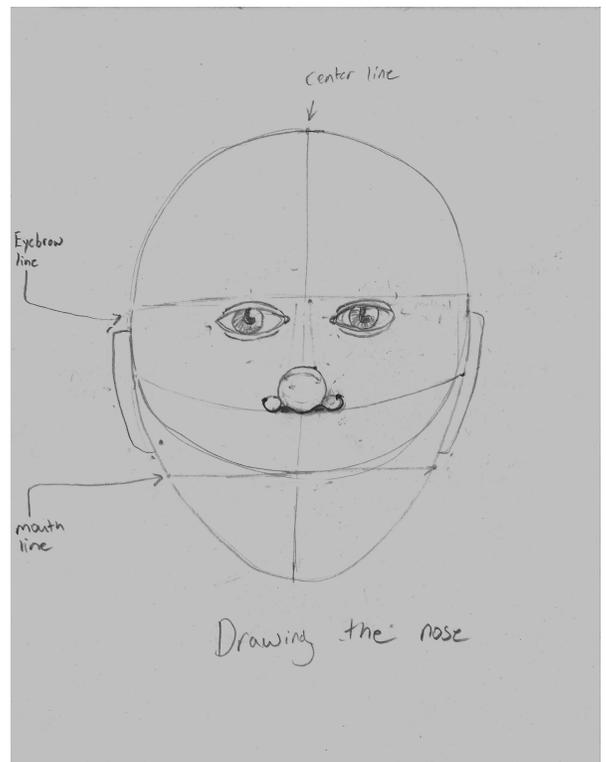
2. M1- draw a circle around you **L** shape. M2- shade in center circle and erase line inside off center circle.



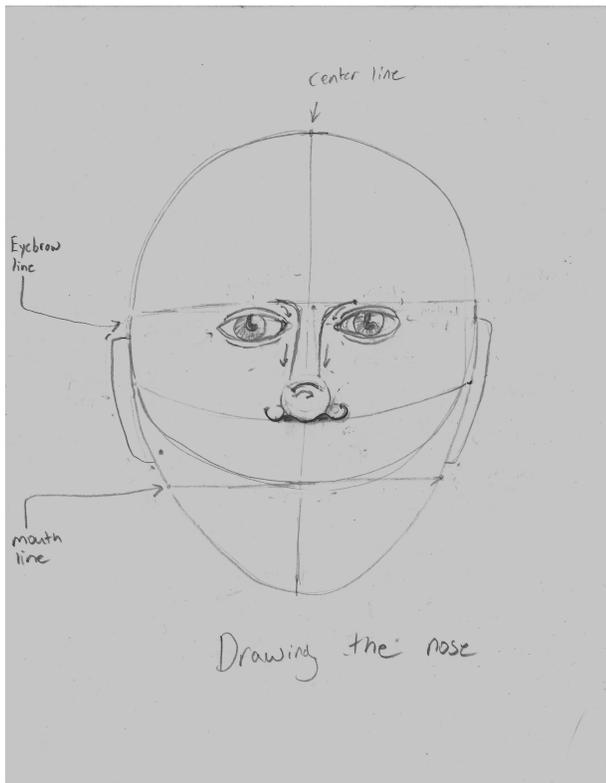
3. M1- shade outer circle leaving the highlight are white. M2- shade grey inside circle shown below. draw lines above and below the football shape to add eye lids, at this point your done with eyes.



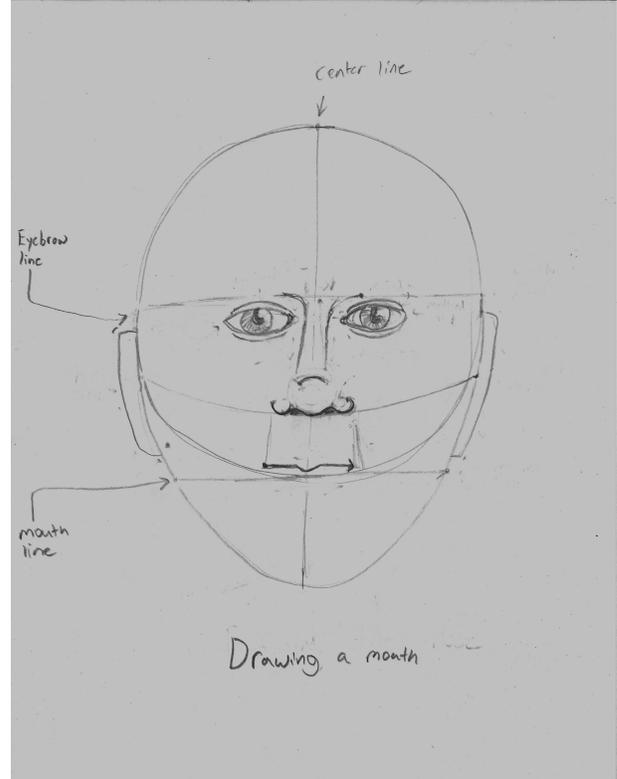
4. To begin to draw a nose I look at the "MAP" have made for it. I start a line in the middle of the far left little **o**. I trace that line along the bottom as shown.



