

*Evolution:  
The Grand Experiment*

*The Quest for an Answer*

**TEACHER'S  
MANUAL**

*by Dr. Carl Werner*

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## *Workflow for Teacher/Students*

It is suggested that the teacher develop a workflow that will be followed for each chapter. The following workflow is offered. Each teacher may, of course, tailor the materials to the students' needs and the time constraints of the class schedule.

**Step 1. Teacher reads Purpose of Chapter.** The purpose of each chapter is summarized for the teacher.

**Step 2. Teacher leads students in Class Discussion Questions.** The Class Discussion Questions help the students develop an interest in the topic. The Socratic method (leading students to understanding through questioning and dialogue) is an effective way to motivate students to learn more.

**Step 3. Students watch DVD (if applicable).** DVDs are currently in development for this course. See [TheGrandExperiment.com](http://TheGrandExperiment.com) website for more information.

**Step 4. Students read chapter.**

**Step 5. Students are given the chapter objectives *after* reading the chapter and are directed to complete the answers.** Generally, if the students complete and memorize the answers to the Objectives for Students, they will get a 100 percent on the Chapter Tests.

**Step 6. Teacher administers Chapter Test.** All questions are taken from the Objectives for Student sheet. If there are any incorrect test answers, the teacher should refer the students back to the chapter objectives and have them restudy the objectives.

**Step 7. Teacher proceeds to next chapter following same workflow.**

**Step 8. Teacher administers Sectional Exams after Chapters 3, 9, 15 & 19.**

**Step 9. Teacher administers Comprehensive Final Exam after Chapter 19.**

## *Note to Teacher*

**The Importance of the Objectives for Students:** Since the student will be tested three different times on the Objectives for Students, *the student should be encouraged to keep his or her objective sheets for each chapter (with the correct answers to the objectives) and use them to study for the individual Chapter Tests, Sectional Exams, and the comprehensive Final Exam.* By preparing and studying the answers on the objective sheets for each chapter, students should be able to score 100 percent on every exam and master the material.

**Note to teacher about student impropriety:** If the materials are taught in a school where students may have access to the Teacher's Manual (by buying online), or by getting tests from previous students, the effectiveness of the course is greatly diminished. Therefore, it is suggested that students *not* be allowed to keep tests and answer sheets once the test is scored and reviewed. Also, each time the course is taught, the test order may be changed. For example, one year the teacher may choose to use Test C for the individual Chapter Tests, Test B for the Sectional Exams, and Test A for the comprehensive Final Exam. Another alternative is to occasionally write a new test *based on the student objective sheets* for that chapter.

## *Video Presentations*

In addition to the DVDs being developed by Audio Visual Consultants as enhanced content related to this series, DVDs and books from other sources relating to various opinions on the topic of evolution will also be suggested for review.

New DVDs will be released periodically through Audio Visual Consultants, so please check the website [www.TheGrandExperiment.com](http://www.TheGrandExperiment.com) for updates!

## CHAPTER 1

# The Origin of Life: Two Opposing Views

**Purpose of Chapter:** The purpose of Chapter 1 is to help the student understand that there is more than one point of view regarding how all forms of life came about. It is important, in a diverse culture such as our own, to understand other points of view and to understand how others have arrived at their conclusions.

### **Class Discussion Questions for Teacher:**

**These generally should be discussed in class before the students read the chapter.**

1. What are the two opposing views concerning how life came about and how humans came into being?

Answer: Generally, they are: (1) That life (in the form of a theoretical bacterium-like organism) came about spontaneously as a result of the big bang, eventually evolving into modern animals and humans over billions of years or (2) That all life was created by a higher power or deity not seen by human beings. (Note: A possible third view, believed by some, is that life evolved, but God helped the process along.)

2. Do you think parents want creationism to be taught in *public* schools along with evolution? Why or why not?

Answer: According to the Gallup poll presented in this chapter, parents want creationism taught in public schools along with evolution so that students can learn the facts and evidences both for and against each theory.

