6th Grade Lesson Plan Packet

5/25/2020-5/29/2020

Remote Learning Packet

There is no need to submit this packet at the end of the week. Enjoy your summer break!

Week 9: May 25-29, 2020

Course: 6 World Cultures

Teacher(s): Mrs. Malpiedi patricia.malpiedi@greatheartsirving.org
Mr. Loomis joseph.loomis@greatheartsirving.org

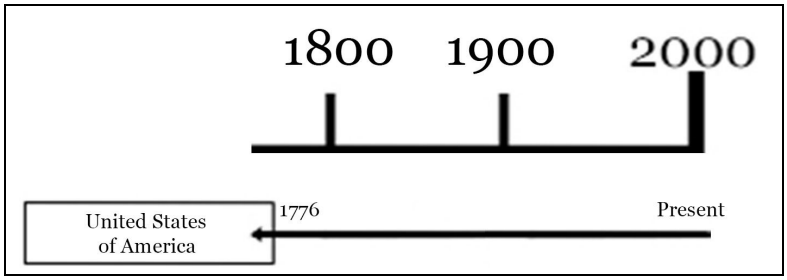
Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Your final project for the year is to create one grand timeline for the civilizations, dates and events we have studied throughout our course. To complete the timeline, follow the instructions below.

1. **Print or copy the timeline templates on pages 4 through 10 of this packet.**
    a. If you would like to add character to your timeline, you might at this point dye all of your pages with coffee or black tea. With parent supervision, you can even burn the edges of the pages with a candle. The end result will be an antique-looking scroll of a timeline. Please make your timeline something neat and beautiful -- something you can be proud to hang on your wall!
    b. Line up and piece together all the pages with tape or glue.
2. **Using the Complete World Cultures Timeline Chart on pages 2 and 3, add all twenty-one civilizations/events and their dates to the timeline.**
    a. <u>DO</u> add the names of each period in the boxes, as well as their start and end years.
    For example:



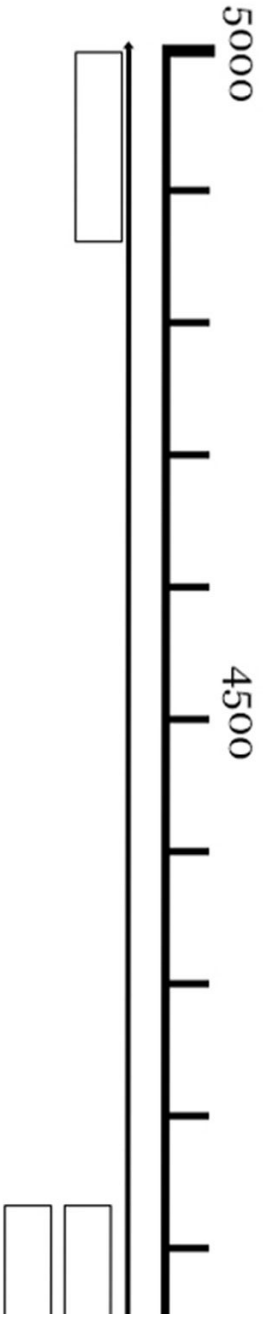
    b. <u>DO NOT</u> feel obliged to also add the descriptions (anything in parentheses on the chart.) Though this would be a good exercise, you'll likely run out of space quickly.
3. **After adding all the names of the civilizations/events and their dates, cut out the provided pictures found on the last pages of this packet. Then, paste those images of art, individuals, artifacts, etc. next to the appropriate civilization/events.** You are welcome to add your own illustrations instead.

Note: Part of the value of a timeline is seeing where things fall in history. You may be surprised, for example, at how many of the events we've studied have happened in just the last 1500 years, or truly how long before America the ancient civilizations of Mesopotamia, Egypt, India, China, etc. were founded.

4. **(Optional) To share your completed timeline with your teacher, upload pictures on Google Classroom or send via email.**

COMPLETE WORLD CULTURES TIMELINE CHART		
	Civilization/ Event	Dates
1	**Ancient Mesopotamia**	**5000 BC to 625 BC** (Start date: Sumerians settle in Mesopotamia and build city-states--the first civilization. End date: End of the Assyrian Empire)
2	**Ancient Egypt**	**4000 BC to 525 BC** (Start: Towns develop along the Nile River. King Menes will unite Upper and Lower Egypt in 3300 BC.The New Kingdom, the time of Egypt's "Golden Age" will take place from 1550 to 1070 BC. End: The Persians conquer Egypt).
3	**Ancient India**	**c. 4000 BC to AD 543** (Start: Civilization develops in the Indus Valley. The two largest cities by 2000 BC are Mohenjo-Daro and Harappa.End: End of the Gupta Empire))
4	**Ancient China**	**c. 3000 BC to AD 906** (Start: The first towns appear around the Huang He, or Yellow River. End: (End of the Tang Dynasty)
5	**Ancient Greece**	**c. 3200 BC to 146 BC** (Start: Growth of the Cycladic civilization. End: End the Hellenistic period))
6	**Ancient Rome**	**753 BC to AD 476** Start: As legend tells, Rome is founded by Romulus and Remus. Rome will see different phases in status and forms of government including the Roman Republic (509 to 27 BC), and the Roman Empire (27 BC to AD 476). End: The last of the western Roman emperors is overthrown.)
7	**The Byzantine Empire**	**AD 330 to AD 1453** (Start: Constantine founds Constantinople in modern-day Istanbul. The Byzantine Empire is also known as the Eastern Roman Empire. End: Fall of Constantinople to the Ottoman Turks)
8	**Judaism**	**c. 1800 BC - present** (God establishes the covenant, or sacred promise, with Abraham, the leader of the Hebrews and grandfather to Jacob (later renamed Israel.)
9	**Christianity**	**c. AD 30 - present** (Jesus Christ is born around 3 BC. He begins teaching publicly at about age 30. His teachings were spread after his death on the cross in c. AD 30 throughout the Roman world and then beyond.)
10	**Islam**	**AD 622 - present** (Muhammad is born in AD 570. At 40 years old he writes the Koran based on visions he has with the Archangel Gabriel. He and his followers flee to Medina in 622, and his following grows from there.)