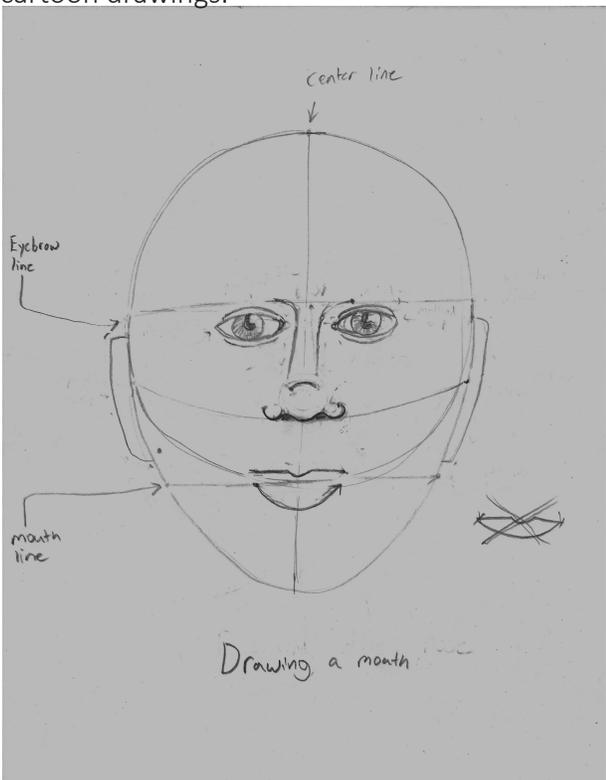
5. Draw a small line to define the round top of the nose. Then draw two lines down, from your eyebrow line to create the bridge of your nose



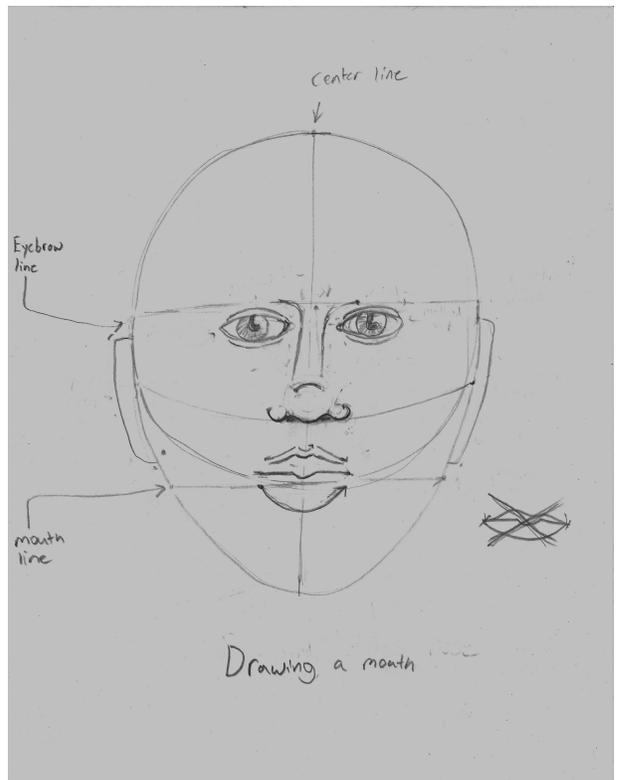
6. To begin the mouth I draw a line with a slight **U** shape in the middle of it over my existing mouth line. This creates the center line of my closed mouth.



