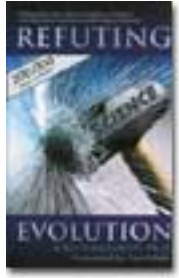


# Refuting Evolution

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## Teacher's Study Guide

*Refuting Evolution*, a response to the National Academy of Sciences' *Teaching about Evolution and the Nature of Science*, is a book that counters the anti-creation sentiment found in the NAS document. Following are questions (with answers) which can be used with *Refuting Evolution* in a classroom setting, or a Sunday school/Bible class setting.

This guide is to be used side by side with the book *Refuting Evolution*.

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## INTRODUCTION

### **1. Why is it hard to believe the statement made in the NAS book that many students receive little or no exposure to evolution? (p. 13)**

It is difficult to believe because a cursory review of any general science, biology, or life science textbook used in the government schools has chapters devoted to evolution—presented as indisputable fact.

### **2. Why is it hard to believe the statement made in the NAS book that evolution is an 'essential concept' in biology? (p. 13)**

It is difficult to believe because most 'key aspects of living things' were discovered by creationists and there are effective biologists today who reject evolution!

### **3. Name some creationists and their important discoveries. (p. 14)**

Louis Pasteur (many diseases were caused by germs and showed that life comes only from life)  
Gregor Mendel (discovered genetics)  
Carolus Linnaeus (developed the modern classification system)

This could be a project for anyone who wishes to find out about more important discoveries by creationists. As you read through this book, more scientists who believe(d) in creation will be mentioned. See how many you can find! (see p. 26)

# CHAPTER 1: Evolution and creation, science and religion, facts and bias

## 1. Many books contrast religion/creation opinions with evolution/science ‘facts’. This is a misleading contrast. Why? (p. 15)

Creationists often appeal to the facts of science to support their view.

Evolutionists often appeal to philosophical *assumptions* from *outside* science.

Both creationists and evolutionists start with bias, although that fact is rarely addressed. It is a dispute between two worldviews.

## 2. Why is it incorrect to believe that facts speak for themselves?

Because facts are always *interpreted* according to a framework

## 3. Evolution comes from the notion that things made themselves. What unproven ideas does evolution include? (p. 16)

- nothing gave rise to something at an alleged ‘big bang’
- non-living matter gave rise to life
- single-celled organisms gave rise to many-celled organisms
- invertebrates gave rise to vertebrates
- ape-like creations gave rise to man
- non-intelligent and amoral matter gave rise to intelligence and morality
- man’s yearnings gave rise to religions

## 4. Give a brief explanation of the statement (p. 17): ‘It’s not really a question of who’s biased, but which bias is the correct bias with which to be biased!’

## 5. Many evolutionists chide creationists because creationists refused to play by the current rules of the game. What is the main rule? (p. 18)

See how far and to what extent the behavior of the physical and material universe can be explained in terms of purely physical and material causes, without invoking the supernatural. This ‘game’ is extended to trying to explain not just the behavior, but the origin of everything without the supernatural.

## 6. Two tenets of the *Humanist Manifesto II* that exactly state what evolution teaches are? (p. 20)

1. Religious humanists regard the universe as self-existing and not created
2. Humanism believes that Man is a part of nature and has emerged as a result of a continuous process.

**NOTE:** The U.S. Supreme Court in *Torcaso v. Watkins*, 81 S.Ct. 1681 (1961) makes the following statement: Among religions in this country which do not teach what would generally be considered a belief in the existence of God, are Buddhism, Taoism, Ethical Culture, ***Secular Humanism*** (emphasis added), and others. Since the US Supreme Court has named secular humanism as a religion, and since the two tenets above come from the humanist manifesto, one can conclude that by teaching evolutionism (or at least the part of evolutionism that says that the universe is ‘self existing and not created’, and that man ‘has emerged as a result of a continuous process’) a teacher is, in fact, teaching a religion. The humanists are the loudest criers of the notion of separation of church and state and that anything religious may not be taught in the government schools. Therefore, this could lead to the idea that evolutionism must not be taught in the government schools, since it is religion (according to the US Supreme Court).

**7. How does *Teaching about Evolution* ... try to sanitize evolution? (p. 22)**

By claiming that it is compatible with many religions, by recruiting religious leaders to support it, by having ‘dialogues’ which portray teachers having success diffusing opposition by asking students to ask their pastor about evolution, and their pastor stating that ‘Evolution is okay!’

