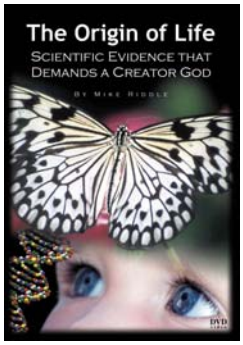

The Origin of Life

DVD Lesson Plan

Purpose of the DVD
The purpose of the DVD is to demonstrate that evolution does not have an answer for how life originated and that the scientific evidences point to a Creator God.

DVD Theme
The school textbooks are using deception by omitting the scientific evidence that contradicts evolution (deception by omission).

Using the DVD to build an accurate knowledge of the scientific evidences about origins
There is much misinformation being presented in school textbooks about evolution, specifically about the origin of life. This DVD will help the student to objectively evaluate evolution and creation by presenting the scientific evidences not found in most textbooks.

The DVD is presented in five major sections:

1. Introduction
2. Attempts to create life in a laboratory
3. The building blocks of life: an insurmountable problem for evolution
4. Probability and the origin of life
5. The Second Law of Thermodynamics
6. Information and complexity

How to Teach Using This DVD

Viewing the DVD for educational purposes (suggestions for maximizing learning)

For best learning results it is recommended that students:

1. Review the objectives.
2. Review the DVD outline.
3. Review the exercise questions prior to viewing the video. This will encourage the student to know what to look for and enable better learning.
4. While watching the video fill in the answers to each of the exercise questions so they can be used as a study guide.
5. After watching the video and studying the exercise sheet, complete the exercise again, in a test format (no notes).

DVD Objectives

At the completion of this video the student will be able to:

- State/write the difference between the creation and evolution models for how life started.
- State/write the relationship between atoms, molecules, amino acids, and proteins.
- State/write three flaws in the Miller experiment and why it was not successful.
- State/write how probability affects the origin of life by natural processes (chance).
- State/write the four mechanisms necessary for molecules to have randomly come together (meaning a gain in information and complexity) to form a living cell.
- State/write why just matter, energy, and time are not sufficient to cause life to originate by natural processes.

DVD Outline

Part 1: Introduction

- The model of evolution
  - About 4.6 billion years ago the earth evolved into existence
  - Chemicals formed in the “primordial soup”
  - Chemicals bonded together to form molecules
  - Molecules bonded together to form the first cell
- The model of creation
  - Colossians 1:16
  - God created ALL things – visible and invisible
- Terminology
  - Atom: Basic unit of matter
  - Molecule: Specific arrangement of atoms

- Amino Acid: Specific arrangement of molecules
- Protein: Specific arrangement of amino acids

- History of evolutionary thought
  - Spontaneous generation
  - Louis Pasteur
  - Spontaneous generation renamed to chemical evolution

PART 2: **Attempts to create life in a laboratory – The Miller experiment**

In the 1950's Miller set out to create the building blocks of life (amino acids)

- Textbooks continue to indicate Miller was successful in creating amino acids necessary for life
- Critical thinking – three things to analyze
  - How did Miller know what gases were in the early earth's atmosphere?
  - Did Miller use intelligent design or random chance occurrences?
  - Were the amino acids Miller got the right kinds used in life?
- Critical thinking 1:The atmosphere
  - The claim by evolutionists and textbooks
  - Question: Is there any evidence to support the claim of no oxygen?
  - Evidence 1: "New Evidence on Evolution of Early Atmosphere and Life," *Bulletin of the American Meteorological Society*, Nov, 1982, p 1329.
    "…geologists know from their analysis of the oldest known rocks that the oxygen level of the early atmosphere had to be much higher than previously calculated."
  - Evidence 2: Harry Clemmey, Nick Badham, "Oxygen in the Atmosphere: An Evaluation of the Geological Evidence", *Geology*, Vol 10, March 1982, p. 141
    "There is no scientific proof that Earth ever had a non-oxygen atmosphere such as evolutionists require. Earth's oldest rocks contain evidence of being formed in an oxygen atmosphere."
- Critical thinking 2: Design and intelligence
  - Does a design require a designer?
  - Miller used intelligent design
  - Miller used a "trap door"

PART 3: Building blocks of life: an insurmountable problem for evolution

- Amino acids and life
  - Only 20 of the over 2,000 types of amino acids are used in life
  - Amino acids come in two shapes: left-handed and right-handed
  - All amino acids in proteins are left-handed
  - Miller ended up with a mixture of left-handed and right-handed amino acids
  - The natural tendency is always to form a mixture of left-handed and right-handed amino acids
  - When an organism dies, its 100% left-handed amino acids begin to revert back to a mixture of left-handed and right-handedness

- The Miller experiment is known NOT to have produced the building blocks necessary for life

  "Terrestrial explanations are impotent and nonviable"
  William Bonner, Organic Chemist, Stanford University (a leading homochiral researcher), UCLA conference on life's origins, 1995.