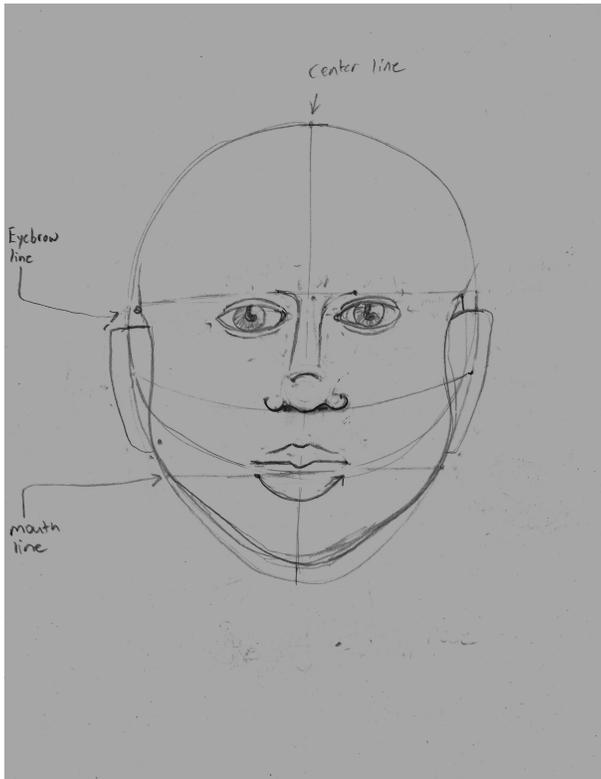
7. The next line we draw under the mouth line is the bottom lip. This line can be round or more square shape. Do not connect the lip line to the center mouth line, this makes mouths look like cartoon drawings.



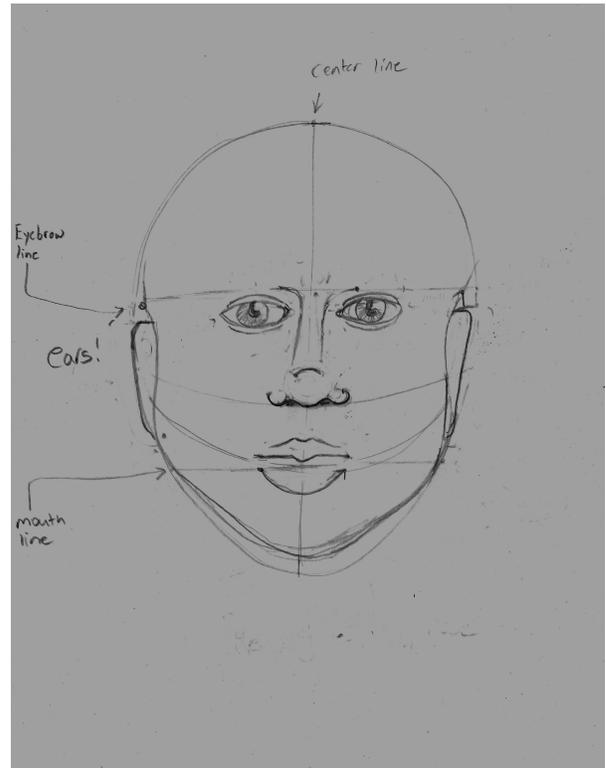
8. Last line you wanna place is the upper lip line. You can place this line higher or to make a different looking lip.



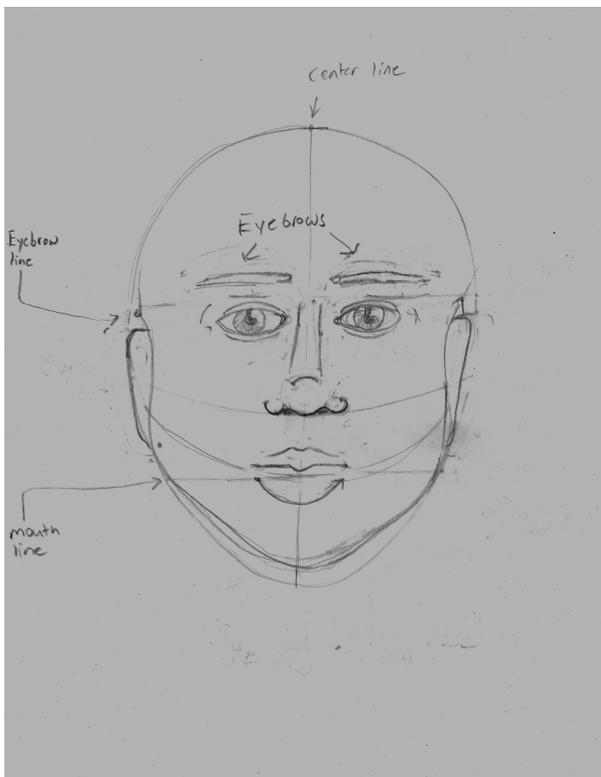
9. Now that you have the main facial features layed in. You can adjust your fave shape so your face doesn't look so "egg headed".