# CHAPTER 1

**Info for Students:** This course is set up with the intent that you, the student, will learn the material in this book and *retain* this important information. To this end, you will be tested on the material from each chapter on three separate occasions: Once in a test following each individual chapter; once in a Sectional Exam for a series of chapters; and once in a Comprehensive Final Exam for Chapters 1–19. This being the case, *you should hold on to the objective sheets for each chapter for these future tests. Please ensure you have the correct answers for the objective questions.* By preparing and studying the answers on the objective sheets for each chapter, you should be able to score 100 percent on every exam and master the material.

**Chapter Tests:** There will be a Chapter Test at the end of each chapter.

**Sectional Exams:** Sectional Exams will cover a series of chapters and will be given after Chapters 3, 9, 15 and 19.

**Final Exam:** The Comprehensive Final Exam will cover Chapters 1–19 and will be administered at the end of the semester.

## The Origin of Life: Two Opposing Views

### Objectives of Chapter 1 for Students:

**By studying these objectives and knowing this core information, most students should be able to pass all of the tests.**

1. Be able to describe the two world views concerning how life and humans came into existence (page 2).
2. Be able to define the big bang (page 2 and page 235 of the Glossary).
3. Know the year Darwin published his theory of evolution (page 3).
4. Be able to describe the three major scientific developments concerning evolution that have occurred since Darwin first published his theory in 1859. Hint: Fossils, DNA, and genes (page 3).
5. Be able to name the artist, the location, and the content of the famous artwork dealing with the origin of life, as seen on page 3 of this chapter.

*(Continued on next page)*

## CHAPTER 1

# The Origin of Life: Two Opposing Views

### Objectives of Chapter 1 for Students (continued):

6. Be able to describe the results of the 2006 Gallup poll concerning the origin of life. The student must know not only the four opinions held by different groups in our society, but also the percentage of Americans who hold each of these beliefs. Note: This objective is very important and one you will be tested on more than any other (page 5).
7. Know that since the middle of the 20th century there have been a growing number of scientists who reject the theory of evolution based on the discovery of processes and structures of which Darwin was unaware (page 8).
8. Be able to list the four best evidences against the theory of evolution cited by scientists who oppose evolution (page 8).
9. Be able to list the four best evidences for the theory of evolution cited by scientists who support evolution (page 8).
10. Be able to describe the problems of teaching the theory of evolution to students using the dual model approach (page 9).
11. Be able to describe the benefits of teaching the theory of evolution to students using the dual model approach (page 9).
12. Be able to describe the results of the Gallup poll concerning the opinion of parents as to what should be taught in public schools. When parents were asked if creationism should be taught in *public* schools, what percentage said yes, what percentage said no, and what percentage had no opinion (page 9).



# CHAPTER 1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## The Origin of Life: Two Opposing Views

### Test A

1. What are the two opposing views on the origin of life?

\_\_\_\_\_  
\_\_\_\_\_

2. Name *one* of the three best *fossil* evidences *for* evolution, cited by scientists who support the theory. \_\_\_\_\_

3. Name one of the three major scientific developments that have occurred since Darwin first published his theory of evolution in 1859. \_\_\_\_\_

\_\_\_\_\_

4. Name *one* of the four best evidences *against* evolution, cited by scientists who oppose the theory. \_\_\_\_\_

5. Michelangelo's famous painting from the ceiling of the Sistine Chapel depicts what?

\_\_\_\_\_

6. According to a Gallup poll taken in 2006, many Americans, 46 percent, believe God created man in the last \_\_\_\_\_ years.