**8. What is theistic evolution and do many Christians oppose it? (p. 22).**

Theistic evolution teaches that God used struggle for survival and death as His method of creation. But Scripture teaches that God’s creation was ‘very good.’ ‘Very good’ cannot include death, struggle, decay, etc. A god who created by evolution is indistinguishable from no god at all.

**9. How can one say that evolution and creation are compatible? Is this true? (p. 22)**

The only way to assert that evolution and ‘religion’ are compatible is to regard ‘religion’ as having nothing to do with the real world, and being just subjective. This is **not** true.

**10. *Teaching about Evolution* says that God created everything in its present form over the course of six days. What’s the truth? (p. 23)**

Creationists do **not** claim that everything was created in exactly the same form as today’s creatures. Creationists believe in variation within a kind, which is totally different from the information-gaining variation required for particles-to-people evolution.

**11. *Teaching about Evolution* says: ‘Statements about creation should not be regarded as reasonable alternatives to scientific explanations for the origin and evolution of life.’ Is this a ‘religiously neutral’ remark? Why or why not? (p. 23)**

Since anything not reasonable is unreasonable, the NAS book is saying that believers in creation are

really unreasonable and irrational. This is **not** a religiously neutral remark, but could be considered an attack on theistic religious beliefs.

## **12. What is *normal science*? (p. 28)**

Normal science (operational science) deals only with repeatable, observable processes in the *present*.

## **13. Why is evolution NOT normal science? (p. 29)**

Evolution is a speculation about the unobservable and unrepeatable past.

## **14. Why is it wrong to believe that rejecting evolution is rejecting the type of science that put men on the moon? (p. 29)**

Because the type of science that put men on the moon is technology, not evolution. The main contrast is that the type of science that put men on the moon is based on repeatable observations in the present, not unrepeatable assumptions about the past, as above. Furthermore, the man behind the Apollo moon mission was a creationist rocket scientist Wernher von Braun.

## **15. What do Biblical creationists believe?**

- Genesis is an eyewitness account of the origin of the universe and living organisms
- There is good evidence for this claim, so they reject the claim that their s is a blind faith.
- They don't pretend that any knowledge, science included, can be pursued without presuppositions (i.e., prior religious/philosophical beliefs)
- They affirm that creation cannot ultimately be divorced from the Bible any more than evolution can ultimately be divorced from its naturalistic starting point that excludes divine creation *a priori*.

# **CHAPTER 2: Variation and natural selection vs Evolution**

This chapter contrasts the evolution and creation models. The NAS implies that all changes in organisms are examples of 'evolution.' This allows them to claim that evolution is happening today. HOWEVER, creationists have NEVER disputed that organisms change; the difference is the TYPE of change. A key difference between the two models is whether *observed changes* are the type to turn particles into people.

## **1. What does evolution - of the fish-to-philosopher type - require? (p. 31)**

It requires that non-living chemicals organize themselves into a self-reproducing organism, which would then change into more complex creatures over time.

## **2. What aspect of the creationist model is often overlooked? (p. 33)**

The aspect that is often overlooked is the deterioration of a once-perfect creation.

## **3. Explain why evolutionists do not have a monopoly on natural selection. (p. 34)**

A creationist, Edward Blyth, developed the concept of natural selection 25 years before Darwin wrote *Origin of Species*. This involved weeding out some genetic information. Blyth regarded this as a conservative process that would remove defective organisms. This would conserve the health of the population as a whole.

## **4. What is the *founder effect*? (p. 37)**

The founder effect is described on page 37, in the first paragraph.

## **5. The NAS book uses resistance to antibiotics and pesticides as an example of evolution. Why is this *not* a good example? (p. 40)**

For true evolution to occur, new information has to be added to the genome. The resistance to antibiotics has nothing to do with adding **new** genetic information. What has happened is that some bacterial **already** had the genes for resistance to the antibiotics. In fact, some bacteria obtained by thawing sources that had been frozen before man developed antibiotics have been shown to be antibiotic-resistant. When antibiotics are applied to a population of bacteria, those lacking resistance are killed, and any genetic information they carry is eliminated. The survivors carry **less** information, but they are all resistant. The same principle applies to insects ‘evolving’ resistance to insecticides. The resistance was **already there**, and the bugs without resistance are eliminated.

## **6. The NAS book (pp. 35-36) discusses some of Darwin’s observations. Some of these include the notion that animals on the Galapagos Islands are similar to those in Ecuador, while creatures on the islands off Africa’s coast are related to those in Africa. Darwin couldn’t see how these observations could be explained by the ‘view of his time.’ What was that view?**

That each species had been independently created, with the species that were best suited to each location being created at each particular site (which is NOT what Biblical creationists believe).