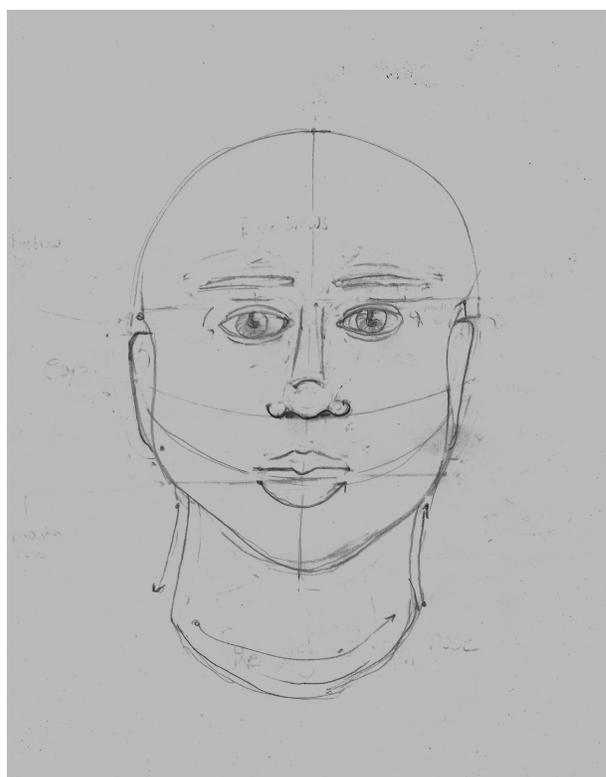
10. If you bring in the head size like I have here. Make sure to move in your ear shapes as well. Unless the face you are creating has large ears.



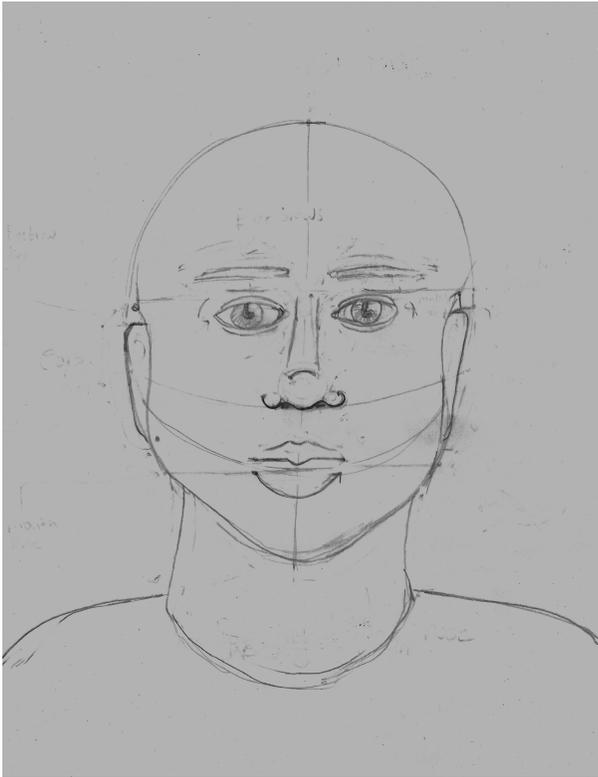
11. Above each eye you can draw the shape of your eye brow.