11	**Middle Ages**	**AD 500s to 1450s**
12	**Vikings**	**AD 793 to 1066** (Start: The first Viking raid occurs in Lindisfarne, England. End: The last Viking raid is the failed attempt of Harald Hadrada to conquer England)
13	**The Crusades**	**AD 1095 to 1291** (Start: The First Crusade to Jerusalem. End: The fall of Acre: the end of the Crusades to the Middle East).
14	**Gothic Architecture**	**AD 1100s to 1500s** (Start: Approximate date when the Early Gothic style of architecture appears. End: Approximate date when the last style of Gothic architecture, the Flamboyant, ceases to be used)
15	**The Black Death**	**AD 1347 to 1352** (Start: The Black Death first arrives in Europe. End: The plague temporarily stopped, although it would reappear later during the Middle Ages)
16	**Hundred Years' War**	**AD 1337 to 1453** (Start: The King of France, Phillip VI, confiscates England's french lands. End: The King of France, Charles VII, defeats the English at the Battle of Castillon)
17	**Renaissance**	**AD 1400s to 1600s**
18	**Protestant Reformation**	**AD 1517** (Martin Luther nails the 95 Theses to the church door in Wittenberg)
19	**Age of Exploration**	**AD 1400s to mid-1600s** (Start: The Portuguese and Spanish empires begin exploration of the Americas. End: The Dutch discover lands now called Australia, New Zealand and the nearby islands)
20	**Industrial Revolution**	**AD Late 1700s to 1914** (Start: The First Industrial Revolution begins in England and spreads to the rest of Europe. End: The Second Industrial Revolution ends with the beginning of the First World War)
21	**United States of America**	**1776 to present** (Officially founded with the signing of the Declaration of Independence on July 4, 1776.)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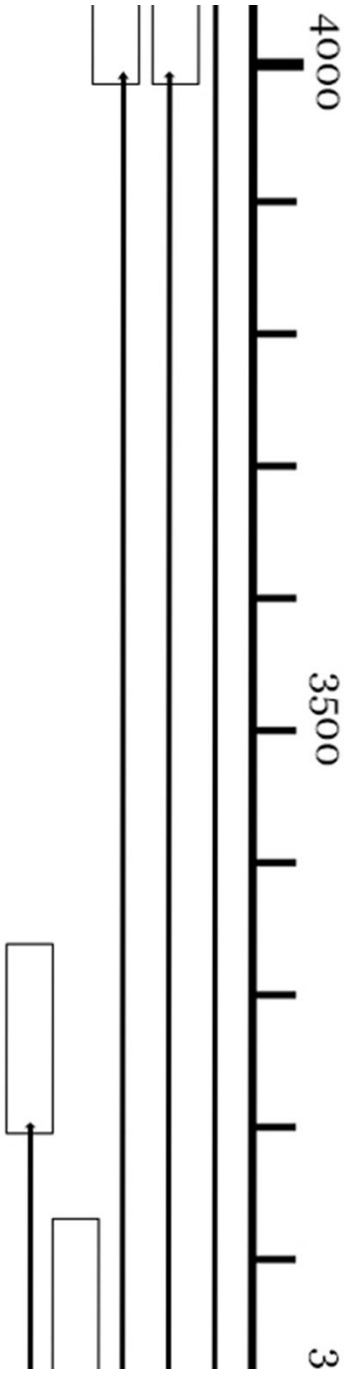
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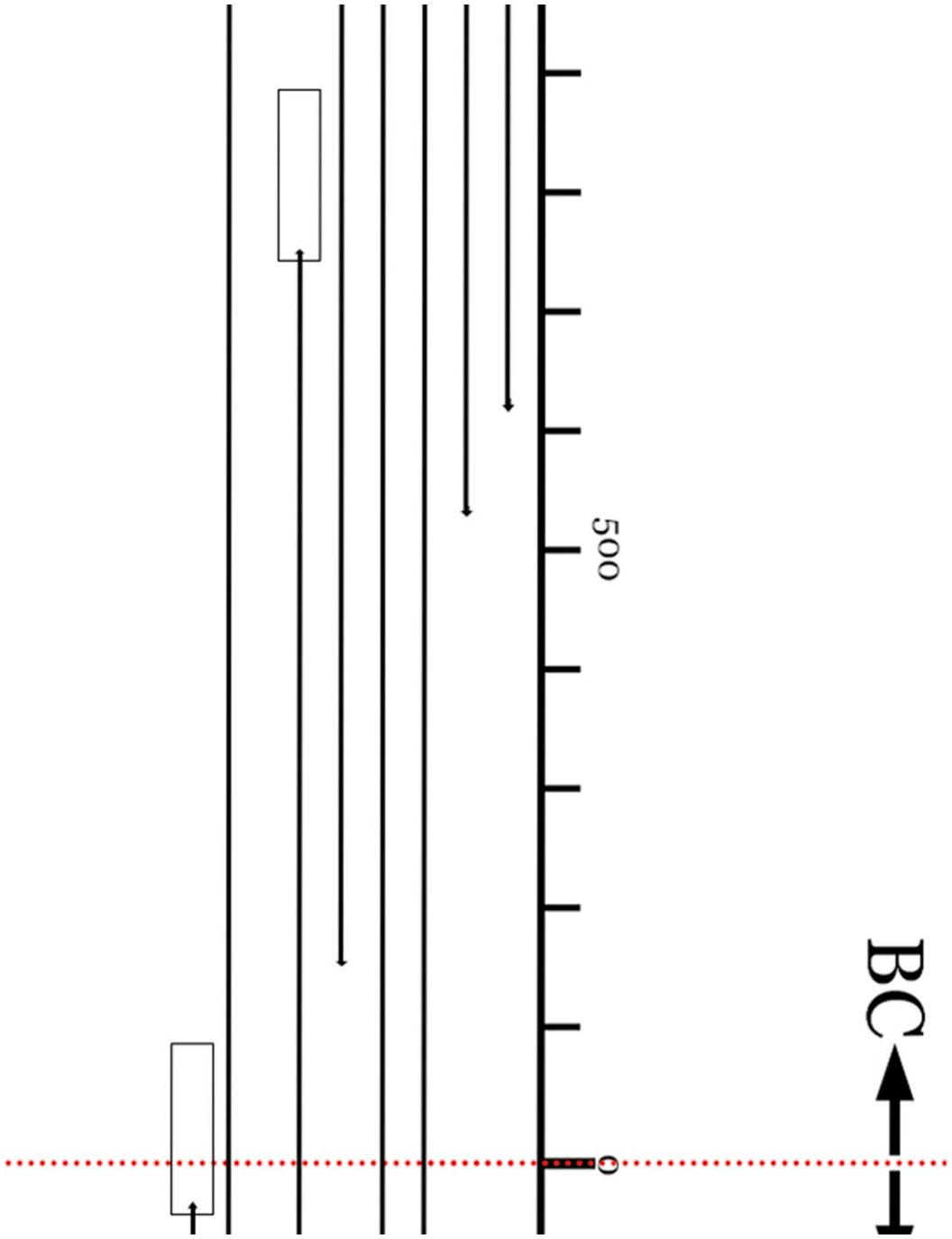
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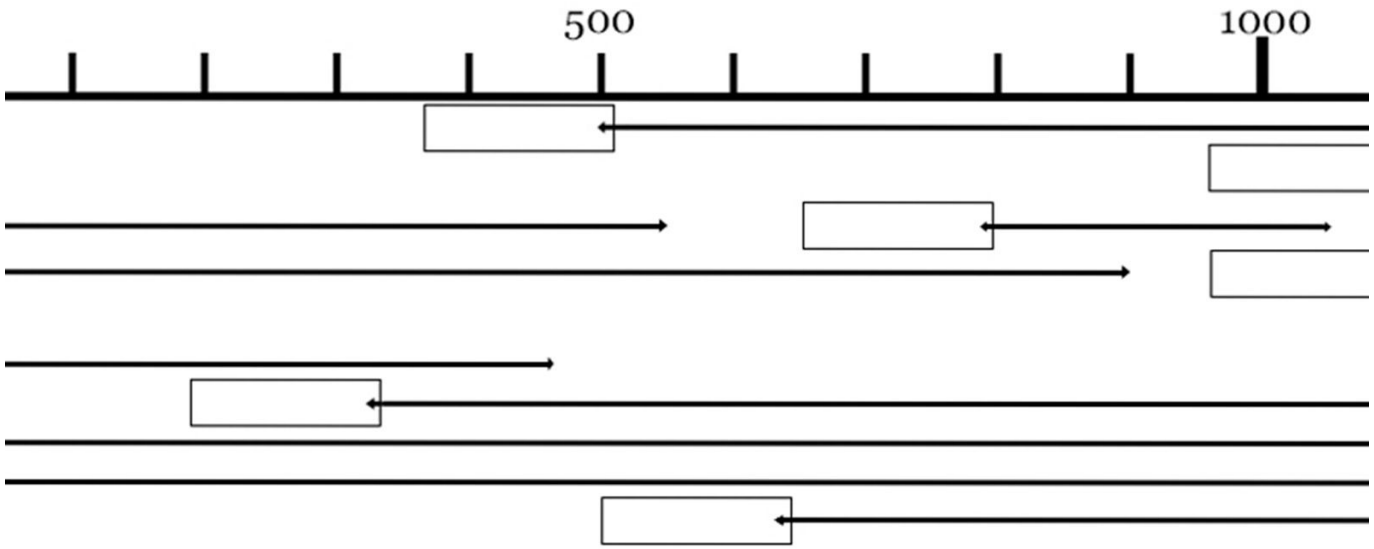
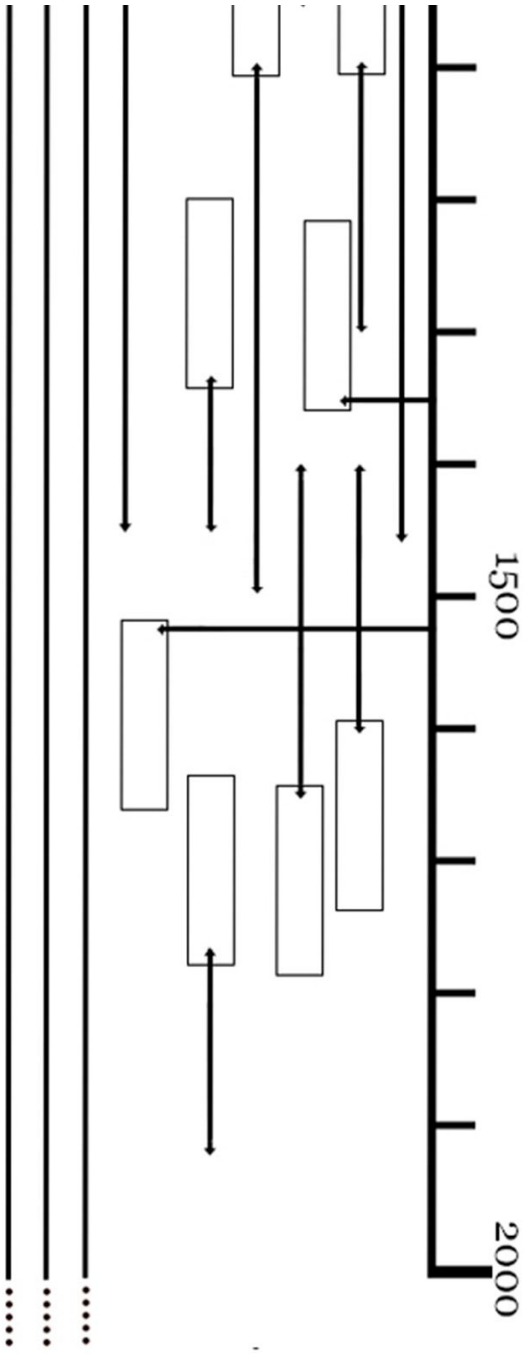
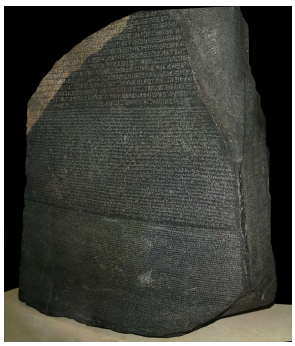
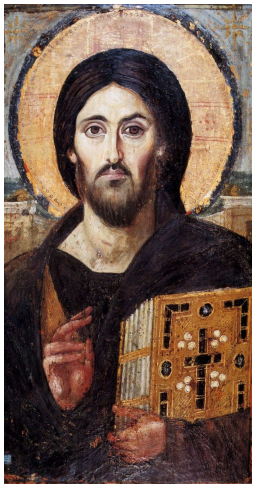
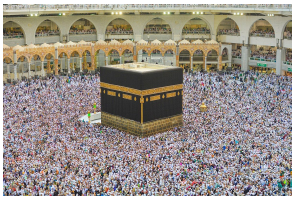
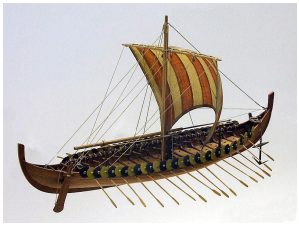
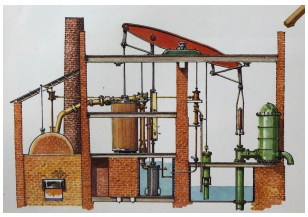




Ancient Egypt:
King Tutankhamun



Ancient China:
Emperor Shihuangdi's
terracotta army

sarcophagus	Ancient Egypt: Rosetta stone	Ancient India: Sculpture robed male figure from city of Mohenjo-Daro	
 Ancient Greece: Parthenon	 Ancient Rome: Sculpture of Romulus and Remus with She-wolf	 Byzantine Empire: The Chi Rho	 Christianity: Icon of Christ Pantocrator
 Islam: Mecca	 Middle Ages: Page from Illuminated manuscript Book of Kells	 Vikings: ship	 Gothic Architecture: Interior of Chartres Cathedral
 Hundred Years' War: Portrait of Joan of Arc	 Renaissance: La Pieta' by Michelangelo	 Age of Exploration: Monument to the Discoveries in Lisbon, Portugal	 Industrial Revolution: First steam engine design

Remote Learning Packet

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Week 9: May 25-29, 2020

Course: 6 Latin

Teacher(s): Miss Salinas: annie.salinas@greatheartsirving.org

Ms. Baptiste: deborah.baptiste@greatheartsirving.org

Cambridge dictionary:
https://www.na4.cambridgescp.com/sites/www.cambridgescp.com/files/legacy_root_files/singles/nadic1/index.html

Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Salvete et Valete discipuli! We are going to remember some of the characters we met this year in *Cambridge Latin Unit 1.* We can all agree that Pompeii the year of the eruption of Vesuvius was certainly an exciting and dynamic place. We teachers enjoyed sharing this time with you.