- The cell and complexity
  - The cell is more complex than a computer
  - What makes an airplane fly?
  - What makes a cell alive?

Part 4: Probability and the origin of life

- Probability and life
  - What is the probability of getting heads every time we flip a coin?
  - The Law of Probability (10^{50})
  - The probability of getting a single protein
  - The probability of getting a single cell

    "If a particular amino acid sequence was selected by chance, how rare an event would this be?...
    The great majority of sequences can never have been synthesized at all, at any time."
    Francis Crick, *Life Itself: Its Origin and Nature*, 1981, pp. 51-52.

    "The likelihood of life having occurred through a chemical accident is, for all intents and purposes, zero."
    Robert Gange, Ph.D. (research scientist with extensive research in the field of cryophysics and information systems.), *Origins and Destiny*, 1986, p. 77.

- Amino acids and proteins
  - Must get the right atoms
  - Must be arranged in the right order
  - Must be left-handed
- Computers and proteins
  - Super fast computers would not have enough time to assemble a single protein
  - Computers and protein folding
- The primordial soup
  - Chemistry – hydrolysis
  - Biology – all amino acids in proteins are left-handed
  - Physics – Second Law of Thermodynamics

    Energy goes from a state of usable energy to a state of less usable energy for doing work in an isolated system

Part 5: The Second Law of Thermodynamics

- The Second Law of Thermodynamics – two arguments
  - Open and isolated systems
  - Growth of an animal embryo or a seed

- Four necessary conditions
  1. An open system
  2. A source of energy
  3. A mechanism to capture and store raw energy
  4. A mechanism to convert raw energy into usable energy

     "There are no known violations of the second law of thermodynamics. Ordinarily the second law is stated for isolated systems, but the second law applies equally well to open systems."

     Dr. John Ross (Harvard scientist and evolutionist), *Chemical and Engineering News*, July 27, 1980, p. 40.
- Evolution and science (a review) – four things that are detrimental to the origin of life by natural processes
  1. Oxygen in the atmosphere (also no oxygen)
  2. Second Law of Thermodynamics
  3. Water (hydrolysis)
  4. Every amino acid in all proteins in life are left-handed

Part 6: Information and complexity

- Information and complexity
  - Charles Darwin ("The Origin of Species")
  - Evolution formula: Matter + Energy + Time = complex codes (life)
  - Creation formula: Matter + Energy + Time + **Outside Intelligence** = life
  - The creation formula is correct

    "Since the findings of James D. Watson and Francis H. C. Crick, it was increasingly realized by contemporary researchers that the information residing in the cells is of crucial importance for the existence of life. Anybody who wants to make meaningful statements about the origin of life, would be forced to explain how the information originated. All evolutionary views are fundamentally unable to answer this crucial question."

    Werner Gitt, *In the Beginning was Information*, 1997, p. 99. (Dr. Gitt was the Director at the German Federal Institute of Physics and Technology)
- The addition of energy
  - All the parts of a Boeing 747
  - All the parts of a cell
  - The principle of decay (all four mechanisms are required)
- The truth about evolution

  "More than 30 years of experimentation on the origin of life in the fields of chemical and molecular evolution have led to a better perception of the immensity of the problem of the origin of life on Earth rather than to its solution.

  At present all discussions on principal theories and experiments in the field either end in stalemate or in a confession of ignorance."

  Dr. Klaus Dose, "The Origin of Life: More Questions than Answers," *Interdisciplinary Science Reviews*, Vol. 13, no. 4 1988, p. 348. (Dose is

Director, Institute for Biochemistry, Johannes Gutenberg University, West Germany)

- The origin of life is impossible by natural means

  "The chances that life just occurred are about as unlikely as a typhoon blowing through a junkyard and constructing a Boeing 747."
  Chandra Wickramasinghe, "Threats on Life of Controversial Astronomer," *New Scientists*, 1982, p. 140

- Evolution and reason

  "Many investigators feel uneasy about stating in public that the origin of life is a mystery, even though behind closed doors they freely admit they are baffled…
  They worry that a frank admission of ignorance will undermine funding,…"
  Paul Davies, The 5th Miracle: *The Search for the Origin and Meaning of Life,* 1999, pp. 17-18.