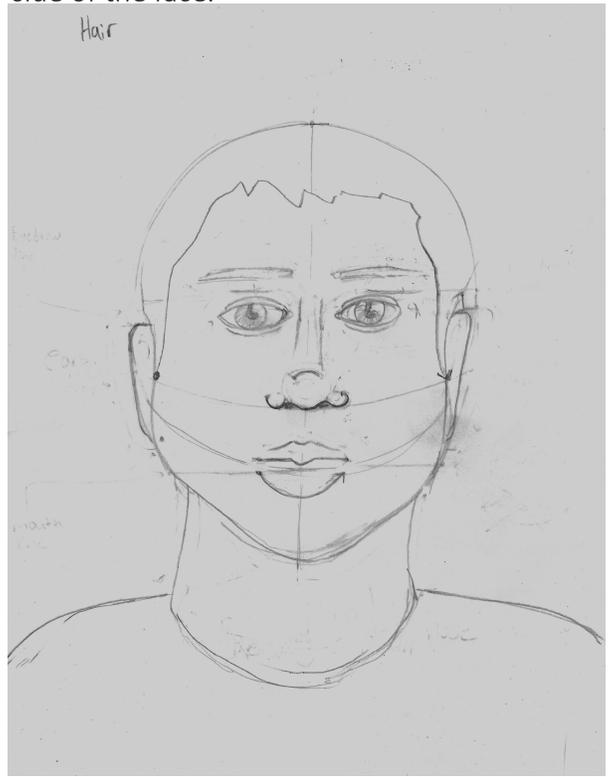
12. Next you will want to draw in a neck. Draw two lines down on either side of the chin. Then attach the two with a half circle line.



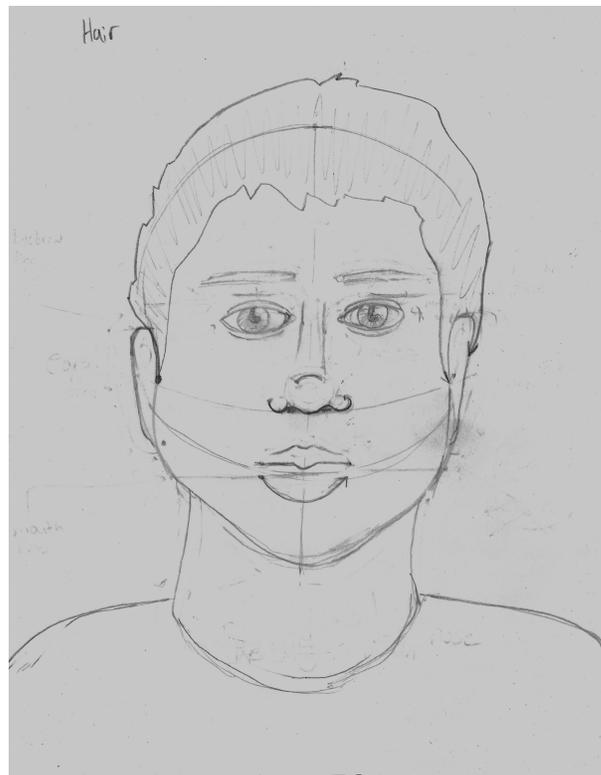
13. Draw in sholder lines from bottom corners of your kneck out to the edge of your paper.



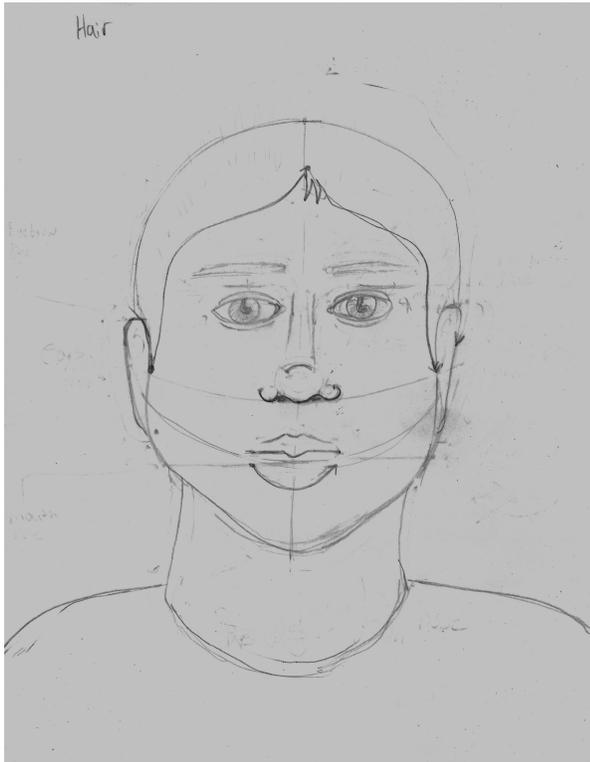
14. To draw short hair lay out the hairline first. I start this line near the middle of the ear and draw it around to the same place on the other side of the face.