In each Latin sentence, you are given a clue about a character in the book. Choose a name from the word box when you think you've figured it out. No name will be used twice.

A link to an online dictionary is provided above, in case you do not have your books.

Just a reminder, you will not be turning in this packet. It's been a great privilege teaching 6th Grade Latin this year, and getting to know each one of you has been an absolute pleasure.

*Hic annus erat optimus! Habete splendidos ferias!**

ferias: vacation, holidays, leisure

Quis sum?

Fill in the blanks with the correct name(s) of some of the characters you have met in the stories in our Cambridge Latin Course, Unit 1 this year. Choose from the names in the box. No name will be used twice.

Metella	Grumio	Rōmānī	Alexander	Clara	Felix
Syphax	gladiatorēs	Cerberus	Caecilius	Lucia	Graecī

Quis sum? **Who am I?** ***Qui sumus?*** **Who are we?**

1. Ego sum argentarius, pater, et maritus. Filium et filiam habeo.

Quis sum? _____

2. Ego sum artifex. Herculem et leonem in murō pingebat.* *pingo:* ***paint***

Quis sum? _____

3. Nōn sum vir, nōn sum fēmina. ego in viā sedet. in viā dormit.

Quis sum? _____

4. Sum coquus. Olim ebrius erat et leonem spectat in murō. Perterritus eram!

Quis sum? _____

5. Sum mater. Sum domina. meus maritus est Caecilius.

Quis sum?_____

6. Sum venalicius. Ego Melissam Caeciliō vendidit.

Quis sum?_____

7. Servus erat. Olim ego Quintum ā fure* servavī*. Nunc sum libertus. *servat:* ***save***
fure:* ***thief*

Quis sum?_____

8. In amphitheātrō pugnābamus. Sumus retiariī et murmillonēs.

Quī sumus? _____

9. Sum iuvenis Graecus. Duōs fratrēs habeō. Meus amicus est Quīntus.

Quis sum? _____

10. Nōs sumus architectī et viās et pontēs aedificāmus. Nōs sumus fortissimī!

Quī sumus? _____

11. Nōs sumus sculptōrēs. Nōs statuās puchrās facimus! *facimus:* ***make***
Nōn ignavī sumus! *ignavus:* ***lazy***

Quī sumus? _____

12. Puella est. mea mater is Metella. meus pater est Caecilius. Alexandrum amo.

Quis sum?_____

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Week 9: May 25-29, 2020

Course: 6 Literature & Composition

Teacher(s): Ms. Arnold jacqueline.arnold@greatheartsirving.org
Ms. Brandolini catherine.brandolini@greatheartsirving.org

Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Carefully read the attached short story, "A Retrieved Reformation" by O. Henry. Then thoughtfully answer the reading questions about the story. Marvel at everything you have accomplished this year.

It has been such a pleasure guiding you through these beautiful texts this year. You should be proud of how much you have grown and of all the hard work you have accomplished. Please visit Google Classroom to see a farewell message from your teacher. Enjoy your summer break! We wish you every success in 7th grade!

A **Retrieved Reformation**

IN THE PRISON SHOE-SHOP, JIMMY VALENTINE was busily at work making shoes. A prison officer came into the shop, and led Jimmy to the prison office. There Jimmy was given an important paper. It said that he was free.

Jimmy took the paper without showing much pleasure or interest. He had been sent to prison to stay for four years. He had been there for ten months. But he had expected to stay only three months. Jimmy Valentine had many friends outside the prison. A man with so many friends does not expect to stay in prison long.

"Valentine," said the chief prison officer, "you'll go out tomorrow morning. This is your chance. Make a man of yourself. You're not a bad

fellow at heart. Stop breaking **safes** open, and live a better life."

"Me?" said Jimmy in surprise. "I never broke open a safe in my life."

"Oh, no," the chief prison officer laughed. "Never. Let's see. How did you happen to get sent to prison for opening that safe in Springfield? Was it because you didn't want to tell where you really were? Perhaps because you were with some lady, and you didn't want to tell her name? Or was it because the judge didn't like you? You men always have a reason like that. You never go to prison because you broke open a safe."

"Me?" Jimmy said. His face still showed surprise. "I was never in Springfield in my life."

"Take him away," said the chief prison officer. "Get him the clothes he needs for going outside. Bring him here again at seven in the morning. And think about what I said, Valentine."

At a quarter past seven on the next morning, Jimmy stood again in the office. He had on some new clothes that did not fit him, and a pair of new shoes that hurt his feet. These are the usual clothes given to a prisoner when he leaves the prison.

Next they gave him money to pay for his trip on a train to the city near the prison. They gave him five dollars more. The five dollars were supposed to help him become a better man.

Then the chief prison officer put out his hand for a handshake. That was the end of Valentine, Prisoner 9762. Mr. James Valentine walked out into the sunshine.

He did not listen to the song of the birds or look at the green trees or smell the flowers. He went straight to a restaurant. There he tasted the first sweet joys of being free. He had a good dinner. After that he went to the train station. He gave some money to a blind man who sat there, asking for money, and then he got on the train.

Three hours later he got off the train in a small town. Here he went to the restaurant of Mike Dolan.

Mike Dolan was alone there. After shaking hands he said, "I'm sorry we couldn't do it sooner, Jimmy my boy. But there was that safe in Springfield, too. It wasn't easy. Feeling all right?"

"Fine," said Jimmy. "Is my room waiting for me?"

He went up and opened the door of a room at the back of the house. Everything was as he had left it. It was here they had found Jimmy, when they took him to prison. There on the floor was a small piece of cloth. It had been torn from the coat of the cop, as Jimmy was fighting to escape.

There was a bed against the wall. Jimmy pulled the bed toward the middle of the room. The wall behind it looked like any wall, but now Jimmy found and opened a small door in it. From this opening he pulled out a dust-covered bag.

He opened this and looked lovingly at the tools for breaking open a safe. No finer tools could be found any place. They were complete; everything needed was here. They had been made of a special material, in the necessary sizes and shapes. Jimmy had planned them himself, and he was very proud of them.

It had cost him over nine hundred dollars to have these tools made at a place where they make such things for men who work at the job of safe-breaking.

In half an hour Jimmy went downstairs and through the restaurant. He was now dressed in good clothes that fitted him well. He carried his dusted and cleaned bag.

"Do you have anything planned?" asked Mike Dolan.

"Me?" asked Jimmy as if surprised. "I don't understand. I work for the New York Famous Bread and Cake Makers Company. And I sell the best bread and cake in the country."

Mike enjoyed these words so much that Jimmy had to take a drink with him. Jimmy had some milk. He never drank anything stronger.

A week after Valentine, 9762, left the prison, a safe was broken open in Richmond, Indiana. No one knew who did it. Eight hundred dollars were taken.

Two weeks after that, a safe in Logansport was opened. It was a new kind of safe; it had been made, they said, so strong that no one could break it open. But someone did, and took fifteen hundred dollars.

Then a safe in Jefferson City was opened. Five thousand dollars were taken. This loss was a big one. Ben Price was a cop who worked

on such important matters, and now he began to work on this.

He went to Richmond, Indiana, and to Logansport, to see how the safe-breaking had been done in those places. He was heard to say: "I can see that Jim Valentine has been here. He is in business again. Look at the way he opened this one. Everything easy, everything clean. He is the only man who has the tools to do it. And he is the only man who knows how to use tools like this. Yes, I want Mr. Valentine. Next time he goes to prison, he's going to stay there until his time is finished."

Ben Price knew how Jimmy worked. Jimmy would go from one city to another far away. He always worked alone. He always left quickly when he was finished. He enjoyed being with nice people. For all these reasons, it was not easy to catch Mr. Valentine.

People with safes full of money were glad to hear that Ben Price was at work trying to catch Mr. Valentine.

One afternoon Jimmy Valentine and his bag arrived in a small town named Elmore. Jimmy, looking as young as a college boy, walked down the street toward the hotel.

A young lady walked across the street, passed him at the corner, and entered a door. Over the door was the sign, "The Elmore Bank." Jimmy Valentine looked into her eyes, forgetting at once what he was. He became another man. She looked away, and brighter color came into her face. Young men like Jimmy did not appear often in Elmore.

Jimmy saw a boy near the bank door, and began to ask questions about the town. After a time the young lady came out and went on her way. She seemed not to see Jimmy as she passed him.

"Isn't that young lady Polly Simpson?" asked Jimmy.

"No," said the boy. "She's Annabel Adams. Her father owns this bank."