- Who believes in a six-day creation?
  - Many scientists (see www.icr.org)
- Education

  If I tell you only part of the evidence and you believe it, you have not been taught, you have been indoctrinated.
  If I tell you all the evidence and you make a decision, then you have been taught.

- Conclusion
  - The origin of life by natural processes is not possible
  - We are all looking at the same evidence
  - Many scientists believe in creation
  - Neither creation nor evolution can be proven scientifically
  - It is your choice what to believe

INTERVIEWS

Frank Sherwin, M.A. Zoology
Could life have started by a series of mutations and random chance events?

Judge Darrell White, Federal Judge, retired
Why is examining all the evidence important to understanding creation and evolution?

John Morris, Ph.D. Geological Engineering (President ICR)
What are the best evidences for creation?

Andy McIntosh, Ph.D. Combustion Theory
How does the Second Law of Thermodynamics apply to creation and evolution?

Andy McIntosh, Ph.D. Combustion Theory
All forms of life appear very complex. Could you give us a specific example of this complexity? (An examination of the bombardier beetle)

ADDITIONAL RESOURCES
Book: "The Origin of Life Equipping Course Student Manual," by Mike Riddle. This book covers the entire DVD in more detail. (Order at: www.train2equip.com)

EXERCISES
Exercises can be given in multiple ways to check the student's knowledge of the information presented on the DVD. Two methods have been included in this lesson plan.
1. Essay format
2. Fill-in and multiple choice format

The following pages include both formats.

Origin of Life Exercise (essay format)

1. Give a brief description of how the two models (creation and evolution) teach that life originated.

2. What is the relationship between the following: molecules, amino acids, atoms, and proteins?

3. What is meant by spontaneous generation and has it been proven to be true or false?

4. What was the goal of the Miller experiment?

5. Miller left oxygen out of his experiment. Why did he do this and what does the scientific evidence support?

6. Miller did get amino acids from his experiment. How did the amino acids he got compare to amino acids found in life?

7. What can be concluded about all attempts to build proteins necessary for life (biological proteins) from amino acids by natural processes?

8. Some textbooks and other evolutionary materials suggest that life started in the ocean. Is it possible for life to start in water? Why or why not?

9. Which is more complex, a cell or a computer?

10. What is meant by the Law of Probability (10^{50})?

11. The probability of a biological protein being formed by natural processes is 10^{191}. The probability of a single cell being formed by natural processes is $10^{40,000}$. What about the argument: “Given enough time it will happen?”

12. Some people will agree that life could not start on earth by natural processes but will postulate that life started in outer space. Does this answer the question of how life started? Why or why not?

13. Based on all known science, the probability that life exists elsewhere in the universe is zero. Defend this statement.

The Second Law of Thermodynamics (definition)

Energy goes from a state of usable energy to a state of less usable energy for doing work in an isolated system.

14. The open/isolated system argument is used by some evolutionists to get around the Second Law. Is this a valid argument when it comes to the origin of life? Why or why not?

15. What is misleading with the following statements?
    - A seed grows into a tree which is a gain in order and complexity, therefore evolution does not violate the Second Law.
    - An animal embryo grows into an adult animal which is a gain in order and complexity, therefore evolution does not violate the Second Law.

16. Write the four necessary conditions for something to gain in information and complexity.

    _____

    _____

    _____

    _____

17. Which of these two formulas is capable of producing complex codes (life) and why?

    M + E + T

    M + E + T + OI

    M = Matter, E = Energy, T = Time, OI = Outside Intelligence

18. Why do the following three things prohibit life from arising by natural processes (evolution).

    1. Oxygen

    2. No oxygen

    3. Handedness of amino acids

19. If you have all the components (atoms) necessary for building a living cell in a “primordial soup”, add energy to it, and give the experiment billions of years, what will happen and why?

Origin of Life Exercise (multiple choice/ fill-in format)

1. Fill in the following blanks for Colossians 1:16.

   For by him were _____ things created, that are in heaven, and that are in earth, _____, whether they be thrones, or dominions, or principalities, or powers: _____ things were created by him, and for him."

2. What is the relationship between each of the following?

Atoms	Basic units of matter
Molecules	_____
Amino acids	_____
Proteins	_____

3. Spontaneous generation is the idea that non-life can spontaneously generate _____.

4. The goal of the Miller experiment was to produce _____.

5. What key gas that is in our atmosphere was left out of Miller's experiment?

   _____

6. Miller used a _____ _____ to pull the amino acids out the spark chamber because he knew they could not survive under the conditions used to form them.