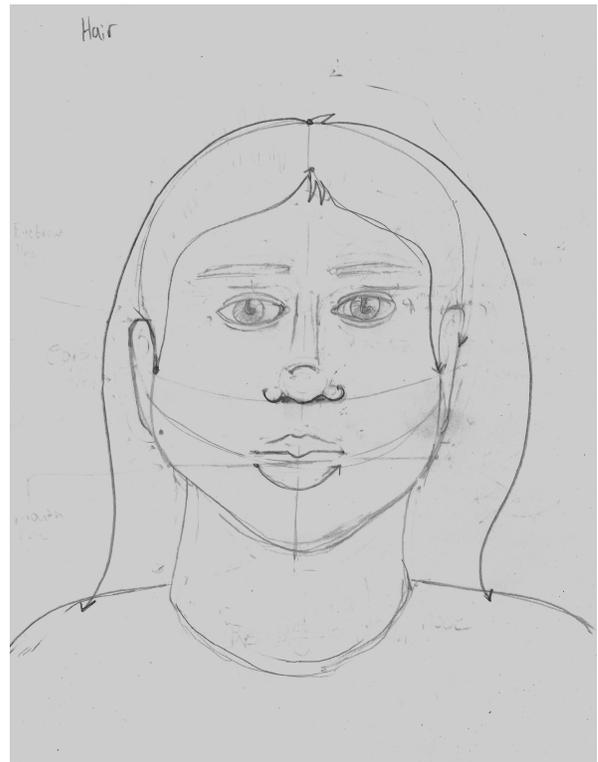
15. Next we draw the top of the hairline in. Notice this may go above the top of the head you originally mapped out. This would be because the hair may stick up a bit.



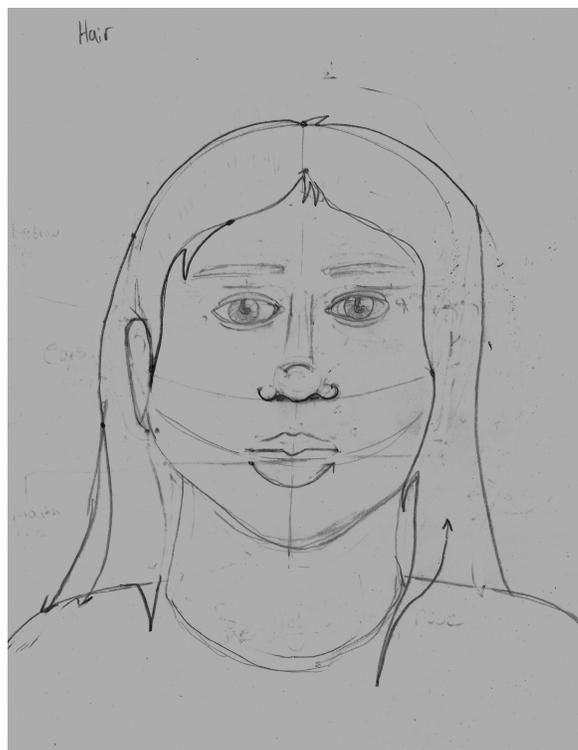
16. To make long hair also draw in your front hairline.



17. Next draw in the to hairlines, but this time run them down to the sholder line.



18. To make the hair appear to flow you can erase a ear and have the hair run over the top. You can also draw in points where the hair may cross over the sholders.



			SOL Physical Education Exercise Guide			
1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.	1. Warm-Up 5-10 minutes. Choose between running, jogging or walking.
2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.	2. Stretch for 10 minutes. Use our SOL stretch routine. Include planks, push-ups and sit-ups if you want to challenge yourself.
3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.	3. Do 20 minutes of continuous exercise. Play a sport or simply get outside. Exercise in place if needed.
4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____	4. Have a parent initial here you completed your workout. _____

All SOL Students,

Complete #1-3 three times a week, or more, and have your parent's initial box #4 when you're finished.