Jimmy went to the hotel, where he said his name was Ralph D. Spencer. He got a room there. He told the hotel man he had come to Elmore to go into business. How was the shoe business? Was there already a good shoe-shop?

The man thought that Jimmy's clothes and manners were fine.

He was happy to talk to him.

Yes, Elmore needed a good shoe-shop. There was no shop that sold just shoes. Shoes were sold in the big shops that sold everything. All business in Elmore was good. He hoped Mr. Spencer would decide to stay in Elmore. It was a pleasant town to live in and the people were friendly.

Mr. Spencer said he would stay in the town a few days and learn something about it. No, he said, he himself would carry his bag up to his room. He didn't want a boy to take it. It was very heavy.

Mr. Ralph Spencer remained in Elmore. He started a shoe-shop. Business was good.

Also he made many friends. And he was successful with the wish of his heart. He met Annabel Adams. He liked her better every day.

At the end of a year everyone in Elmore liked Mr. Ralph Spencer. His shoe-shop was doing very good business. And he and Annabel were going to be married in two weeks. Mr. Adams, the small-town banker, liked Spencer. Annabel was very proud of him. He seemed already to belong to the Adams family.

One day Jimmy sat down in his room to write this letter, which he sent to one of his old friends:

> Dear Old Friend:
> I want you to meet me at Sullivan's place next week, on the evening of the 10th. I want to give you my tools. I know you'll be glad to have them. You couldn't buy them for a thousand dollars. I finished with the old business—a year ago. I have a nice shop. I'm living a better life, and I'm going to marry the best girl on earth two weeks from now. It's the only life—I wouldn't ever again touch another man's money. After I marry, I'm going to go further west, where I'll never see anyone who knew me in my old life. I tell you, she's a wonderful girl. She trusts me.
>
> Your old friend, Jimmy.

On the Monday night after Jimmy sent this letter, Ben Price

arrived quietly in Elmore. He moved slowly about the town in his quiet way, and he learned all that he wanted to know. Standing inside a shop, he watched Ralph D. Spencer walk by.

"You're going to marry the banker's daughter, are you, Jimmy?" said Ben to himself. "I don't feel sure about that!"

The next morning Jimmy was at the Adams home. He was going to a nearby city that day to buy new clothes for the **wedding**. He was also going to buy a gift for Annabel. It would be his first trip out of Elmore. It was more than a year now since he had done any safe-breaking.

Most of the Adams family went to the bank together that morning. There were Mr. Adams, Annabel, Jimmy, and Annabel's married sister with her two little girls, aged five and nine. They passed Jimmy's hotel, and Jimmy ran up to his room and brought along his bag. Then they went to the bank.

All went inside—Jimmy, too, for he was one of the family. Everyone in the bank was glad to see the good-looking, nice young man who was going to marry Annabel. Jimmy put down his bag.

Annabel, laughing, put Jimmy's hat on her head and picked up the bag. "How do I look?" she asked. "Ralph, how heavy this bag is! It feels full of gold."

"It's full of some things I don't need in my shop," Jimmy said. "I'm taking them to the city, to the place where they came from. That saves me the cost of sending them. I'm going to be a married man. I must learn to save money."

The Elmore bank had a new safe. Mr. Adams was very proud of it, and he wanted everyone to see it. It was as large as a small room, and it had a very special door. The door was controlled by a clock. Using the clock, the banker planned the time when the door should open. At other times no one, not even the banker himself, could open it. He explained about it to Mr. Spencer. Mr. Spencer seemed interested but he did not seem to understand very easily. The two children, May and Agatha, enjoyed seeing the shining heavy door, with all its special parts.

While they were busy like this, Ben Price entered the bank and looked around. He told a young man who worked there that he had

not come on business; he was waiting for a man.

Suddenly there was a cry from the women. They had not been watching the children. May, the nine-year-old girl, had playfully but firmly closed the door of the safe. And Agatha was inside.

The old banker tried to open the door. He pulled at it for a moment. "The door can't be opened," he cried. "And the clock—I hadn't started it yet."

Agatha's mother cried out again.

"Quiet!" said Mr. Adams, raising a shaking hand. "All be quiet for a moment. Agatha!" he called as loudly as he could. "Listen to me." They could hear, but not clearly, the sound of the child's voice. In the darkness inside the safe, she was wild with fear.

"My baby!" her mother cried. "She will die of fear! Open the door! Break it open! Can't you men do something?"

"There isn't a man nearer than the city who can open that door," said Mr. Adams, in a shaking voice. "My God! Spencer, what shall we do? That child—she can't live long in there. There isn't enough air. And the fear will kill her."

Agatha's mother, wild too now, beat on the door with her hands. Annabel turned to Jimmy, her large eyes full of pain, but with some hope, too. A woman thinks that the man she loves can somehow do anything.

"Can't you do something, Ralph? Try, won't you?"

He looked at her with a strange soft smile on his lips and in his eyes.

"Annabel," he said, "give me that flower you are wearing, will you?"

She could not believe that she had really heard him. But she put the flower in his hand. Jimmy took it and put it where he could not lose it. Then he pulled off his coat. With that act, Ralph D. Spencer passed away and Jimmy Valentine took his place.

"Stand away from the door, all of you," he commanded.

He put his bag on the table, and opened it flat. From that time on, he seemed not to know that anyone else was near. Quickly he laid

the shining strange tools on the table. The others watched as if they had lost the power to move.

In a minute Jimmy was at work on the door. In ten minutes—faster than he had ever done it before—he had the door open.

Agatha was taken into her mother's arms.

Jimmy Valentine put on his coat, picked up the flower and walked toward the front door. As he went he thought he heard a voice call, "Ralph!" He did not stop.

At the door a big man stood in his way.

"Hello, Ben!" said Jimmy, still with his strange smile. "You're here at last, are you? Let's go. I don't care, now."

And then Ben Price acted rather strangely.

"I guess you're wrong about this, Mr. Spencer," he said. "I don't believe I know you, do I?"

And Ben Price turned and walked slowly down the street.

_____
_____
_____
_____

GreatHearts Irving

"A Retrieved Reformation" Reading Questions

1. What work did Jimmy do in prison? Does this work help him become a better man?

_____
_____
_____
_____

2. What does Jimmy's exchange with the chief prison officer reveal about his character? What does it reveal about the warden's opinion of Jimmy?

_____
_____
_____
_____

3. Do you think Jimmy was responsible for the safe-breakings in Richmond, Logansport, and Jefferson City? Cite evidence to support your answer.

_____
_____
_____
_____

4. Who is Ben Price and why does he want to find Jimmy?

_____
_____
_____
_____

5. What are two possible motives Jimmy had for staying in Elmore?

_____
_____
_____
_____

6. What characteristic of Annabel's does Jimmy seem to appreciate the most? Why would his past lead him to appreciate this characteristic so much?

7. What decision made by Jimmy is the climax of the story?

8. Contrast Jimmy's actions upon first getting out of prison ("He did not listen to the song of the birds or look at the green trees or smell the flowers. He went straight to a restaurant.") to his actions right before revealing his true identity to his fiancée ("'Annabel,' he said, 'give me that flower you are wearing, will you?' She could not believe that she had really heard him. But she put the flower in his hand. Jimmy took it and put it where he could not lose it.") What does this contrast reveal about his character?

9. Why does Ben Price react the way he does after Jimmy opens the safe? Do you think his reaction was the right thing to do? Cite evidence from the text when forming your answer.

10. Explain the meaning of the title (*retrieve*: to bring back to a former and better state; to restore. *reformation*: the act of abandoning wrong or evil ways of life or conduct.) Did Jimmy retrieve a true reformation in his life? Cite evidence from the text in your answer.

“A Retrieved Reformation” Answer Key

1. *He worked in the prison shoe-shop. Yes, because it trained him in a trade that allowed him to leave behind his life of crime.*

2. *Jimmy does not take responsibility for his actions/crimes, as he continues to deny his involvement. He also reveals a sense of humor through his responses. The chief prison officer seems to think highly of Jimmy and recognizes that Jimmy is capable of living a better life if he would only change his ways.*

3. *Answers will vary. The text strongly implies that Jimmy is responsible through the analysis of Ben Price. Jimmy had unique tools and skills to cleanly open the safes and the gradual increase in the amount stolen implies someone getting bolder with each theft.*

4. *Ben Price is a cop who works on important cases. He wants to hold Jimmy responsible for the safe-breakings that occured recently and make sure that he serves his full prison sentence.*

5. *One possible motive could be that he wanted to break the safe of The Elmore Bank and tried to get to know Annabel Adams so he could find out information about the back & safe. Another motive could be that he was falling in love with Annabel and stayed so he could build a new life with her.*

6. *The characteristic of Annabel’s that seems to mean the most to Jimmy (he emphasizes it in the letter to his friend and sees it right before he saves the little girl) is that she trusts him. Coming from a past of thievery and crime, there were very people who would trust him.*

7. *The climax of the story occurs when Jimmy decides to put the life of the little girl and the wish of Annabel’s for him to do something to save her ahead of his own happiness. He knew that choosing to save the little girl would reveal who he was and so destroy the future he had hoped to build.*

8. *Jimmy had learned how to appreciate beauty in life. When he first got out of prison, he was filled with practical concerns (he wanted to eat a good meal and get his clothes/tools back) and did not care to notice the world about him. When he was about to save the little girl, he knew that he would be arrested as a safe-breaker and wanted something beautiful to remember his fiancée.*

9. *Answers will vary. Perhaps Ben Price realized that Jimmy had reformed himself. Perhaps he saw Jimmy finally taking responsibility for his actions at a point in his life when he had everything to lose. Of course, one could argue that Jimmy still owed the public restitution for the crimes he had already committed and for which he had not yet served time in jail.*

10. *Answers will vary. The text seems to support that Jimmy had indeed reformed his life, since he had set up and was running a legitimate business for over a year, was going to give his specialized tools away, and was planning on moving west so he could live freely where no one knew of his past.*

Remote Learning Packet

There is no need to submit this packet at the end of the week. Enjoy your summer break!