7. What percentage of Americans believe evolution did occur, but that God guided the process? \_\_\_\_\_

8. *True or False:* Only 13 percent of Americans believe in evolution, that humans evolved from apes, and God had no part in the process. \_\_\_\_\_

9. *True or False:* The majority of Americans believe creationism should *not* be taught in *public* schools. \_\_\_\_\_

10. Name one of the fears educators have in teaching two opposing theories about the origin of life. \_\_\_\_\_



# CHAPTER 1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## The Origin of Life: Two Opposing Views

### Test B

1. What theory for the origin of life teaches that life, as we know it today, ultimately came about as a result of an explosion in space? \_\_\_\_\_
2. What famous artist painted a scene of a deity creating man on the ceiling of the Sistine Chapel? \_\_\_\_\_
3. What percentage of Americans believe that God created man in the last 10,000 years?  
\_\_\_\_\_
4. According to a 2006 Gallup poll, what do 36 percent of Americans believe about the theory of our origins? \_\_\_\_\_  
\_\_\_\_\_
5. What percentage of Americans believe in purely natural evolution? (In other words, evolution occurred naturally and that God did not have anything to do with the process.)  
\_\_\_\_\_
6. What percentage of Americans want creationism taught in public schools? \_\_\_\_\_
- 7–9. Name the three best fossil evidences for evolution.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. *True or False:* According to the 2005 Gallup poll, most parents do not want creationism taught to their children in public school. \_\_\_\_\_



# CHAPTER 1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## The Origin of Life: Two Opposing Views

### Test C

1. In the 2006 Gallup poll regarding American beliefs about evolution, what answer was the most frequent response? \_\_\_\_\_  
\_\_\_\_\_

2. Where can Michelangelo's painting be found depicting God creating man (what building)? \_\_\_\_\_

3. What percentage of Americans believe in purely natural evolution? \_\_\_\_\_

*True or False:*

4. Since Darwin first published his theory of evolution, 200 million fossils have been collected by museums. \_\_\_\_\_

5. According to a Gallup poll taken in 2006, 20 percent of Americans believe that God created man in the last 10,000 years. \_\_\_\_\_

6. Darwin published his book about evolution in 1899. \_\_\_\_\_

7. Only 13 percent of Americans believe that humans evolved from apes, and God had no part in the process. \_\_\_\_\_

8. Almost 80 percent of Americans believe evolution did occur, but that God guided the process. \_\_\_\_\_

9. Since the middle of the 20th century, there have been a growing number of scientists who reject the theory of evolution based on the discovery of processes and structures of which Darwin was unaware. \_\_\_\_\_

10. Most Americans believe the teaching of creationism has no place in public schools.  
\_\_\_\_\_



## CHAPTER 1

### Answers Test A

### The Origin of Life: Two Opposing Views

1. One view is that an all-powerful God created the universe and all forms of life. Another view proposes that the universe began billions of years ago as a result of the big bang. Later, life in the form of a bacterium-like organism arose spontaneously from a mixture of chemicals. Subsequently, this single-cell organism slowly began to evolve into all modern life forms.
2. One of the three possible answers:
  - The evolution of whales from a land mammal
  - The evolution of birds from dinosaurs
  - The evolution of men from apes
3. One of the three possible answers:
  - Scientists have collected over 200 million fossils
  - Scientists have described the structure of DNA
  - Scientists have identified how genes are passed on to the next generation
4. One of the four possible answers:
  - Gaps in the fossil record
  - Problems with the big bang theory
  - The amazing complexity of even the simplest organisms
  - The inability of scientists to explain the origin of life using natural laws
5. God creating man
6. 10,000
7. 36 percent
8. True
9. False
10. Some educators fear teaching two opposing theories would confuse the students.

## CHAPTER 1

### Answers Test B

#### The Origin of Life: Two Opposing Views

1. Evolution (teaches that the universe, and eventually life itself, came about as a result of the big bang.)
2. Michelangelo
3. 46 percent
4. 36 percent believe evolution did occur, but that God guided the process.
5. 13 percent
6. 54 percent
- 7–9.
  - The evolution of birds from dinosaurs
  - The evolution of whales from a land animal
  - The evolution of man from apes
10. False (54 percent of parents want creationism taught in public schools.)

### Answers Test C

#### The Origin of Life: Two Opposing Views

1. God created man less than 10,000 years ago.
2. Sistine Chapel
3. 13 percent
4. True
5. False (46 percent)
6. False (1859)
7. True
8. False (Only 36 percent)
9. True
10. False (54 percent favor teaching creationism in public schools.)