

Faithful Scientists - Catholic contributions to science throughout history
2021 Foundations - Lesson Plan - St. Augustine High School
Jessica Brophy, Michael Jezewak, Brian Wallace

Topic: This lesson will focus on the Catholic contribution to science in an effort to help dispel the conflict theory between Faith and Science.

Methods:

The project will focus on 16 individual Catholic Scientists. Each group will choose a scientist from a list of prominent Catholic Scientists. The presentations will be set up in the commons and should include a poster or other prominent visual aid. The following are recommended:

- ☐ Video
- ☐ Poster board
- ☐ Table with scientific props/ visuals related to their work on display
- ☐ Group member(s) dressed the part of their chosen scientist

Other students, faculty, and possibly members of the Scientific community will be walking through the presentation areas. A 2-3 minute script should be prepared to help highlight the significance of their Catholic Scientist using the guidelines specified in the “content” section of the rubric below.

Each project will be judged by their teacher (s) and the projects will be in competition with their peers for a prize/extra credit. A bracket format will be used for judging.

Essential Questions:

1. How have leading Catholic intellectuals served as models for Catholic engagement of science today?
2. What specific scientific contribution did the scientist bring forward through the work in their scientific field?
3. How do these contributions help dismantle the myth that the Catholic Faith is in conflict with science?

Skills:

- Students will better understand how it is possible to examine and find meaning in sacred scripture while recognizing and embracing scientific truths and theories.
- Students will be better prepared to confront the false narrative that tries to pit science and faith against each other.
- Students will improve presentation skills through this project based lesson.
- Students will improve their ability to discuss complicated topics within small groups.

Knowledge:

- Students will examine and better understand the significant contributions of Catholic Scientists.
- Articulate the ways in which science and religion can collaborate to arrive at a greater understanding and appreciation of the created world.

Assessment:

Presentation Rubric

Content	40%
<ul style="list-style-type: none">- Background info: years of birth and death, religious order or practice- Contribution to their scientific field- Developments in their field that built off of their contribution- The way this person's contributions were inspired by their faith and how that breaks down the myth that science and faith are not compatible.- How the Church supported their scientific inquiry- 1 quote from the scientist	
Verbal Presentation	40%
<ul style="list-style-type: none">- Engaging speech- Thorough understanding of their topic and scientist	
Visual Aids	20%
<ul style="list-style-type: none">- Historically appropriate costume- Poster / props- Items to handout to audience	

Standards:

Bishops standard:

III. Understanding Scripture

D. The Bible in relation to science and history (CCC, nos. 37, 159, 1960).

2. There can be no conflict between religious truth and scientific and historical truth (CCC, no. 159).

Particulars:

When ? During homeroom - spring semester

Who? Juniors - Christian Vocations Class

Where? St. Augustine Commons

Resources:

Catholic Scientists

Fields of science:

1. Astronomy
 - a. Galileo Galilei (1564-1642) Catholic layperson, heliocentrism
 - b. Christopher Scheiner (1573-1650) Jesuit Priest, sunspots
2. Biology
 - a. St. Hildegard of Bingen (1098-1179) Nun, Abbess, Naturalist: Botany, Zoology, Medicine, considered one of, if not the, first female scientists in Western civilization
 - b. Gregor Mendel (1822- 1884) Augustinian Priest: Founder of Genetics
 - c. Louis Pasteur (1822-1859) layperson, vaccination, microbial fermentation, and pasteurization
 - d. St. Albert the Great (1200-1280) Dominican Priest, Bishop, teacher of St. Thomas Aquinas. He emphasized in his writings the importance of an experimental approach to science.
3. Biochemistry
 - a. Miriam Michael Stimson (1913-2002) Dominican Sister, Using the method of ultraviolet analysis of DNA that she pioneered, James Watson and Francis Crick would discover its double helix structure
 - b. St. Giuseppe Moscati (1880-1927) Catholic layperson, diabetes researcher
4. Computer Science
 - a. Sr. Mary Kenneth Keller (1913-1985) Sister of Charity of the Blessed Virgin Mary, first PhD in computer science in the US
5. Cosmology
 - a. Copernicus (1473-1543) Catholic layperson, proposed the heliocentric universe
 - b. Nicholas of Cusa (1401-1464) Priest, Bishop, Cardinal, proposed an infinitely large universe
6. Empiricism
 - a. Roger Bacon(1220-1292) Franciscan priest, encouraged the study of the natural world through empiricism and experimentation
7. Geolog
 - a. Nicolas Steno (1638-1686) Priest, Bishop, origin of fossils and of sedimentary rock
8. Physics
 - a. Georges Lemaître (1894-1966) priest, founder of the Big Bang Theory
 - b. Robert Grosseteste (1168-1253), Bishop, study of optics (behavior of light)
 - c. Laura Bassi (1711-1778) laywoman, advancement in many areas of physics, second woman in history to receive a European university degree

Vocabulary chart:

Scientism: belief that there only truths are those which can be verified by the scientific method
God of the gaps (neglects the explanatory power of empiricism) vs. science of the gaps (oversteps the boundaries of empiricism)

Gospel of Creation: From Laudato Si, Francis invites the people of God to see the creation stories of Genesis as an act of God that is based on God's design for all of creation, not just human beings

Creation: the foundation of "all God's saving plans," the "beginning of the history of salvation"¹¹⁷ that culminates in Christ. Conversely, the mystery of Christ casts conclusive light on the mystery of creation and reveals the end for which "in the beginning God created the heavens and the earth": from the beginning, God envisaged the glory of the new creation in Christ.¹¹⁸ (CCC, 280)

Beginning: the eternal God gave a beginning to all that exists outside of himself (CCC,290)

Primary cause: Thomas Aquinas (c. 1225–1274) refers to God as the "Primary Cause" of the being of everything;

Secondary cause: Aquinas refers to creatures as "secondary causes" whose activity reaches particular aspects and depends on divine action.

Introductory Activity:

Corners of the Room activity - have students go to one side of the room or the other to indicate whether or not they believe the statement is true or false (put statements in ppt)

- Science is a collection of facts about the world.
- Christianity is compatible with science.
- The theory of evolution contradicts the truth of Scripture.
- The theory of evolution
- Science has proven the truth of Christianity.
- Religion and science attempt to answer the same questions.
- Science was invented to discredit the Bible.

SAMPLE Presentation: Write a script

- Founder of the Vatican Observatory - show how the Catholic Church as an institution has supported scientific investigation