Week 9: May 25-29, 2020

Course: Math Fundamentals

Teacher(s): Miss Schweizer rose.schweizer@greatheartsirving.net

Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Part 1: Review

We are finishing up the year with a final look at Volume and Surface Area. Work through the packet carefully, reading through the notes and completing the exercises. If you would like extra practice with this, look at Chapter 10 in your Textbook.

Part 2: The Logical Conclusion

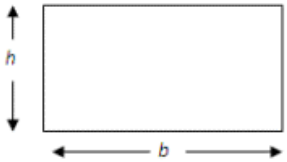
We started out the year with some logic puzzles, logic being the foundation for mathematics, so let's finish the year out with some as well! I have included a few logic puzzles in the packet for you to puzzle over. If you would like to read the story the puzzles are based on, it is available on the internet.

That's it! Thank you all for an excellent (if somewhat abnormal) school year and I hope you all have a wonderful summer break!

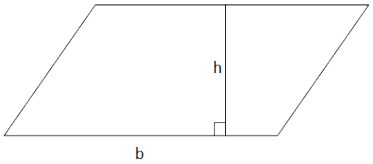
Area Review

In Chapter 10 we learned about area, volume, and surface area. In order to succeed in this chapter, we needed a good foundation in finding the area of different shapes. Write the equation for the area of each shape.

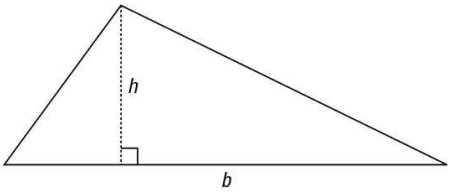
Rectangle:



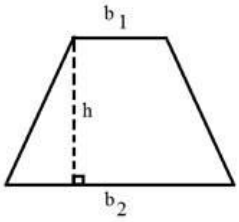
Parallelogram:



Triangles:



Trapezoids:



Notice how each area has one important element: the **base** of the figure. Recall that area is two-dimensional. The base is the one-dimensional line that forms the foundation, or base, of the figure.

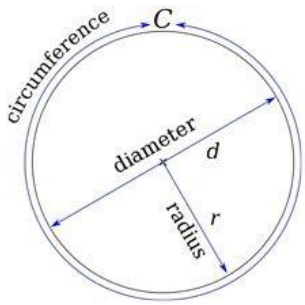
Circles

After finding the area of these polygons, we also learned how to find the area of a circle. This includes one of mathematics most famous and certainly tastiest number: π (pi).

$$\pi = \frac{circumference}{diameter}$$

For **any circle,** the ratio of the circumference to the diameter of the circle will *always* equal π! Even since the ancient times people have known this fact and continually tried to find out the exact value of π (even though it is irrational and continues forever!).

Area of a circle:

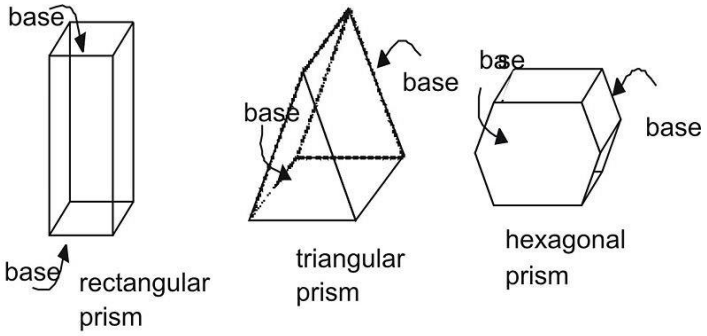


Polyhedrons

After learning how to find the area of two-dimensional shapes, we moved on to three-dimensional shapes like **prisms** and **pyramids** (and dodecahedrons).

Prisms

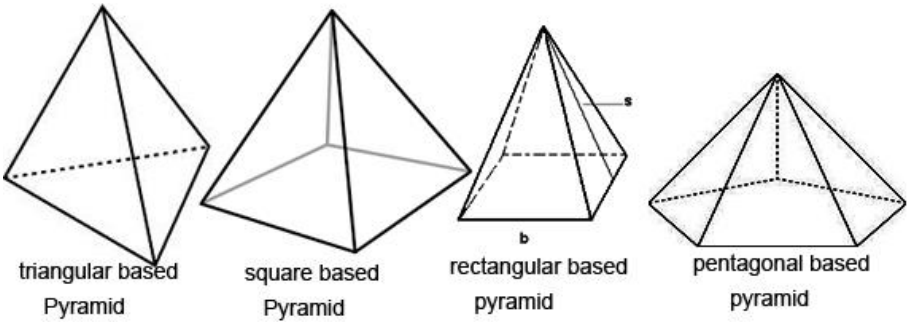
A **prism** is a polyhedron with two congruent bases that are parallel.



Notice how with each type of prism, the name is determined by the shape of the bases. A triangular prism has two parallel triangles that form the bases, and a hexagonal prism has two parallel hexagons that form the bases.

Pyramids

A **Pyramid** is a polyhedron with one base.



Again, the name of a pyramid is determined by the shape of the two-dimensional base.

What is the name of a regular polyhedron with 8 faces? 20 faces?

Volume

We noticed when finding the area of polygons that the base of a figure was vital. Even though volume is a *three-dimensional* measurement, the base of the figure is still important. Since polyhedrons are a *three-dimensional* shape, the base is a *two-dimensional* figure like a triangle or trapezoid.

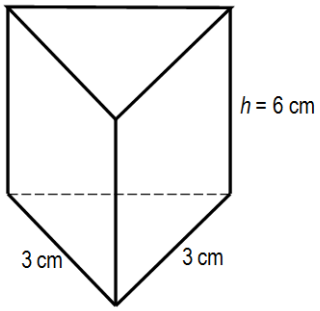
Finding the area of a prism is very similar to finding the area of a rectangle:

Volume of a prism = Base area × height

The only difference is now the base is a polygon, so we must find the area of the base in order to multiply it by the height. If the base is a triangle, we find the area of the triangle. If the base is a rectangle, we find the area of the rectangle.

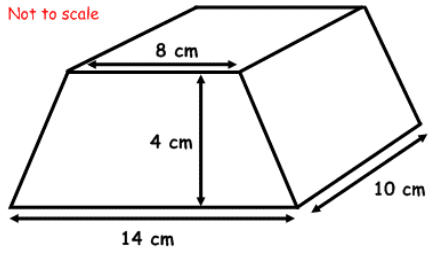
Volume of Prisms

Volume (*V*) of Prism = area of base (*B*) × height (*h*)

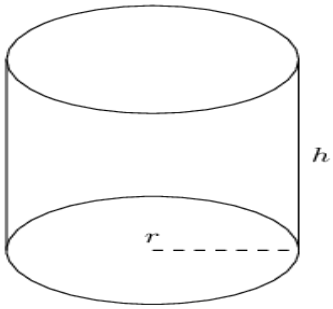


Area of triangle = ½ *bh*
Area of base (*B*) = ½ (3cm × 3cm) = $4.5cm^2$
Volume = $4.5cm^2$ × 6cm = $\mathbf{27}\boldsymbol{cm^3}$

Find the area of this trapezoidal prism. Remember, the base is a trapezoid.

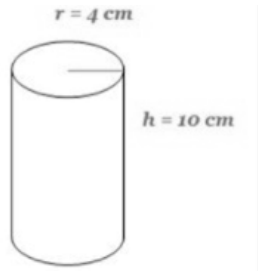


Cylinders



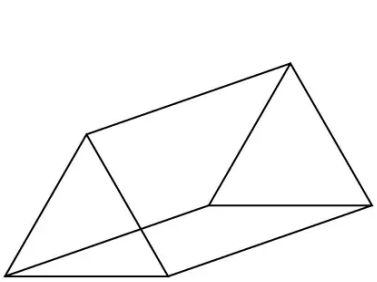
When the bases are circles, the figure is called a **cylinder**. The volume of a cylinder is the same as the volume of a prism:
Base area × height
The only difference is the shape of the base.

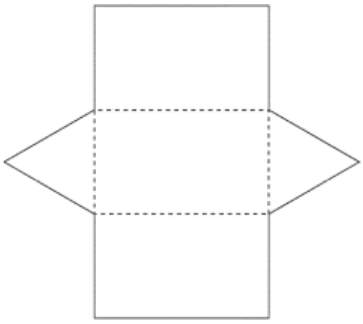
Find the volume of the cylinder. Remember the area of a circle: $\pi \cdot r^2$



Surface Area

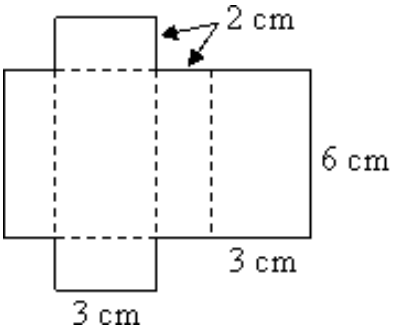
Once we discovered how much volume fit inside of each figure, we learned how to cover the outside of the figure using the **surface area**. The surface area is exactly what it sounds like: the area of all the different surfaces added together.

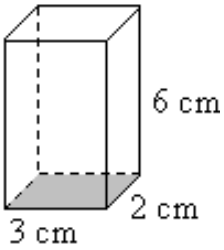




Looking at this triangular prism, we see 5 different shapes: 2 triangles and 3 rectangles. In order to find the surface area, we need to find the area of each shape and add them together.

