

NAME:

BLOCK:

THE SCIENTIFIC REVOLUTION
THE AMBASSADORS

CENTRAL HISTORICAL QUESTION
HOW REVOLUTIONARY WAS THE SCIENTIFIC REVOLUTION?

DIRECTIONS: Read the excerpt below and then watch the video in the provided link. When completed respond to the following guiding question.

The Ambassadors (1533) is a painting by Hans Holbein the Younger in the National Gallery, London. As well as being a double portrait, the painting contains a still life of several meticulously rendered objects, the meaning of which is the cause of much debate.

VIDEO LINK: <http://www.youtube.com/watch?v=PQZUIGzinZA>



GUIDING QUESTION: WHAT DOES THIS IMAGE SAY ABOUT THE RELATIONSHIP BETWEEN THE INDIVIDUAL & RELIGIOUS AUTHORITY? WHY?

THE SIGNIFICANCE OF THE SCIENTIFIC REVOLUTION

The science of the middle ages was significant in establishing a base for modern science. The Marxist historian and scientist J. D. Bernal asserted "the renaissance enabled a scientific revolution which let scholars look at the world in a different light. Religion, superstition, and fear were replaced by reason and knowledge". James Hannam says that, while most historians do think something revolutionary happened at this time, "the term 'scientific revolution' is another one of those prejudicial historical labels that explains nothing. You could call any century from the twelfth to the twentieth a revolution in science" and that the concept "does nothing more than reinforce the error that before Copernicus nothing of any significance to science took place".^[13] Despite some challenges to religious views, however, most notable figures of the scientific revolution—including Nicolaus Copernicus, Tycho Brahe, Johannes Kepler, Galileo Galilei, Francis Bacon, René Descartes, Isaac Newton and Gottfried Leibniz—were devout in their faith. Some scholars see a direct tie between Christian metaphysics and the rise of science.

This period saw a fundamental transformation in scientific ideas across mathematics, physics, astronomy, and biology in institutions supporting scientific investigation and in the more widely held picture of the universe. The scientific revolution led to the establishment of several modern sciences. In 1984, Joseph Ben-David wrote:

Rapid accumulation of knowledge, which has characterized the development of science since the 17th century, had never occurred before that time. The new kind of scientific activity emerged only in a few countries of Western Europe, and it was restricted to that small area for about two hundred years. (Since the 19th century, the rest of the world has assimilated scientific knowledge).

Many contemporary writers and modern historians claim that there was a revolutionary change in world view. In 1611 the English poet, John Donne, wrote:

[The] new Philosophy calls all in doubt,

The Element of fire is quite put out; The Sun is lost, and th'earth, and no man's wit Can well direct him where to look for it.

Mid-20th century historian Herbert Butterfield was less disconcerted, but nevertheless saw the change as fundamental:

Since that revolution turned the authority in English not only of the Middle Ages but of the ancient world—since it started not only in the eclipse of scholastic philosophy but in the destruction of Aristotelian physics—it outshines everything since the rise of Christianity and reduces the Renaissance and Reformation to the rank of mere episodes, mere internal displacements within the system of medieval Christendom.... [It] looms so large as the real origin both of the modern world and of the modern mentality that our customary periodization of European history has become an anachronism and an encumbrance.

More recently, sociologist and historian of science Steven Shapin opened his book, *The Scientific Revolution*, with the paradoxical statement: "There was no such thing as the Scientific Revolution, and this is a book about it."^[19] Although historians of science continue to debate the exact meaning of the term, and even its validity, the scientific revolution still remains a useful concept to interpret the many changes in science itself.

THE SCIENTIFIC REVOLUTION SCALE

On the scale below, rate how revolutionary the Scientific Revolution was based on the reading excerpt.

NOT VERY

SOMEWHAT

VERY

1

2

3

4

5

6

7

8