Scientific Revolution: Chart of Scientists

- From the following information create a chart for the information about each scientist. Include columns on the area of science, traditional belief (before), experiments, new idea, and reactions.
- Include illustrations/icons that represent the main idea/achievement (~one per scientist)
- The chart is to be neat and in ink!
- The descriptions are to be in note form, summarizing the information on this handout and from the book.
- The last entry in your chart will be your choice from the 3 scientists at the bottom of this page. Use TCI chapter 34.7 as a source for information.

**William Harvey (1578 – 1657)**

William Harvey’s research is considered the origin of physiology, the study of how the human body functions. Before Harvey’s experiments, the traditional belief was that food is turned into blood in the heart. Arteries and veins were considered to be empty, serving as air tubes. Harvey’s experiments showed that a bound artery would fill the blood in the section nearer to the heart, while the portion away from the heart would empty if the artery was bound. From these experiments, Harvey thought that the same blood is constantly recycled through the heart. He hypothesized that arteries and veins carried the blood to and from the heart, which acts like a pump. Many physicians were unwilling to accept the idea that blood was constantly being re-circulated through a system of arteries and veins.

**Nicolaus Copernicus (1473 – 1543)**

Nicolaus Copernicus’ theories provided the foundation of modern astronomy, the study of planets. The traditional belief was that the earth was the center of the universe. The earth was said to stay fixed in a permanent place with the sun and the other planets revolving around earth. Copernicus spent years mapping the locations of the planets using complex mathematical calculations. Through these careful observations, Copernicus found that the earth and other planets revolve around the sun. This is known as the Heliocentric Theory (helio=sun, centric=center). His ideas were rejected by most people, especially the Catholic Church who claimed that the earth and humans were the central feature of the universe. The church declared Copernicus as a heretic.

**Andreas Vesalius (1514 – 1564)**

Andreas Vesalius proved wrong many ancient ideas about human anatomy and his research helped begin the modern sciences of anatomy and physiology. Previously, most research on human anatomy was done by studying dead animals because it was considered a
sin to dissect dead human bodies. Vesalius felt that dissection of human bodies was necessary to completely understand human anatomy. Through his research, he dissected large numbers of human bodies and made precise sketches of what he found. His ideas and practices were accepted by many but he wrote a book to defend his ideas against a few powerful and vocal critics.

**Galileo Galilei (1564 – 1652)**

Galileo Galilei invented the telescope which led to a series of important astronomical discoveries (Jupiter had moons, the sun had large spots, visual proof of Copernicus’ Heliocentric Theory). Prior to Galileo’s invention, it was through that celestial bodies (moon, planets, stars) are perfect spheres made up of a type of gas called ether. Galileo felt that only through precise observation can one determine what celestial bodies were made of. Galileo used his personally built telescope and observed that the moon was not smooth, but had numerous craters and high mountains. Church officials refused to accept his claims. They said that what appeared in the lens of the telescope were optical illusions. Galileo’s books were placed on the Index of Prohibited Books by the Church and the Inquisition condemned his ideas and confined him to house arrest for the last years of his life.

**Isaac Newton (1643 – 1727)**

Isaac Newton’s theories created the foundation for many scientific fields, including astronomy, engineering and physics. Before Newton’s experiments and observations, spirits and divinities were thought to be in control of the movements of planets. Newton used complex mathematics to demonstrate that any two objects in the universe pull toward each other. He found that the same force that pulls an object to hear, like an apple falling to the ground, keeps the moon and planets in orbit around the sun. His theories were generally accepted by other scientists and Newton was praised by England’s queen.

**Evangelista Torricelli -or- Daniel Fahrenheit -or- Antoine van Leeuwenhoek**

(Use TCI ch. 34)
- or- **Rene Descartes & Sir Francis Bacon** (together) Holt 13.3

Research on your own and enter the data into the correct places on your Scientist Chart.

WRITE DOWN ALL CHART INFO (NAMES, CATEGORIES, DATA, ETC.) IN INK!!!