## **7. How did Darwin help answer a problem raised by skeptics of the Bible and its account of the flood and the ark?**

By a statement he made which is quoted on page 45. READ THAT STATEMENT out loud.

# **CHAPTER 3: The links are missing**

Chapter 3 discusses the fossil record and the differing assumptions made by creationists and evolutionists. Even Charles Darwin was worried that the fossil record didn't show what his theory predicted (see quote p. 47 of *Refuting Evolution*).

**1. What is required to make a fossil? (p. 52)**

A well-preserved fossil generally requires rapid burial, and cementing agents to harden the fossil quickly. This is usually caused by a catastrophic condition.

**2. Tell why some animals, when they die, do not fossilize. (p. 52)**

When an animal dies it normally rots or is eaten by scavengers.

**3. *Teaching about Evolution* asserts: ‘in many cases, such as between primitive fish and amphibians, amphibians and reptiles, reptiles and mammals, and reptiles and birds, there are excellent transitional fossils.’ Can you name any?**

No. And the book, *Teaching about Evolution* provides no evidence to back up this statement.

**4. Name some examples of how mammals are different from reptiles.**

(See list on p. 56 of *Refuting Evolution*).

**CHAPTER 4: Bird evolution?**

Birds are animals with unique features like feathers and special lungs, and most birds are well designed for flight. Evolutionists believe they evolved from reptiles, maybe even some type of dinosaur. Arguments for these so-called bird-to-reptile evolutions are examined in this chapter.

**1. Present the case for and against *Archaeopteryx* being a ‘missing link.’ (see pp. 57-60)**

Evolutionists claim:	THE FACT IS:

<i>Archaeopteryx</i> . It's a fossil that has feathers like a bird but the skeleton of a small dinosaur.	Alan Feduccia, a world authority on birds at UNC in Chapel Hill (who is an evolutionist) disagrees. He says 'Paleontologists have tried to turn <i>Archaeopteryx</i> into an earth-bound, feathered dinosaur. But it's not. It is a bird, a perching bird.'
<i>Archaeopteryx</i> has teeth	A number of extinct birds had teeth, and many reptiles do not.
	<p><i>Archaeopteryx</i> had fully formed flying feathers, the classical elliptical wings of modern woodland birds, a large wishbone for attachment of muscles responsible for the downstroke of the wings.</p> <p>Its brain was essentially that of a flying bird (large cerebellum and visual cortex).</p> <p>Like other birds, its upper jaw and lower jaw moved. In most vertebrates (including reptiles) only the mandible moves.</p>

**2. List some of the evidences presented in *Refuting Evolution* that show why we need to keep an open mind about the existence 'feathered dinosaurs'. (p. 60)**

See pages 60 and 61 for several reasons and lists of articles that can be read giving pros and cons on this issue.

**3. List two problems with the notion that 'gliders' turned into 'flyers', as proposed by evolutionists.**

Gliders either have even longer wings than flyers or have a wide membrane that is quite different from a wing. Flapping flight requires highly controlled muscle movements to achieve flight, which in turn requires that the brain has the program for these movements. This, then, requires new genetic information that non-flying creatures lack.

Another problem is that neither their hypothetical ancestor nor transitional forms linking them to known fossil birds have been found.

Two scientists (Feduccia and Martin - see footnote, p. 62) provide criticism against the notion that birds evolved ‘ground up’ from running dinosaurs, but the dino-to-bird advocates counter with equally powerful arguments against Feduccia and Martin’s ‘trees-down’ theory. The *evidence* indicates that both are correct - birds did **not** evolve either from running dinos or from tree-living mini-crocodiles. Birds did **not** evolve from non-birds at all! This is consistent with the Biblical account in Genesis 1: 20-23.

**3. Evolutionists believe that birds evolved from reptiles. However, birds and reptiles are different in many ways. Name some of the ways in which reptiles differ from birds. (p. 63)**

Flying birds have:

- streamlined bodies with the weight centralized for balance in flight
- hollow bones for lightness which are part of their breathing system
- powerful muscles for flight with specially designed long tendons that run over pulley-like openings in the shoulder bones
- very sharp vision
- feathers
- special lungs
- DNA information that codes for feathers
- feather proteins are biochemically different from skin and scale proteins

Reptiles have:

- scales
- bones
- DNA information that codes for scales but not for feathers
- skin and scale proteins are biochemically different from feather proteins

4. What is the main difference between the reptilian and avian lungs?

The reptilian lung works somewhat like a bellows—air comes into the lung, and blood takes up oxygen and gives up carbon dioxide. Used air comes out the same tubes in the opposite direction. The avian breathing system involves a series of air sacs that make sure that air flows through the lung in the one direction. The air moves constantly through tubes in the lung called *parabronchi*, and the blood flows past in the opposite direction for maximally efficient oxygen uptake.