Exercise will benefit your body and mind. Keep moving, we hope to see you all soon!

-Magister Mangold and Magister Beck

A

1L Latin CHEAT SHEET

1st Declension:

Case	Singular	Plural
Nominative	-a	-ae
Genitive	-ae	-ārum
Dative	-ae	-īs
Accusative	-am	-ās
Ablative	-ā	-īs
Vocative	-a	-ae

2nd Declension:

B

Case	Singular	Plural
Nominative	-us/er/ um (N)	-ī/-a (N)
Genitive	-ī	-ōrum
Dative	-ō	-īs
Accusative	-um	-ōs/ -a (N)
Ablative	-ō	-īs
Vocative	-e/er	-ī/-a (N)

3rd Declension:

C

Case	Singular	Plural
Nominative	Word	-ēs/-a(N)
Genitive	-is	-um
Dative	-ī	-ibus
Accusative	-em/Word(N)	-ēs/-a(N)
Ablative	-e	-ibus
Vocative	Word	-ēs/-a(N)

Present Tense Endings (1/2): NONE/am, is, are

D

Person	Singular	Plural
1 st	-ō	-mus
2 nd	-s	-tis
3 rd	-t	-nt

Imperfect Tense Endings (1/2) WAS/WERE

E

Person	Singular	Plural
1 st	-bam	-bāmus
2 nd	-bās	-bātis
3 rd	-bat	-bant

Future Tense Endings (1/2): WILL

F

Person	Singular	Plural
1 st	-bō	-bimus
2 nd	-bis	-bitis
3 rd	-bit	-bunt

Personal Pronouns:

G

Person	Singular	Plural
1 st	I	We
2 nd	You	You all
3 rd	HSI	They

Functions of the Cases: H

Case	Function	Translation
Nom.	Subject	The, a
Gen.	Possession	Of
Dat.	Indirect Object	To-For
Acc.	Direct Object	The, a
Abl.	Object of a Preposition	By-with-from
Voc.	Direct Address	NONE

Present Tense Endings (3rd)

NONE/am, is, are

I

Person	Singular	Plural
1 st	-ō	-imus
2 nd	-is	-itis
3 rd	-it	-unt

Imperfect Tense Endings (3rd)

WAS/WERE

J

Person	Singular	Plural
1 st	-ēbam	-ēbāmus
2 nd	-ēbās	-ēbātis
3 rd	-ēbat	-ēbant

Future Tense Endings (3rd)

WILL

K

Person	Singular	Plural
1 st	-am	-ēmus
2 nd	-ēs	-ētis
3 rd	-et	-ent

The Nine Muses “TUM PEC CET” L

1.) Thalia—Comedy & Idyllic Poetry

2.) Urania—Astronomy

3.) Melpomene—Tragedy

4.) Polyhymnia—Sacred Music

5.) Erato—Love Poetry

6.) Clio—History

7.) Calliope—Epic Poetry & Eloquence

8.) Euterpe—Lyric Poetry

9.) Terpsichore—Dance

M

Present Forms of Sum, Esse, Fui, Futurus

Person	Singular	Plural
1 st	sum I am	sumus we are
2 nd	es you are	estis you all are
3 rd	est he, she, it is	sunt they are

Imperfect Forms of Sum, Esse, Fui, Futurus

N

Person	Singular	Plural
1 st	eram I was	erāmus we were
2 nd	erās you were	erātis you all were
3 rd	erat he, she, it was	erant they were

Future Forms of Sum, Esse, Fui, Futurus

O

Person	Singular	Plural
1 st	erō I will be	erimus we will be
2 nd	eris you will be	eritis you all will be
3 rd	erit he, she, it will be	erunt they will be

P

Demonstrative Chart: Hic, Haec, Hoc

Case	Masc Sg	Fem Sg	Neut Sg	Trans. Sg	Masc Pl	Fem Pl	Neut Pl	Trans. Pl
Nom	hic	haec	hoc	This	hī	hae	haec	These
Gen	huius	huius	huius	of this	hōrum	hārum	hōrum	of these
Dat	huic	huic	huic	to-for this	hīs	hīs	hīs	to-for these
Acc	hunc	hanc	hoc	this	hōs	hās	haec	these
Abl	hōc	hāc	hōc	BWF this	hīs	hīs	hīs	BWF these

