

Mariology: Scientific Aspects

Note: Having been a Catholic educator and student K-12, I thought it might be fun to explore this. Here's a lesson plan with activities for three 50-minute periods, focusing on the scientific aspects of Mariology while applying the PRISM Framework. -Miguel Guhlin



QUESTIONS

SENTENCE STEMS

PATTERNS - WHAT PATTERNS DO YOU SEE?

- What recurring themes appear across different Marian apparitions?
- How do reported miraculous phenomena associated with Mary manifest in various cultures?
- What common elements are found in scientific investigations of Marian artifacts?
- "The pattern I notice in Marian apparitions is..."
- "Across different cultures, Mary's presence seems to be characterized by..."
- "Scientific investigations of Marian phenomena consistently show..."

REASONING - HOW DO THINGS FIT TOGETHER?

- How do theological interpretations of Mary's role align with scientific observations?
- What connections can be drawn between Marian devotion and reported miraculous events?
- How do different aspects of Mariology (e.g., apparitions, artifacts, devotions) interrelate?
- "The theological concept of Mary's role connects to scientific findings because..."
- "Marian devotion and reported miracles are linked in that..."
- "When we consider multiple aspects of Mariology, we can conclude that..."

IDEAS - WHAT DIFFERENT IDEAS CAN WE MIX?

- How might interdisciplinary approaches enhance our understanding of Marian phenomena?
- What new perspectives emerge when combining theological and scientific views on Mary?
- How could modern technology contribute to the study of historical Marian artifacts?
- "By combining theology with scientific methods, we could explore..."
- "A fresh perspective on Mariology emerges when we consider..."
- "Applying modern technology to Marian studies might reveal..."

SITUATION - WHAT'S THE BIGGER PICTURE?

- How does the study of Mariology impact broader religious and cultural contexts?
- What societal factors influence the perception and investigation of Marian phenomena?
- How does the scientific study of Marian events relate to wider discussions on faith and reason?
- "The broader implications of Marian studies for religious dialogue are..."
- "Societal attitudes towards science and faith affect Mariology by..."
- "In the larger context of faith and reason, Marian phenomena contribute to..."

METHODS - HOW CAN WE CHECK OUR ANSWERS?

- What scientific protocols could be developed to investigate claims of Marian apparitions?
- How can we ensure objectivity in studying both the religious and scientific aspects of Mariology?
- What criteria should be used to evaluate the authenticity of reported Marian miracles?
- "To rigorously investigate Marian phenomena, we could..."
- "An objective approach to studying both religious and scientific aspects of Mariology might involve..."
- "We can assess the credibility of reported Marian events by..."

Day 1: Introduction and Our Lady of Guadalupe

Introduction (10 minutes)

- Briefly introduce the topic of Mariology and its scientific aspects.
- Explain the PRISM Framework and how it will be used throughout the lessons.

Our Lady of Guadalupe Case Study (30 minutes)

- Present the story of Our Lady of Guadalupe and Juan Diego.
- Discuss the scientific aspects of the tilma:
 - Durability of cactus fibers
 - Survival through fire and bomb incidents
 - Consistent temperature maintenance

Activity: Fabric Degradation Experiment (10 minutes)

- Divide students into groups and provide each with different fabric samples.
- Have students design an experiment to test fabric degradation over time.
- Students will set up their experiments and make initial observations.

Day 2: Our Lady of Fatima and Scientific Analysis

The Miracle of the Sun at Fatima (20 minutes)

- Present the events of the Fatima apparitions, focusing on the Miracle of the Sun.
- Discuss various scientific theories explaining the phenomenon.

Activity: Optical Illusions and Sun Gazing (20 minutes)

- Demonstrate safe methods to observe the sun (e.g., pinhole projectors).
- Show examples of optical illusions related to light and perception.
- Discuss how these might relate to the Fatima event.

PRISM Analysis (10 minutes)

- Guide students through a PRISM analysis of the Fatima event:
 - Patterns: Similar reports from multiple witnesses
 - Reasoning: Connecting eyewitness accounts with possible explanations
 - Ideas: Brainstorming alternative scientific explanations
 - Situation: Historical and cultural context of the event
 - Methods: Discussing how to scientifically investigate such claims

Day 3: Non-European Apparitions and Scientific Investigation

Case Studies: Kibeho and Akita (20 minutes)

- Present brief overviews of the Kibeho (Rwanda) and Akita (Japan) apparitions.
- Discuss any reported physical phenomena associated with these events.

Activity: Designing a Scientific Investigation (20 minutes)

- In groups, have students design a protocol for investigating claims of miraculous phenomena.
- Encourage them to consider:
 - Types of evidence to collect
 - Instruments and methods to use
 - How to control for variables
 - Ethical considerations in such investigations

Final Discussion and Reflection (10 minutes)

- Lead a class discussion on the intersection of faith and science in these investigations.
- Reflect on the limitations of scientific inquiry when dealing with potentially supernatural events.
- Encourage students to share their thoughts on how to approach such phenomena scientifically while respecting religious beliefs.

Throughout these lessons, emphasize critical thinking, respect for diverse perspectives, and the importance of maintaining scientific rigor when investigating unusual phenomena.