## CHAPTER 5: Whale evolution?

Cetaceans (whales and dolphins) are actually mammals, **not fish**. They live their whole lives in water. Evolutionists believe that cetaceans evolved from land mammals. One of these alleged transitional series is mentioned in *Teaching about Evolution*. This chapter analyzes this and other arguments for cetacean evolution.



### 1. Cetaceans have many unique features. Name a few. (p. 69)

- enormous lung capacity with efficient oxygen exchange for long dives
- a powerful tail with large horizontal flukes enabling very strong swimming eyes designed to see properly in water and to withstand high pressure
- ears designed differently from those of land mammals that pick up airborne sound waves
- eardrum protected from high pressure
- skin lacking hair and sweat glands, but incorporating fibrous, fatty blubber
- fins and tongues that have counter-current heat exchangers to minimize heat loss
- nostril on the top of the head (blowholes)
- specially fitting mouth and nipples so the baby can be breast fed under water
- some have sonar systems

### 2. *Teaching about Evolution* reconstructs some fossil discoveries that are purported to support whale evolution. Can you name a few discrepancies in the NAS' thinking? (p. 72)

- a picture of an alleged transitional series between land mammals and whales **drawn** at roughly the same size. The NAS document fails to mention that these creatures were **very different** in size.
- the time frame for these alleged changes to occur by mutation and selection would place the Earth at an even older age that evolutionists say it is
- the second in the 'transitional series' (*Ambulocetus*) is a drawing from an artist's imagination and should be compared to the actual bones which have been found
- the fourth transitional form in the NAS document (*Basilosaurus*) should have been represented as 10 times as long as the first transitional form rather than as the same size. This animal was **fully aquatic** and thus it was hardly transitional between land mammals and whales. In fact, Barbara Stahl, a vertebrate paleontologist and evolutionist, pointed out that the body shape of *Basilosaurus* means that it 'could not possibly have been the ancestor of modern whales.'

### 3. Why is it doubtful that *Pakicetus* is an intermediate between whales and land mammals? (p. 76)

- *Pakicetus* is known only from some cheek teeth and fragments of the skull and lower jaw, so there is no way of knowing whether its locomotion was transitional
- only the stippled parts of the skull represent actual fossil evidence, and the rest is an artist's rendition of what the *Pakicetus* is thought to look like (see p. 77 - *Refuting Evolution*).
- the hearing mechanism was that of a land mammal
- it was found in fluvial sediments with other land animals

## CHAPTER 6: Images of God or advanced apes?

Humans are very different from animals. Humans have the ability to use language and logic. *Teaching*

*about Evolution* points out a number of contrasts between humans and apes and indoctrinates readers with the idea that humans have descended from a simple cell via ape-like ancestors using alleged DNA similarities.

**1. Charles Oxnard, an evolutionist, does not believe that australopithecines were in the human line. Why not? (p. 80)**

Australopithecines are more distinct from both humans and chimpanzees than these are from each other. Australopithecines did not walk upright in the human manner and they must have been living at least in part in trees. Many of the later specimens were living at the same time or almost so with the earlier members of the genus *Homo*. (See footnote, p. 80)

**2. What are *mitochondria*? (p. 81)**

Mitochondria are the structures within cells that help produce energy. They have their own genes that are passed down the female line with the occasional mutation.

**3. *Teaching about Evolution* emphasizes physical and DNA similarities between human and other living organisms. This is an *interpretation* of the data. Give another interpretation of the same data. (p. 82)**

A *common designer* is another interpretation that makes sense of the *same* data. (If all living organisms were totally different, this might look like there were many designers instead of one.)

**4. Name some similarities between organisms that evolutionists don't believe are closely related. (p. 83)**

- Hemoglobin is found in vertebrates, and *some* earthworms, starfish, crustaceans, mollusks, and even in *some* bacteria.
- The a-hemoglobin of crocodiles has more in common with that of a chicken than that of a viper (their fellow reptiles).
- An antigen receptor protein has the same unusual single chain structure in camels and nurse sharks, but a common ancestor of sharks and camels cannot explain this.