Q

Demonstrative Chart: Ille, Illa, Illud

Case	Masc Sg	Fem Sg	Neut Sg	Trans. Sg	Masc Pl	Fem Pl	Neut Pl	Trans. Pl
Nom	ille	illa	illud	That	illī	illae	illa	Those
Gen	illius	illius	illius	of that	illōrum	illārum	illōrum	of those
Dat	illī	illī	illī	to-for that	illīs	illīs	illīs	to-for those
Acc	illum	illam	illud	that	illōs	illās	illa	those
Abl	illō	illā	illō	BWF that	illīs	illīs	illīs	BWF those

R

Special -ius Adjective Endings:

Case	Masc Sg	Fem Sg	Neut Sg	Masc Pl	Fem Pl	Neut Pl
Nom	-us	-a	-um	-ī	-ae	-a
Gen	-ius	-ius	-ius	-ōrum	-ārum	-ōrum
Dat	-ī	-ī	-ī	-īs	-īs	-īs
Acc	-um	-am	-um	-ōs	-ās	-a
Abl	-ō	-ā	-ō	-īs	-īs	-īs

Present Tense Endings (3rd-io/4th)

NONE/am, is, are

S

Person	Singular	Plural
1 st	-iō	-īmus
2 nd	-īs	-ītis
3 rd	-it	-iunt

Imperfect Tense Endings (3rd-io/4th)

WAS/WERE

T

Person	Singular	Plural
1 st	-iēbam	-iēbāmus
2 nd	-iēbās	-iēbātis
3 rd	-iēbat	-iēbant

Future Tense Endings (3rd-io/4th)

WILL

U

Person	Singular	Plural
1 st	-iam	-iēmus
2 nd	-iēs	-iētis
3 rd	-iet	-ient

Perfect Tense (All Conj.)

V

Magic Words: have, has, + Past Participle (-ed)

Ex. I have verbed, HSI has verbed

Person	Singular	Plural
1 st	-ī	-imus
2 nd	-istī	-istis
3 rd	-it	-erunt

Pluperfect Tense (All Conj.)

W

Magic Words: had + Past Participle (-ed)

Ex. I had verbed, HSI had verbed

Person	Singular	Plural
1 st	-eram	-erāmus
2 nd	-erās	-erātis
3 rd	-erat	-erant

Future Perfect Tense (All Conj.)

X

Magic Words: will have + Past Participle (-ed)

Ex. I will have verbed, HSI will have verbed

Person	Singular	Plural
1 st	--erō	-erimus
2 nd	-eris	-eritis
3 rd	-erit	-erint

1st Person Singular Pronoun Chart:

Y

Case	Singular	Translation
Nom	ego	I
Gen	meī	of me
Dat	mihi	to me
Acc	mē	me
Abl	mē	by-with-from me

1st Person Plural Pronoun Chart:

Z

Case	Plural	Translation
Nom	nōs	We
Gen	nostrum/ nostrī	of us,our
Dat	nōbīs	to us
Acc	nōs	us
Abl	nōbīs	by-with-from us

2nd Person Singular Pronoun **Alpha**

Case	Singular	Translation
Nom	tū	You
Gen	tuī	of you
Dat	tibi	to you
Acc	tē	you
Abl	tē	by-with-from you

2nd Person Plural Pronoun: **Bravo**

Case	Singular	Translation
Nom	vōs	You all
Gen	vestrum/ vestrī	of you all
Dat	vōbīs	to-for you all
Acc	vōs	you all
Abl	vōbīs	by-with-from you all

3rd Person Pronoun Chart:

SINGULAR **Charlie**

Case	Masculine	Masc Trans	Feminine	Fem Trans	Neuter	Neut Trans
Nominative	is	He	ea	She	id	It
Genitive	eius	his	eius	her	eius	its
Dative	eī	to-for him	eī	to-for her	eī	to-for it
Accusative	eum	him	eam	her	id	it
Ablative	eō	By-With-From him	eā	By-With-From her	eō	By-With-From it

PLURAL **Charlie**

Case	Masculine	Feminine	Neuter	Plural Trans
Nominative	eī	eae	ea	They
Genitive	eōrum	eārum	eōrum	their/of them
Dative	eīs	eīs	eīs	to-for them
Accusative	eōs	eās	ea	them
Ablative	eīs	eīs	eīs	by-with-from them