Study Guide



These terms should be memorized and the key concepts should be understood in order to grasp the essential information for the science unit. You will be quizzed weekly over this content, and it will appear on exams.

Lesson 1.1

Vocabulary

These terms will be on the quiz.

- 1. Truth
- 2. Scientific fact

Key Concepts

Answer the questions below on the key concepts. They will be on the quiz.

- 1. What are three ways we can know truth?
- 2. Give three examples of evident truths.
- 3. Why does God directly reveal things that can be known through General Revelation?



Exercise: Explain the *Catechism* quotation in the video.

"Though faith is above reason, there can never be any real discrepancy between faith and reason. Since the same God who reveals mysteries and infuses faith has bestowed the light of reason on the human mind, God cannot deny himself, nor can truth ever contradict truth." "Consequently, methodical research in all branches of knowledge, provided it is carried out in a truly scientific manner and does not override moral laws, can never conflict with the faith, because the things of the world and the things of faith derive from the same God. The humble and persevering investigator of the secrets of nature is being led, as it were, by the hand of God in spite of himself, for it is God, the conserver of all things, who made them what they are." (*Catechism of the Catholic Church*, §159)

- 1. In this passage, what is General Revelation and what is Special Revelation?
- 2. Why is faith above reason?
- 3. Why will careful scientific research never contradict faith?
- 4. How is a scientist called to glorify God?

Notes

Memorize the information below. It will be on the quiz.

- □ Scientific knowledge
 - Is not the only form of knowledge
 - Is able to change
- □ Truth
 - Is not able to change
 - Revelation is the most certain form of truth
 - o Evident truths are known through observation
 - Must be true because they are based on data from the senses
 - Logical reasoning (reason) includes necessary truths and probable truths
 - Scientific knowledge are probable truths
 - Scientific facts



- Are incomplete
- Are provisional truth claims
- Can change
- Discovered by observation
- Discovered by experiments and conclusions made from collected data
- Supported by many pieces of evidence
- o General and special revelation cannot contradict
 - Special revelation is all truths that are essentially supernatural
 - General revelation is revealed through the natural order
 - Allows us to conclude that God exists
 - Is challenging to understand

Lesson 1.2

Vocabulary

These terms will be on the quiz.

- 1. Science
- 2. Theory
- 3. Hypothesis

Key Concepts

Answer the questions below on the key concepts. They will be on the quiz.

- 1. Why is it incorrect to dismiss a scientific idea because, "it is only a theory
- 2. Give an example of a good hypothesis.

Study Guide



Notes

Memorize the information below. It will be on the quiz.

- 4. Scientific theories are supported by many facts
 - a. Strong, probable truth claims
 - b. Models that allow us to make new predictions
 - c. The glory and goal of scientific research
- 5. A good hypothesis is a positive statement that is informed by theories/common sense
 - a. Must be testable
 - b. Has an if...then... format
- 6. Scientists must exercise humility when their experimental data does not support the hypothesis
 - a. They first should:
 - i. Make sure the variables they used were accurate
 - ii. Look for lurking variables
 - iii. Look for equipment flaws
 - iv. Make sure they properly understand the theory
 - b. Only then should they consider if the theory was weakened

Lab Preparation Lesson

Key Concepts

- 1. What is a controlled experiment?
- 2. Why do we do multiple trials in an experiment?

Works Cited: Catechism of the Catholic Church. Liguori, MO: Liguori Publications, 1994.