**5. What does 'Mitochondrial Eve' mean? (p. 88)**

Since mitochondrial DNA is inherited only through the mother's line, the similarities are consistent with the idea that all people on earth are descended from a single human female

## **CHAPTER 7: Astronomy**

Evolution is a philosophy that tries to explain everything without God. *Teaching about Evolution* presents the prevailing evolutionary view on astronomical origins.

**1. Which non-scientific assumption is the ‘big bang’ based on? (p. 94)**

It is based on the *cosmological principle*.

**2. What is the *cosmological principle*? (p. 94)**

The *cosmological principle* states that an observer’s view of the universe depends neither on the direction in which he looks nor on his location. In other words, the Earth is nowhere special..

**3. [Dr. Russell Humphreys](#), a nuclear physicist, has developed a cosmology that allows for the formation of the universe in a Biblical time frame, using Einstein’s theory of general relativity (the same theoretical foundation as the ‘big bang’ ). Why does this new cosmology work? (p. 95)**

It works because general relativity shows that time is different in different reference frame with different gravitational fields. The universe *could have* been made in six ordinary days in Earth’s reference frame, but the light had ample time to travel in an extraterrestrial reference frame. *However, as with all scientific theories, we should not be too dogmatic about this model, even though it seems good.*

**4. *Teaching about Evolution* (p. 52) makes the following dogmatic statement: ‘The sun, the Earth and the rest of the solar system formed from a nebular cloud of dust and gas 4.5 billion years ago.’ Why is that statement dogmatic? (p. 95)**

Because they weren’t there to see it happen. Nor was anyone else!

**5. What is the ‘nebular hypothesis’ and some problems with it. (pp. 95-96)**

This is the idea that the solar system arose from the gravitational collapse of a nebula, or gigantic cloud of dust and gas in space. Several problems are *detailed* on pp. 96-97 of *Refuting Evolution*.

**6. What is a geocentric system?**

A system where the Earth is at the center of the universe and other heavenly bodies orbit the Earth.

**7. Some skeptics assert that Biblical passages that say that the sun rises and sets are errors. Why is this accusation absurd?**

Even scientists and astronomers refer to the sun rising and setting. It’s determined by the frame of reference (or context) of the statement.

# CHAPTER 8: How old is the Earth?

For particles-to-people evolution to have occurred, the Earth would need to be billions of years old. *Teaching about Evolution* presents a claim for vast time spans and graphically illustrates this assertion in a chart on pages 36-37.

On the other hand, basing one's ideas on what the Bible says gives a different picture. This chapter analyzes rock formation and dating methods in terms to the two competing models.

## **1. Give one common evidence used (by evolutionists) to prove that the Earth is very old.**

The vast thicknesses of sedimentary rock layers around the world are one.

## **2. How are sedimentary rocks formed?**

Sedimentary rocks are formed when solid materials carried by wind and water accumulate in layers and then are compressed by overlying deposits. These rocks sometimes contain fossils formed from the parts of organisms deposited along with other solid materials.

## **3. Because sedimentation *usually* occurs slowly today, it is *assumed* that it must have always occurred that way. And if this is so, then the rock layers must have formed over vast ages. This is a simplification of what philosophy? (104)**

Uniformitarianism.

## **4. Contrast uniformitarianism with catastrophism. (p. 105)**

[Classic] Uniformitarianism is the philosophy that processes have always occurred at roughly constant rates (the present is the key to the past). Catastrophism is the belief that processes have occasionally occurred as the result of a catastrophic (violent) event (such as flood, volcano, etc.)

## **5. What is radiometric dating? (p. 107)**

Some elements (such as uranium) undergo radioactive decay to produce other elements. By measuring the quantities of radioactive elements and the elements into which they decay in rocks, geologists can determine how much time has elapsed since the rock has cooled from an initially molten state.

## **6. In today's world, radioactive decay rates seem constant, and are unaffected by heat or pressure. Why can we not be certain that the rates have always been constant over the alleged billions of years (p. 110)**

We have tested decay rates for only about 100 years, so we can **not** be sure that they were constant over the alleged billions of years.

**7. Why should we not assume that the rocks being analyzed have not been altered over time by migration of atoms in or out of the rocks (as *Teaching about Evolution* assumes - p. 3)? (p. 110)**

Potassium and uranium, both common parent elements, are easily dissolved in water, and thus could be leached out of rocks. Argon, produced by decay from potassium, is a gas, so moves quite readily.