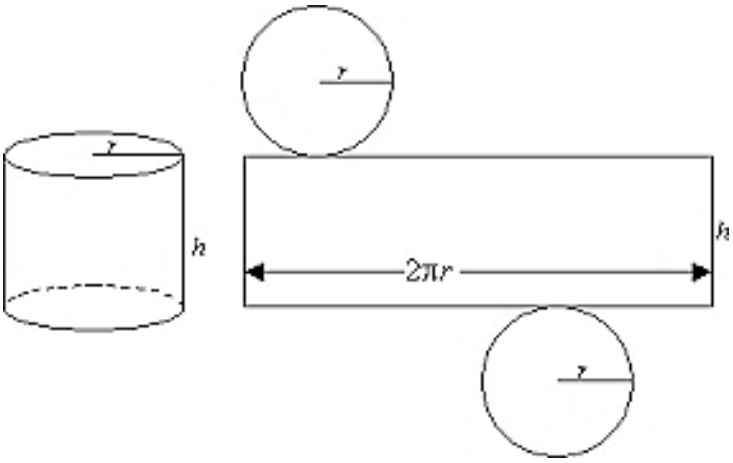
When we flatten a prism into the two-dimensional shapes it is called the *net* of the prism.





Here we can see the net of a rectangular prism. It is made up of 6 rectangles of three different sizes. To find the surface area of a rectangular prism, add together the area of the 6 rectangles.

Find the surface area of this rectangular prism:



We can also find the net of a cylinder. We have the two circles which form the bases and the rectangle which forms the lateral surface, the surface along the sides. Since the rectangles goes all the way around the outside of the circles, it is the length of the circumference of the circles.

Find the surface area of the cylinder if the radius is 5m and the height is 15m:

◆ 2 ◆

Ladies or Tigers?

Many of you are familiar with Frank Stockton's story "The Lady or the Tiger?," in which the prisoner must choose between two rooms, one of which contains a lady and the other a tiger. If he chooses the former, he marries the lady; if he chooses the latter, he (probably) gets eaten by the tiger.

The king of a certain land had also read the story, and it gave him an idea. "Just the perfect way to try my prisoners!" he said one day to his minister. "Only, I won't leave it to chance; I'll have signs on the doors of the rooms, and in each case I'll tell the prisoner certain facts about the signs. If the prisoner is clever and can reason logically, he'll save his life—and win a nice bride to boot!"

"Excellent idea!" said the minister.

THE TRIALS OF THE FIRST DAY

On the first day, there were three trials. In all three, the king explained to the prisoner that each of the two rooms contained either a lady or a tiger, but it *could* be that there were

tigers in both rooms, or ladies in both rooms, or then again, maybe one room contained a lady and the other room a tiger.

1 ◆ The First Trial

"Suppose both rooms contain tigers," asked the prisoner. "What do I do then?"

"That's your hard luck!" replied the king.

"Suppose both rooms contain ladies?" asked the prisoner.

"Then, obviously, that's your good luck," replied the king. "Surely you could have guessed the answer to that!"

"Well, suppose one room contains a lady and the other a tiger, what happens then?" asked the prisoner.

"In that case, it makes quite a difference which room you choose, doesn't it?"

"How do I know which room to choose?" asked the prisoner.

The king pointed to the signs on the doors of the rooms:

I
IN THIS ROOM THERE IS A LADY, AND IN THE OTHER ROOM THERE IS A TIGER

II
IN ONE OF THESE ROOMS THERE IS A LADY, AND IN ONE OF THESE ROOMS THERE IS A TIGER

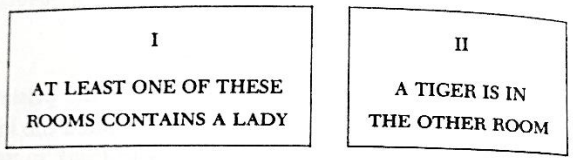
"Is it true, what the signs say?" asked the prisoner.

"One of them is true," replied the king, "but the other one is false."

If you were the prisoner, which door would you open (assuming, of course, that you preferred the lady to the tiger)?

2 • The Second Trial

And so, the first prisoner saved his life and made off with the lady. The signs on the doors were then changed, and new occupants for the rooms were selected accordingly. This time the signs read as follows:



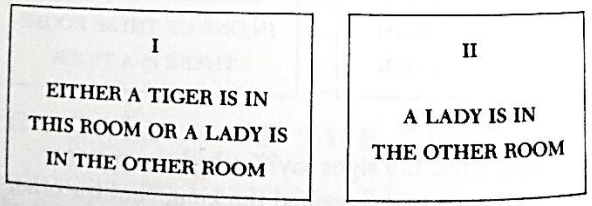
"Are the statements on the signs true?" asked the second prisoner.

"They are either both true or both false," replied the king.

Which room should the prisoner pick?

3 • The Third Trial

In this trial, the king explained that, again, the signs were either both true or both false. Here are the signs:



Does the first room contain a lady or a tiger? What about the other room?

THE SECOND DAY

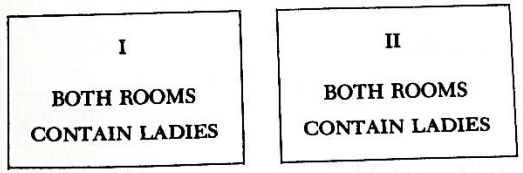
"Yesterday was a fiasco," said the king to his minister. "All three prisoners solved their puzzles! Well, we have five trials coming up today, and I think I'll make them a little tougher."

"Excellent idea!" said the minister.

Well, in each of the trials of this day, the king explained that in the lefthand room (Room I), if a lady is in it, then the sign on the door is true, but if a tiger is in it, the sign is false. In the righthand room (Room II), the situation is the opposite: a lady in the room means the sign on the door is false, and a tiger in the room means the sign is true. Again, it is possible that both rooms contain ladies or both rooms contain tigers, or that one room contains a lady and the other a tiger.

4 • The Fourth Trial

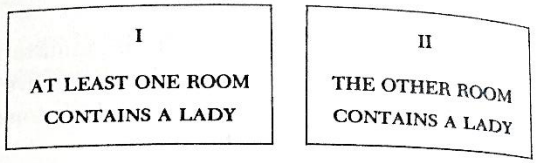
After the king explained the above rules to the prisoner, he pointed to the two signs:



Which room should the prisoner pick?

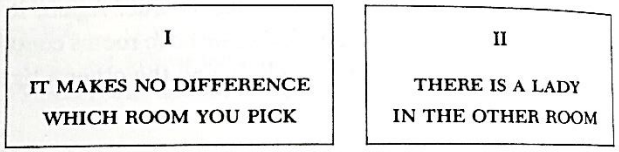
5 ◆ The Fifth Trial

The same rules apply, and here are the signs:



6 ◆ The Sixth Trial

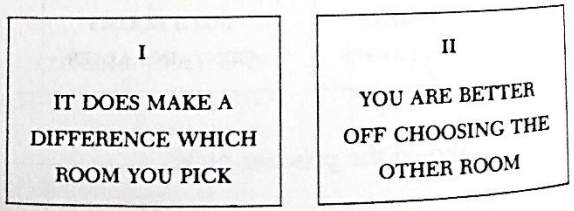
The king was particularly fond of this puzzle, and the next one too. Here are the signs:



What should the prisoner do?

7 ◆ The Seventh Trial

Here are the signs:



What should the prisoner do?

Remote Learning Packet

There is no need to submit this packet at the end of the week. Enjoy your summer break!

Week 9: May 25-29, 2020

Course: Physical Education

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

Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Dearest students,

The year is coming to a close and the summer is almost upon us. For your final week of P.E., before the year officially ends, we want you to begin looking ahead to the summer and to begin setting goals and outlining routines that you would like to continue throughout the summer to stay active, healthy, and continue to grow and develop.

Think back to the goals that you set in week 1 of remote learning, think over what you have learned through attempting to carry out these routines, think about the workouts that we have given you each week. With all this in mind, write down on a piece of paper a revised list of goals and a revised weekly schedule. These are your goals and this is your schedule, they can be exactly the same or completely different as your previous goals/schedule. Feel free to aim high or to keep your goals/schedule very simple and manageable. Be sure to consider how much or how little you wish to do and then consider what the consequences of your choices will be.

Once you have written down your goals and your schedule, find a prominent place to post this schedule, maybe above your desk or on the back of your bedroom door. Put it in a place where you will see it frequently.

Your coaches wish for you a joyful summer and we look forward to seeing you again in the fall.

Stay savage.

Mr. John Bascom
Mr. James Bascom
Mr. Joseph Turner

GreatHearts Irving

Remote Learning Packet

There is no need to submit this packet at the end of the week. Enjoy your summer break!

Week 9: May 25-29, 2020
Course: Nature of Science
Teacher(s): Mr. Brandolini, Mr. Mooney, and Mr. Schuler

Monday, May 25

Happy Memorial Day! No School!

Tuesday, May 26 - Friday May 29

Welcome, dear students, to your last assignment for Nature of Science this year! We began this year of study with Aristotle's words: "*All men by nature desire to know*." How true this is! We have spent the year learning how to *know* things, specifically how to know the *natural world*. First we learned about how we encounter the natural world through our five senses and how we can use them to know things, and then thought about what exactly this "nature" was that we were trying to know. From there we moved on to the three main branches of knowledge about nature: Biology, Chemistry, and Physics.

But what has been *the point* of all this studying? That is, what is the *final cause* of Nature of Science class? The final cause of your study has been to enable you to have a deeper and more profound knowledge of the natural world around you, so that every natural thing--whether it be a rock, or a sunflower, or a chicken in your backyard--is better known and better loved by you.

Today, it is time to take everything that you have learned and put it to practice with one natural, living being of your choosing. Since you will be spending time and care with this living creature, be sure to choose a natural being that you really want to know more deeply. This could be a particular flower in your backyard, or one of the squirrels you see roaming around the neighborhood, or even a beloved pet. Please choose something that is *irrational*--that is, do not observe a human being. So, take a moment to think about which natural being you want to study, and let's get started!

(Note: Since you no longer have your textbook, copies of the relevant pages of your textbook have been attached to the back of this packet. You do <u>not</u> need to read these pages, but you may refer to them if you need a refresher on any idea.)

