What is medical terminology?
- The language of healthcare
- Used to describe objects and situations that are encountered in medicine

How does Medical Terminology Work?
- Medical terminology always contains three parts
  - Prefix: beginning of the word
  - Root word: primary part of the word
  - Suffix: end of the word
- Knowing this parts can allow you to figure out what a word means.

What are the meanings of each of these prefixes/suffixes/root words?
- a/an  not
- Bi/di/diplo  two
- Dermis  SKIN
- Itis  inflammation
- Ology  study of
- Card  heart
- Lith  stone
- Hyper  above/more
- Hypo  below/less
- Tonic  water
- Cytosis  cell
- Endo  inside
- Exo  outside
- Epi  above
- Intra  inside
- Venous  vein
Many scientists, people and groups have contributed to the study of Anatomy. Around 20,000 to 400,000 years ago the Neanderthals’ DNA was analyzed. Scientists believe humans and Neanderthals crossbred producing fertile offspring, most people will show 2-4% Neanderthal DNA. Scientists believe crossbreeding occurred with little to no successful fertile offspring and DNA evidence comes from a common African ancestor. The Mayans and Aztecs also contributed to the study of anatomy. The Mayans contributed many healing practices, medicines, homeopathic medicines and practices such as acupuncture, cupping, and massage. The Aztecs Believed illness was punishment and there was no hope/cure. They treated illnesses with herbal treatments, but only treated the symptoms, not the disease or cause. They also splinted broken bones. Hippocrates who lived from 460-375 BC was the Father of Modern Medicine and created the Hippocratic Oath that is still used today in medical schools. Aristotle who lived from 384-322 BC and was responsible for trying to organize organisms into groups. We call this the hierarchy of organization. All of these people or groups of people were involved in the early understands of Anatomy.

During the AD times, due to technological advances we began to learn more about Anatomy. This started with Claudius Galen who lived from 129-199 AD. He was a physician to the Roman gladiators and dissected animals to learn about anatomy. From these learnings, he wrote a textbook. Ibn Sina (980-1037 AD) was also responsible for writing a textbook. This textbook is still used in European Medical Schools. Andreas Vesalius (1514-1564) also published work. He published accurate illustrations for anatomy based on cadaver dissections he completed in medical school. He is called the Father of Modern Anatomy. From 1578-1657, William Harvey was alive and proved the existence of capillaries. He is considered the Father of Physiology because he explained how blood was pumped and recycled to and from the heart. The next few scientists are responsible for their contributions to the learning about cells.

Robert Hooke (1635-1703) was the first person to see a dead cell by examining cork. He even coined the term cell. Later, Anton can Leeuwenhoek (1632-1723) was the first person to see living cells under a microscope. Later after microscopes were developed, the cell theory was created. Matthias Schleiden (1804-1881) was one of the co-founders of the cell theory. He discovered that all plants are made of cells. Theordor Schwann (1810-1882) was the other co-founder of the cell theory. He discovered that all cells are made of animal cells. He also is responsible for identifying Schwann cells in the nervous system. All of this was made possible because of microscopes.

Carl Zeiss (1816-1888) was responsible for creating and manufacturing many medical devices including microscopes. His company is still inventing and selling medical devices and scopes to this day. Ernst Abbe (1840-1905) was Carl Zeiss’s business partner. He is responsible for creating the optical formula to allow us to see sharper images. Besides looking at the microscopic portions of cells, scientists also looked at the macroscopic portion of Anatomy.

Frances Bacon (1561-1623) was responsible for the promotion of the scientific method. He believed that the universe was a problem to be examined and solved to expose all secrets that were hidden. Rene Descartes (1596-1650) identified that the point of contact for the body and soul was the pineal gland. Claude Bernard (1813-1878) discovered the role of pancreas in digestion, glycogenic function of the liver, and regulation of blood supply by vasomotor nerves. His biggest contribution was the concept of homeostasis. Walter Cannon (1871-1945) expanded on this idea of homeostasis. He is responsible for discovering and coining the term “fight or flight”. Some topics that were discovered are major topics that students study in high school today.

Some scientists were responsible for concepts in biology that we still study today. Gregor Mendel (1822-1884) used pea plants to study genetics. He determined the meaning of dominant and recessive traits and found patterns of heredity. He is called the Father of Modern Genetics. Charles Darwin studied finches on the Galapagos Islands. He is responsible for the Theory of Evolution and the
Theory of Natural Selection. Watson and Crick in the 1950’s used Rosalind Franklin’s picture of DNA to determine the structure of DNA that we still use today.