**8. Give several examples pointing to a young Earth.**

- red blood cells and hemoglobin have been found in some dinosaur bone (these could not have lasted more than a few thousand years)
- the Earth's magnetic field has been decaying so fast that it couldn't be more than about 10,000 years old.
- Helium is pouring into the atmosphere from radioactive decay, but not much is escaping. The total amount in the atmosphere is only 1/2000th of what would be expected if the atmosphere were billions of years old.
- salt is pouring into the sea much faster than it is escaping, but the sea is not nearly salty enough for this to have been happening for billions of years.

## **CHAPTER 9: Is the design explanation legitimate**

*Teaching about Evolution* frequently dismisses Creation as 'unscientific' and/or 'religious'. Creationists point out that creation occurred in the past, so it cannot be directly observed by experimental science - but then, neither can large-scale evolution. This chapter discusses criteria that are used in everyday life to determine whether something has been designed, and applies them to the living world, and whether or not design is a legitimate explanation for life's complexities.

**1. This chapter mentions several instances that point to intelligent design. Discuss three of them.**

- (a) give an example of *specified complexity* - there are several mentioned (p. 118)
- (b) give an example of *repetitive arrangement* of atoms (p. 119)
- (c) give an example where the design criterion may also be described in terms of information (p. 120)

**2. Michael Behe, in his book, *Darwin's Black Box*, talks about *irreducible complexity*. What is irreducible complexity? (p. 122)**

Information specifies that many parts are needed to make a machine work. Often, the removal of one

part can disrupt the whole machine. Therefore, there are a minimum number of parts without which the machine won't work.

### 3. What example does Behe give? (p. 122)

The example given is a mousetrap. If you remove just one part, you reduce its complexity and destroy its function entirely.

### 4. Give at least two examples within living organisms that show irreducible complexity. (pp. 122-123)

- the blood-clotting system
- the form of vision in any living creature
- the 'simple' cell

### 5. What is the 'general theory of evolution'? (p. 125)

The theory that all the living forms in the world have arisen from a single source which itself came from an inorganic form (molecules to man). The evidence that supports this (theory) is not sufficiently strong to allow us to consider it as anything more than a working hypothesis. (See footnote #14, p. 125)

### 6. What are common terms for the theory that the first living cell came from non-living molecules? (p. 125)

Chemical evolution and abiogenesis.

### 7. Even if we grant evolutionists the first cell, there is still one remaining problem. What is it?

The problem of increasing the total information content. To go from the first cell to a human means finding a way to generate enormous amounts of information.

## CHAPTER 10: Conclusion

The book (*Refuting Evolution*) addressed the main arguments for evolution presented by the National Academy of Science. *Refuting Evolution*, in particular, covered the following areas:

Facts do not speak for themselves, but must be **interpreted** according to a framework. Evolutionists are **biased** toward naturalism. Creationists admit they are **biased** in favor of creation as revealed in the Bible. Both groups are working with the same *facts*. Both groups interpret the facts differently.

Those who adhere to a Biblical creation/corruption/flood framework teach that organisms change

through time, and that mutations and natural selection play a large part in this. So do particles-to-people evolutionists. The difference is that evolutionists **assume** that the changes eventually increase the information content and that a single living cell was the ancestor of all other life. Creationists believe that Creator God created separate kinds.

Birds are unique creations with wings and feathers designed for flight, and special lungs - completely different from any reptile. It is reasonable to conclude that birds did not evolve from non-birds.

Whales are mammals *designed* for life in water. The NAS asserts that whales evolved from land animals. On close analysis, however, these assertions do not stand up.

Humans are very different from apes, especially in intelligence and language. The NAS gives a series of *alleged* ape-man skulls. The evidence, however, shows that humans and australopithecines are distinct *kinds*. Included in this section is an analysis of various parts of the anatomy of both *kinds*. A common creator is a better explanation for both the similarities and the differences.

The ‘big bang’ theory is also presented by the NAS. However, there is no satisfactory explanation that conveys how the universe could come into existence without a cause, or for that matter, with regard to the formation of stars and solar systems after such a ‘bang’.

*Teaching about Evolution* teaches that the Earth is billions of years old and uses the fossils and radiometric dating as ‘proof’. There is evidence, however, that many rocks and fossils were formed by catastrophic processes, which is consistent with the Biblical framework that includes a global flood. Radiometric dating relies on several untestable assumptions about the past, and the methods have often proven false or self-contradictory.

Finally, it is shown that the design explanation is legitimate and that the only reason to reject it is an *a priori* faith in materialism.