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| **Nicolaus Copernicus**  **Born February 19, 1473 – Died May 24, 1543**  Have you ever heard the expression “**Renaissance** man?” This term describes a person who is very good at many different things. Nicolaus Copernicus was not only an astronomy genius. He was also a mathematician, a church judge, a doctor, a translator, an artist, an official in the Catholic Church, a governor, a diplomat, and an economist. He spoke German, Polish, and Latin, and understood Greek and Italian.  Family and studies  Copernicus was born February 19, 1473 to wealthy parents who both died when he was young. He and his siblings were adopted by his rich and powerful uncle. He studied mathematics and **astronomy** at the University of Krakow from 1492 to 1496. While there he changed his original last name, Koppernigk, to its Latin version. Latin was the common language of scholars at the time. Copernicus also studied law and medicine in Italy. The journey from Poland to Italy took two months by foot and horseback. But the universities in Italy were some of the best in the world at the time. As a student, Copernicus began to question what he was taught. His professors taught him Aristotle’s and Ptolemy’s views: the Earth was at the center of the Universe. It did not move. Copernicus began to develop his theory that the Sun was at the center of the universe while he was a student.  Life at the cathedral  Copernicus became **canon** of Frombork cathedral in 1497. He had many duties as canon. These included mapmaking, collecting taxes, serving as a secretary, and practicing medicine. He continued his study of the skies. He made astronomical observations from his tower apartment. Copernicus didn’t have a telescope, because the telescope hadn’t been invented yet. Instead, he looked through a simple metal tube. He also had a device that looked like two wooden yardsticks joined together. He used it to measure the angles of stars and planets in the sky. Based on his observations, he wrote a short report in which he explained his **heliocentric** theory. Copernicus confidently said that the Earth both turned on its axis and orbited around the Sun.  A heliocentric theory  It took Copernicus 16 years to write his masterwork on astronomy. Even then, he didn’t want to publish it. He was afraid of the huge controversy it would create. He also wanted time for more research. Finally, a mathematician friend convinced Copernicus to publish the book. He was 68. The book was called *On the Revolutions of the Celestial Spheres*. In it, Copernicus described the shape of the Universe. He provided a diagram to help readers. In the diagram, we see the Sun at the center. Orbiting around the Sun are the planets, including Earth. On the outside are the fixed stars. Copernicus’s theory can be summarized like this:  The center of the Earth is not the center of the Universe, only of Earth’s gravity and the moon. The Sun doesn’t move, and all other spheres revolve around the Sun. Earth has more than one motion. It turns on its axis and moves in a spherical orbit around the Sun. The stars appear to move, but really it is the Earth that is moving.  Death and legacy  Legend says that Copernicus was on his deathbed when his great work was published. He woke from a coma to see and appreciate his accomplish­ment. He died peacefully on May 24, 1543. He didn’t live to hear any praise or criticism of his ideas. The Catholic Church banned Copernicus’s book more than 70 years later. It also banned any other book that agreed with Copernicus’s heliocentric argument — Galileo Galilei’s for example.  Copernicus’s heliocentric model wasn’t widely accepted for hundreds of years. Isaac Newton’s laws of gravity helped to confirm Copernicus’s theories. The laws explained why planets would orbit the Sun and not the Earth. Because the Sun is much larger, the pull of its gravity is stronger. It appears that the Sun rises each morning and sets every night. But really, it is the Earth, not the Sun, that is moving. Copernicus asked people to give up thinking that they lived in the center of the Universe. For him, the idea of the Sun shining on. |

**Vocabulary Word Bank**

**Renaissance:** A period in European history that saw a rebirth in learning, particularly in science.

**Astronomy**: Science that studies space, stars, and planets.

**Canon**: An individual who lives in a religious community, such as a monk.

**Heliocentric**: A view of the universe that puts the Sun at the center of our solar system.