There were also some artists that are responsible for our understanding of Anatomy. These are Michelangelo and Leonardo di Vinci. Michelangelo perform public dissections that led to detailed anatomy sketches. He painted body parts in his paintings. Leonardo di Vinci (1452-1519) drew very accurate anatomical dissections due to autopsies he conducted. His findings were used to determine how muscles and bones work together.

As you can see, the field of anatomy has had many contributors. They range from groups of people to scientists to artists. All of this information collectively allowed us to learn about Anatomy today.
Task 1

Next to each of the scientists below, write the correct number of what each scientist contributed to the field of Anatomy and Physiology. Each scientist should have 2 numbers next to their name.

A. Neanderthals
B. Antony van Leeuwenhoek
C. Aztecs
D. Frances Bacon
E. Carl Zeiss
F. Watson and Crick
G. Robert Hooke
H. Mayans
I. Claudius Galen
J. Leonardo DiVinci
K. Rene Descartes
L. Hippocrates
M. William Harvey
N. Ernst Abbe
O. Theodor Schwann
P. Aristotle
Q. Charles Darwin
R. Claude Bernard
S. Walter Cannon
T. Michelangelo
U. Matthias Schleiden
V. Gregor Mendel
W. Ibn Sina
X. Andreas Vesalius

1. Hunter/gatherers
2. Cupping
3. First to invent the microscope
4. Wrote a medical textbook that became the leading, respected authority in European Medical Schools.
5. Acupuncture
6. Oath is used by all doctors who graduate medical school
7. Analysis of DNA led to two theories one of which was that humans all have a common ancestor in Africa.
8. Identified themes in nature
9. Splinted broken bones
10. Is responsible for the first hierarchy of organization
11. Wrote noteworthy medical textbook that was used for the next 1000 years
12. Dissected animals to learn about anatomy
13. Father of Medicine
14. Believed illness was a punishment
15. Coined the term “fight or flight response” to explain his theory.
16. Many doctors believed his textbook was better than Aristotle and Galen.
17. Taught that the blood was pumped and recycled from and back to the heart.
18. Scientific method
19. Predicted existence of capillaries
20. Father of modern anatomy
21. Theory of Evolution
22. Saw living cells
23. Drew some of the most accurate anatomical sketches of his time due to his expertise in dissections and autopsies.
24. Invented scanning and transmission microscopes
25. His company still sells medical devices today
26. Glycogenic function of the liver
27. Gave cells their name
28. Improved the use of compound microscopes
29. Co-founder of the cell theory
30. Saw first dead cell
31. Determined the importance of the cell’s nucleus
32. Performed public dissections that led to VERY detailed anatomy sketches
33. 1st to publish accurate illustrations for anatomy
34. 1st to use x-rays in physiological studies
35. Discovered the structure of DNA
36. Discovered the optical formula
37. Wanted to expose all hidden secrets of the universe
38. Used body parts in his famous paintings
39. Identified the pineal gland
40. Sought to uncover the meaning of the natural world with a scientific, rational approach
41. Isolated the first enzyme (pepsin)
42. Father of modern genetics
43. A second co-founder of the cell theory
44. Theory of Natural selection
45. Role of pancreas in digestion
46. Worked with pea plants to determine dominant and recessive traits
47. Used Rosalind Franklins work as a guide
48. His findings helped to determine how muscles and bones worked.
History of Anatomy

Task 2

Explain what the world of Anatomy and Physiology would have been like if each scientist had not contributed what they did to the field of study. You need at least 3 sentences for each scientist below.

A. Neanderthals

B. Antony van Leeuwenhoek

C. Aztecs

D. Frances Bacon

E. Carl Zeiss

F. Watson and Crick

G. Robert Hooke

H. Mayans

I. Claudius Galen

J. Leonardo DiVinci

K. Rene Descartes

L. Hippocrates
M. William Harvey

N. Ernst Abbe

O. Theodor Schwann

P. Aristotle

Q. Charles Darwin

R. Claude Bernard

S. Walter Cannon

T. Michelangelo

U. Matthias Schleiden

V. Gregor Mendel

W. Ibn Sina

X. Andreas Vesalius
Next to each of the prefixes and suffixes below, write what each means.

- a/an
- Bi/di/diplo
- Dermis
- Itis
- Ology
- Card
- Lith
- Hyper
- Endo
- Exo
- Hypo
- Tonic
- Cytosis
- Epi
- Itis
- Intra
- Venous

Next to each word below write what the word means. Be sure to use the suffixes and prefixes in order to find their meaning. Do not look this up in the dictionary or on the internet.

- Endocytosis
- Exocytosis
- Hypertonic
- Hypotonic
- Dermatology
- Cardiology
- Dermitis
- Intravenous
- Biology
- Endocarditis