Step 1: Choose your natural living thing.

What natural being have you chosen to study? _____

First Beginnings of Natural Science

Before you get started, recall to mind the principles for the observation of living beings that we learned many moons ago. **Page 50** of your textbook lists all four. (Note: Since you no longer have your textbook, copies of the relevant pages of your textbook have been attached to the back of this packet. You do not need to read these page

1. Do not _____. Our senses are more awake and more receptive when we are quiet.
2. _____ at what is actually in front of you, and ignore (temporarily) what you may know about the thing. Your knowledge can distract you from noticing what is right in front of you.
3. Look with focus and _____. Isolate one part or one quality of the thing at a time, and spend time observing it before your eye drifts to some other part of quality.
4. Make _____ on paper about your observations while you are observing.

Step 2: Sense Knowledge

What can you know about it from each of your senses (try to use as many as is prudent!)

Sense	**Description**
Sight	
Touch	
Smell	
Hearing	
Taste	

(worksheet continues on the next page)

Step 3: The Ten Categories

Identify the Ten Categories of your natural being.

Category	**Description**
1. Substance - “What is the thing?”	
2. Quantity - “How much/many is it?”	
3. Quality - “What kind of thing is it?”	
4. Relation - “How is the thing related to other things?”	
5. Action - “What does the thing do to other things?”	
6. Passion - “What is being done to thing thing by something else?”	
7. Time - “When is the thing acting or being acted on?”	
8. Place - “Where is the thing?”	
9. Position - “In what position is the thing?”	
10. Possession - “What does the thing have?”	

Step 4: Sketch

Now that you have observed this creature for a time, go ahead and make a sketch of it. Be as detailed as you can!

Step 5: Nature

Does your creature seem to have any "inborn impulse to change"? List anything that your creature seems to be doing "by nature"?

In which category does your creature belong on the Porphyrian Tree? _____

Step 6: The Four Causes

What, in brief, are the four causes of your natural being? **Pages 45-46** offer very helpful definitions and summaries of each of the Four Causes.

Material Cause (What is it made out of?)	
Formal Cause (What is it? Give the essential definition.)	
Efficient Cause (Who/What moves it or brings it into existence?)	
Final Cause (Why does it exist? What is its purpose or goal?)	

Biology

Step 7: Heterogeneity and the Relation of Parts to the Total Form

In this section, let's focus on your creature's heterogeneity and the relation of its parts to its total Form. Look at your creature and consider the following questions: Is your creature heterogenous (made up of multiple parts - **p. 65**)? What are the different parts and how are they different from one another? How does each organ have a form of its own that is suited to its final cause? What is the final cause of each part? What good does it do the creature? For the sake of this exercise, choose three key parts and answer the questions in the spaces below.

Part 1

Name of Part	
What is the part's Final Cause?	
What good does the part do for the whole?	

Part 2

Name of Part	
What is the part's Final Cause?	
What good does the part do for the whole?	

Part 3

Name of Part	
What is the part's Final Cause?	
What good does the part do for the whole?	

In spite of its many material parts (i.e. its heterogeneity), recall that it is actually *one whole* thing. It is not a heap of material that can be reduced to atoms or carbon, but one *natural whole*. Now consider: would your creature be the same thing if it were dead? Why not? What would be missing?

_____
_____
_____
_____
_____
_____

Step 9: Embryology

Imagine how your creature must have grown and changed: has it always been the same thing? At what moment did it start being the kind of thing that it is. Think back to our study of embryology to help you with this question.

a. When it was born/when the seed sprouted
b. When the egg/seed was fertilized (when it was a zygote)
c. When it was a mature creature
d. When there were at least 100 cells
e. When it was a gastrula

Step 10: The Soul

What kind of soul does your creature have? What powers of soul does it clearly have? Do you see specific evidence that it has these powers? **Page 76** lists the kinds of souls (Rational, Perceptive, and Nutritive) and their powers and offers an explanation.

Kind of Soul	**Powers**	**Your evidence that this is the correct soul type**

Chemistry

Step 11: Different Aspects of the Material Cause

Now let's think now about the Material Cause. With living things, the material cause is less important than the formal cause, but it is still one of four causes and is very important! Choose **three** of the following quantities to describe about your creature. You may not be able to be very precise, so you can say things like "about as much volume as a box of tissues," or comparisons like that.

Identify **three** of the following: volume, weight, temperature, mass, density, and inertia.

Quantity	**Description**
Volume: How much space does it take up?	
Weight: How heavy is it?	
Temperature: How hot/cold is it?	
Mass - How much matter does it have?	
Density - How tightly/loosely packed together is the matter?	
Inertia - How much does it resist changes in motion?	

Step 12: Origin of Material Cause

Where do you think the material of your animal came from? How does it relate to the food it ate? What will happen to the material of your creature when it dies?

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Step 13: The Ultimate Particles of Matter

Take a moment to think about your creature in terms of the four elements. Fill out the chart below, gauging how much of each of the four elements your creature seems to be made of (circle or shade each box that applies):

Fire	Almost none in the creature	Very little of this element	Some, but not much	A good amount of this element	Almost entirely made of this element
Earth	Almost none in the creature	Very little of this element	Some, but not much	A good amount of this element	Almost entirely made of this element
Water	Almost none in the creature	Very little of this element	Some, but not much	A good amount of this element	Almost entirely made of this element
Air	Almost none in the creature	Very little of this element	Some, but not much	A good amount of this element	Almost entirely made of this element

How would a modern chemist describe what is happening with your creature at the level of ultimate (atomic and subatomic) particles? Is this description something that you know through your sense alone?

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Physics

Step 14: Motion and Change

Identify an example of each kind of motion in your creature. For some, you may have to imagine something it did in the past or will do in the future (if you cannot observe it happening at the moment).

Kind of Motion	**Example of this Kind of Motion in Your Creature**
Locomotion: a change from place to place	
Increase and Decrease: a change in quantity (size)	
Alteration: a change of quality (e.g. changing color, texture, etc.)	
Substantial Change: a change of substance (note: for a living creature, this only happens at the first moment of life, and at death.)	

Step 15: A Closer Look at Locomotion

Describe your creature's locomotion in detail.

_____

_____

_____

Identify the four causes of its locomotion.

Material	
Formal	
Efficient	
Final	

Conclusion

Congratulations on completing Nature of Science! In one sense, this is the finish line; in another sense, it is only the beginning. The sixth-grade "Nature of Science" class lasts only one year, but the study of the natural world is a pursuit for a whole lifetime! Let us continue, then, with reverence and wonder (and a "sharpshooter" eye!) to observe the natural world around us and to grow in knowledge and love of it.

THE PORPHYRIAN TREE

The "Porphryian Tree" is taken from Porphry's *Isagoge*, a book that has been used for almost 2,000 years to help students understand Aristotle's categories. This tree helps us see, first of all, an ordered arrangement of the different kinds of beings that exist. It is also helpful for understanding that not all substances that exist are material. Comprehending and mastering this tree will be essential for your understanding of the kinds of natural beings that exist.

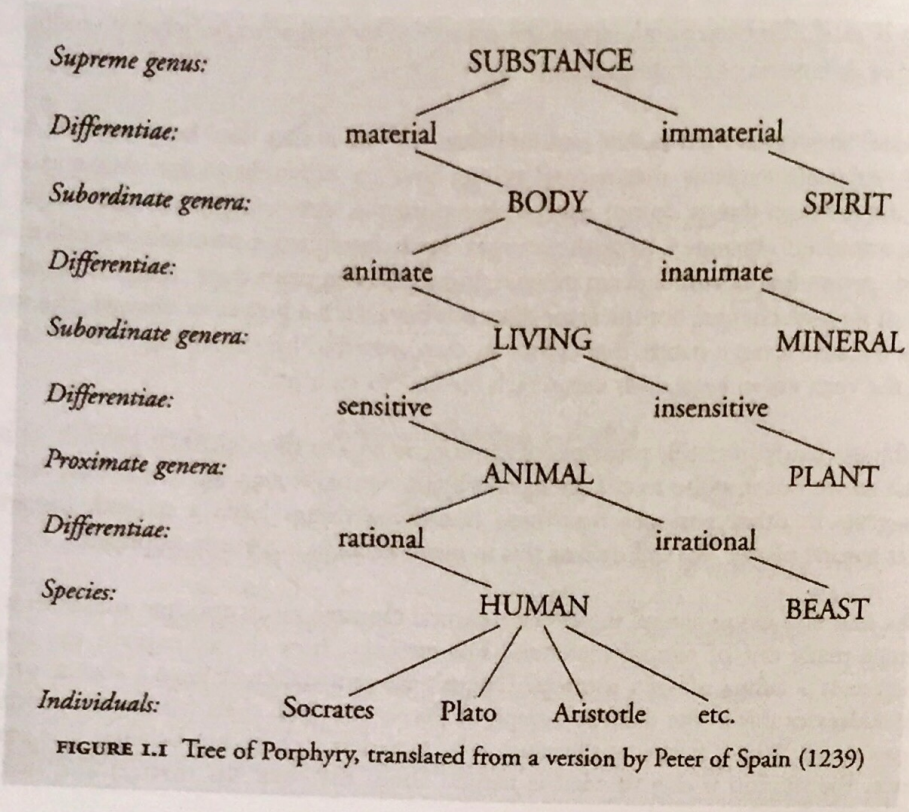


FIGURE 1.1 Tree of Porphyry, translated from a version by Peter of Spain (1239)

All of the terms in capital letters are genera or species, and all of the lowercase terms are differentiae, except for the individual humans at the bottom. To understand the tree, you must know what the terms "genus", "species", and "difference" mean. Genus and species are relative terms, which means that each one is understood in relation to the other.

Genus (from Gk. γενος, meaning "family, clan; ancestor") – a class with more than one species within it, which share something in common with one another.