7. Which of the following are <u>not</u> part of the evolution model, but were used in the Miller experiment?

   a. Random chance occurrences
   b. Intelligent design
   c. Long periods of time
   d. Natural processes

8. How many different types of amino acids are used in life? _____

9. Amino acids used in life come in two shapes: _____ and _____.

10. Miller produced amino acids in his experiment. What shapes did he produce?

_____

11. The natural tendency of amino acids is always to combine into what mixture?
    a. 50% left-handed and 50% right-handed
    b. 100% right-handed
    c. 100% left-handed

12. If you start with 100% left-handed amino acids, what naturally begins to happen to them?
    a. They stay a 100% left-handed mixture.
    b. They all change to right-handed amino acids.
    c. They begin to change to a mixture of left-handed and right-handed amino acids.
    d. They dissolve back into random molecules.

13. Some people claim that there is a good probability of life elsewhere in the universe. Based on all known science, what is the probability life exists elsewhere in the universe?
    a. 100%
    b. 80%
    c. 50%
    d. 0%

14. Which is more complex?
    a. Computer
    b. Cell

15. What is meant by the Law of Probability (10^{50})?
    a. If the chances of an event to occur are greater than this number it will never happen.
    b. If the chances of an event to occur are greater than this number it has less than a 50% chance of happening.
    c. It could still occur on the first try.

16. According to scientists, what is the probability of a singe cell evolving by natural processes?
    a. 10^{50}
    b. 10^{200}
    c. $10^{2,000}$
    d. $10^{40,000}$

17. Based on probability, what can be concluded about the probability of a biological protein occurring by random chance events?
    a. It could happen because the probability is less than 10^{50}.
    b. It has no chance of occurring because the probability is greater than 10^{50}.
    c. It might happen because the earth is 4.5 billion years old, which would allow for billions of attempts to form the correct arrangement of amino acids.

18. What did scientists Francis Crick and Robert Gange state about the probability of a single protein forming by natural processes (evolution)?
    a. It could happen under the right circumstances.
    b. The chances are zero, it could never happen.

19. Can life start in water?
    a. Yes
    b. No

20. In order to get a protein for life to form, what events must happen? Select all that apply.
    a. Must get the right atoms
    b. The atoms must be arranged in the right order to make an amino acid
    c. The amino acid must be left-handed
    d. It must be one of the 20 amino acids used in life

21. Which of the following is the process of water decomposing molecules?
    a. Hypothermia
    b. Hydrangea
    c. Hydrothermal action
    d. Hydrolysis

The Second Law of Thermodynamics (definition)

Energy goes from a state of usable energy to a state of less usable energy for doing work in an isolated system.

22. Are there any known exceptions to the Second Law?
    a. Yes
    b. No

23. Since the earth is an open system and the definition of the Second Law refers to isolated systems, does this mean it has no effect on evolution?
    a. True, since the earth is an open system the Second Law does not affect the process of evolution.
    b. False, because the Second Law also applies to open systems.

24. Is an animal embryo growing into a full adult animal an example of evolution working in an open system?
    a. No. The DNA already contains all the information needed to grow to maturity.
    b. Yes. It shows how evolution works with the Second Law of Thermodynamics in an open system.

25. Write the four required mechanisms for something to gain in complexity and information.

_____

_____

_____

_____

26. If you have all the components (atoms) necessary for building a living cell in a “primordial soup”, add energy to it, and give the experiment billions of years, what will happen?
    a. Nothing but more decay because you still need a mechanism to capture the raw energy.
    b. Given enough time a cell could evolve by natural processes.

27. Which of the following formulas has been observed to produce complex codes?
    a. M + E + T
    b. M + E + T + OI
    c. M + E
    d. M + I + E

28. Are there any scientists who believe in creation and in a literal 6-day creation?
    a. Yes
    b. No

29. Write three additional things that prohibit life from starting by natural processes.

    1. Oxygen in the atmosphere

    2. _____

    3. _____

    4. _____

30. Based on all known science, what can be concluded about the origin of life?
    a. The origin of life is not possible by natural processes (evolution).
    b. Life must have started in the ocean.
    c. Given enough time, life will start through natural processes.
    d. Life started in outer space.

Answer Key (Essay format)

1.

Evolution	Creation
▪ About 4.6 billion years ago the earth evolved into existence ▪ Chemicals formed in the "primordial soup" ▪ Chemicals bonded together to form molecules ▪ Molecules bonded together to form the first cell	Colossians 1:16 For by him were all things created, that are in heaven, and that are in earth, visible and invisible, whether they be thrones, or dominions, or principalities, or powers: all things were created by him, and for him.

2. Atoms can bond together to form molecules.
   Molecules can bond together to form amino acids.
   Amino acids can bond together to form proteins.

3. Spontaneous generation is the idea that non-living matter can spontaneously form into living matter (cell). It has been proven false.

4. The goal of the Miller experiment was to form (spontaneously generate) amino acids necessary for life.

5. Miller left oxygen out of his experiment because he knew oxygen causes molecular bonds to come apart, such as in amino acid bonds.

   The scientific evidence supports the earth has always had oxygen in the atmosphere.

6. Miller got a mix of 50% left-handed amino acids and 50% right-handed amino acids. Life requires 100% left-handed amino acids. This means the Miller experiment failed to produce the correct amino acids necessary for life.

7. Every attempt to produce amino acids by natural processes has ended up with a mixture of left-handed and right-handed amino acids. Even when the experiment started with all left-handed amino acids, the amino acids naturally reverted back to a mixture of left-handed and right-handed amino acids.

8. Life cannot start in water. Water contains an oxygen molecule which will insert itself into amino acid bonds. The result is that if the amino acids did bond together, they would very soon be pulled apart.

9. A cell is many more times complex than a computer.

10. The Law of Probability (10^{50}) means that if the chance of an event to occur is greater than this number, it will never happen.

11. Even given enough time (20 billion years), there is not enough time for a single protein to form by random chance.

12. To state that life started in outer space does not answer the question of how life started, it only pushes the argument to outer space. How did life begin in outer space? There is no answer.

13. Zero. All known science has confirmed that life could not start on the earth by natural processes. To suggest it could happen elsewhere in the universe is a great claim without any supporting evidence. We still have to get the right atoms. The atoms must be arranged in the right order to form an amino acid. The amino acid must be one of the 20 amino acids used in life. Finally, all the amino acids must be left-handed. This set of conditions has never been observed to occur by natural processes. If it can't happen on earth, why should we suppose it could happen in outer space? A belief in "life in outer space" ends up being a great leap of faith.

14. The open/isolated system argument is not valid when discussing how life originated. Just having an open system with an input of energy will not cause something to gain in complexity and information. The energy input cannot be used until there is a mechanism to capture the raw energy.

15. Both are misleading statements and ignore the importance of information in life. The embryo and the seed already contain the information (DNA) in them which determines how they are to grow.

16.
- An open system
- A source of energy
- A mechanism to capture and store the raw energy
- A mechanism to convert the raw energy into usable energy for doing work and then putting the energy to use

17. The second formula (M + E + T + OI). Just matter, energy, and time (or random chance) has never been observed to create complex codes needed for life. It always requires outside intelligence.

18. Oxygen: Oxygen pulls molecule bonds apart. Amino acids necessary for life will not form or bond together in the presence of oxygen.

No oxygen: Without oxygen in the atmosphere there would be no ozone to protect molecules or any life.

Handedness of amino acids: All amino acids in proteins are left-handed. The natural tendency is always to a mix of left-handed and right-handed amino acids.

19. More decay. In this situation, only two of the necessary four conditions are present. The addition of energy into an open system is necessary but there still needs to be a mechanism to capture the energy and a mechanism to convert the raw energy into usable energy.

Answer Key (Fill-in format)

1. all, visible and invisible , all

2.
Atoms	basic units of matter
Molecules	specific arrangement of atoms
Amino acids	specific arrangement of molecules
Proteins	specific arrangement of amino acids

3. new life

4. amino acids

5. Oxygen

6. Trap door

7. b, Intelligent design

8. 20

9. Left-handed and right-handed

10. Left-handed and right-handed

11. a, 50% left-handed and 50% right-handed

12. c, They begin to change to a mixture of left-handed and right-handed amino acids

13. d, 0%

14. b, cell

15. a

16. d, $10^{40,000}$

17. b

18. b, the chances are zero, it could never happen

19. b, no

20. a, b, c, d

21. d, hydrolysis

22. b, no

23. b, the Second Law also applies to open systems

24. a, no

25. Open system
    Source of energy
    A mechanism to capture and store raw energy
    A mechanism to convert the raw energy into usable energy

26. a

27. b, M + E + T + OI

28. a, yes

29. No oxygen in the atmosphere
    The Second Law of Thermodynamics
    Water
    All amino acids must be left-handed

30. a