Humans and beasts are in the genus of animals.

ARISTOTLE'S FOUR CAUSES

In the passage from Book II.3 of the *Physics*, Aristotle is reflecting on what knowledge is, or on what it means for us to say we *know* a thing. As he suggests, having a grasp of the *why* of something is the essential mark of knowledge. He then goes on to list four "causes", which will be explained more below. What does knowledge have to do with causes? It is important to understand that the "causes" Aristotle describes are the causes of beings, i.e., the reasons why certain beings are the way they are. When we ask, for example, "Why does the pen fall to the floor?", the answer begins with "be*cause*…". 'Why' questions are therefore questions that search for causes. When we grasp the causes of a thing, this is what we call *knowing* it in the richest sense.

There are four causes that we should look for when trying to understand something. Here they are summarized in the same order that Aristotle describes them:

1. **The Material Cause** – that out of which a thing is made
2. **The Formal Cause** – the essence or nature of a thing, what a thing is
3. **The Efficient Cause** (moving cause) – (a) the source of a thing's movement or (b) the cause of its existence
4. **The Final Cause** – that for the sake of which a thing exists, its purpose, end, aim, or goal

The causes can also be understood as answers to the following questions about an object:

1. Material Cause – What is it made out of?
2. Formal Cause – What is it? What kind of thing is it?
3. Efficient Cause – Who/what moves it or brings it into existence?
4. Final Cause – Why does it exist? What is its purpose or goal?

We can consider the four causes of almost any object in order to sift through and clarify what we know about it. Take a saw, for instance, and consider its causes.

- The **material cause** of the saw is what it is made out of: the wood, metal, screws, and glue that make it up.
- The **formal cause** of the saw is what it is to be a saw: a tool used by humans for cutting materials by hand. The formal cause is often similar to a definition that might be given of a thing.
- The **efficient cause** of the saw is (a) the person who is using the saw at any given time or (b) the craftsman or machine that built the saw.
- The **final cause** of the saw is to cut things so that they are divided into pieces or made a certain size.

While the object in the case (the saw) is an artificial thing, the four causes are also present in natural things. The study of nature should include an investigation into all the causes of natural beings. When any of the four causes are ignored, the picture of nature that results is somehow incomplete or lacking. Keeping all four causes in mind helps us obtain a much more complete and well-rounded understanding of natural things. As lovers of wisdom, we should seek to know the deepest reasons *why* nature is the way that it is.

Below are the Greek terms that Aristotle uses to describe the causes, which you will need to know:

Material Cause	ὕλη
Formal Cause	οὐσία
Efficient Cause	ἀρχή
Final Cause	τέλος

PRINCIPLES FOR OBSERVING LIVING BEINGS

"The sharp eye notes specific points and differences—it seizes upon and preserves the individuality of the thing…" – John Burroughs

1. Do not speak. Our senses are more awake and more receptive when we are quiet.

2. Look at what is actually in front of you, and ignore (temporarily) what you may know about the thing. Your knowledge can distract you from noticing what is right in front of you.

3. Look with focus and patience. Isolate one part or one quality of the thing at a time, and spend time observing it before your eye drifts to some other part or quality.

4. Make notes on paper about your observations while you are observing.

WHAT TO LOOK FOR

Proper Sensibles

- Colors and their shades
- Smells
- Sounds
- Tastes
- Textures, wetness/dryness, hot/cold

Common Sensibles

- Forms
- Shapes
- Patterns
  - Of color
  - Of texture
- Motion
  - Of the whole
  - Of parts in relation to each other and the whole
  - Natural/Unnatural
  - Externally caused/internally caused
- Behavior
  - Instincts
  - Habits
  - Use of senses

HETEROGENEITY IN ORGANISMS

As we have learned in our study of the heart, lungs, eye, and ear, the material parts of animals are wonderfully complex and diverse. When we observe living substances and their structures, we find that they have parts which are different from each other in kind, working together for the sake of the whole, of which they are parts. For example, our body is composed of different limbs and organs. Our feet are different from our hands, and our ears are different from our livers. Yet all these different parts seem to work in harmony with one another for the sake of the whole body. Proof of the fact that all the different parts have a share in the substance of the whole is easily found: when my hand is injured, I feel that "I" am injured. When my knee hurts, "I" am hurting.

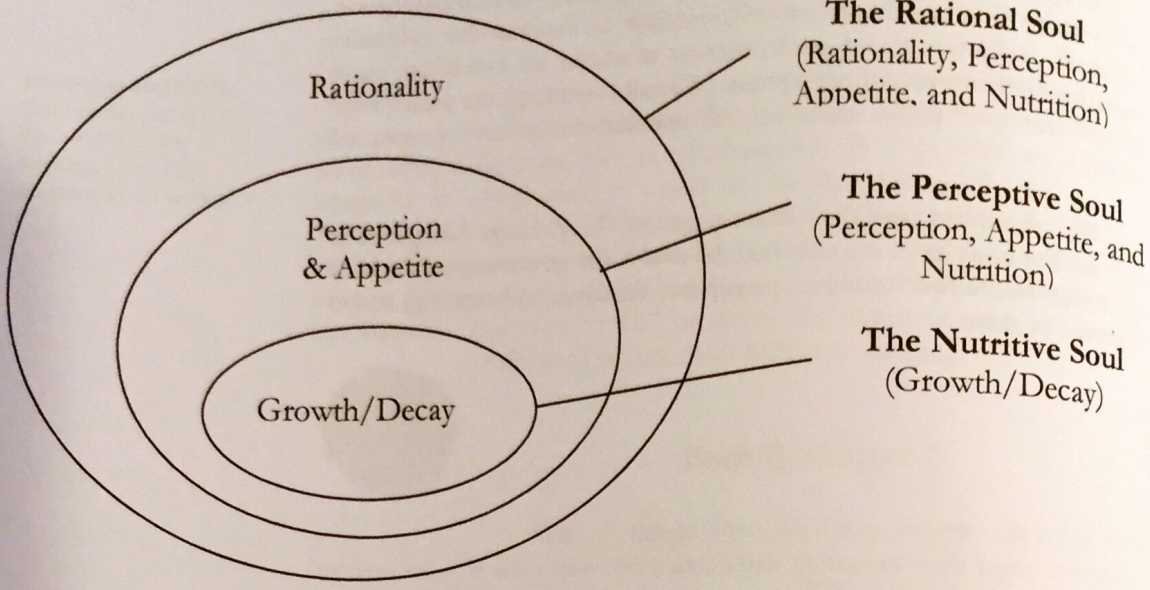
This condition of material bodies is referred to as *heterogeneity*. A part is called heterogeneous when it is composed of multiple material parts which are different in kind from other parts comprising the whole. The hand is heterogeneous – it is made of digits, bones, fingernails, blood vessels, skin, and hair, to name a few. If we look further into one of these parts, we find that they, too, are heterogeneous. For example, my skin is made up of a number of differently formed cells that perform different functions. The keratinocyte is structurally disposed to protect the cells found underneath, by forming a tough surface on the outside of the body. Beneath these are found a number of very elastic cells, among which we find the fibroblasts. These cells play a role in healing wounds quickly and help to form the constructive framework of the body.

So it seems that organisms are replete with heterogeneous parts. At the lowest levels, heterogeneous parts are composed of *homogeneous* parts. A part of a body is homogeneous when each of its parts are uniform, or the same in kind. Aristotle begins his *History of Animals* thus: "Of the parts of animals, some are simple: to wit, all such as divide into parts uniform with themselves, as flesh into flesh; others are composite, such as divide into parts not uniform with themselves, as, for instance, the hand does not divide into hands nor the face into faces." While Aristotle did not grasp the complexity of the parts of flesh (skin) described above, we can still see how flesh is apparently homogeneous.

In reflecting on heterogeneity, we can observe something profound and distinctive about living beings. Without heterogeneous parts, living beings could not be born, grow, and move themselves, i.e., be capable of self-motion. Each distinct part makes possible the life of the whole through its specific function, the work it does. In other words, each part has the health and virtue of the whole body for a final cause. This is why complex parts of bodies are called *organs* (ὀργανος, which means "instrument, tool") and why living beings are called *organisms*.

This relationship between organs and organisms draws us to reflect on another part/whole relationship. Just as the unique parts of the body are oriented towards the health of the whole body, so also are individual persons – united by a common human nature – oriented towards the same end. Of course, the greatest difference in this analogy is the fact that we, as living substances and persons, are not physically parts of a larger body, but are free and self-determining with respect to our efficient causes. This is not true of the parts which make us up. One of the greatest of human intellectual and moral activities (if not *the* greatest) is our attempt to better understand man's final cause.

KINDS OF SOULS AND THEIR POWERS



The diagram above shows the powers of the soul Aristotle discusses in Book II of *On the Soul.* The higher kinds of souls contain the powers (abilities) of the lower kinds and more. The perceptive soul contains the power of nutrition within it, since animals certainly eat and nourish themselves in addition to perceiving. The rational soul contains within it the powers of perception and nutrition, for man is also capable of sensing and growing like other animals. The souls are traditionally named according to their highest power.

One important point to note is that each living thing has only one soul. Man does not have three souls; he has only one. Since the soul is the source and cause of life in living things, to think that a man or a dog has multiple souls would be very much like saying that he has multiple lives. But this is an offense to reason. The soul is what unifies, directs, and forms all the parts and powers of a living thing such that it is a single, organized whole.

What about the ability to move oneself from one place to another, called locomotion? While most animals have the power to locomote, not all animals have it. Some plants also seem to behave as though they are moving from place to place. We cannot, therefore, use locomotion to distinguish animals from plants. Nonetheless, an animal's ability to locomote seems closely related to all its other powers: when an animal *perceives* food at a distance and *senses* its own hunger, how fitting that it also has the power to *traverse* the distance in order to *nourish* itself.