

Reconciling Science and the Bible

Lesson 3: Did dinosaurs really exist?
Just How old is the Earth?

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Lessons: Reconciling Science and the Bible

1. 7 days of creation
2. In the Beginning (the Big Bang)
3. **Did dinosaurs really exist? How old is the Earth?**
4. The Existence of God: The Ontological Argument
5. The Existence of God: The Anthropological Argument
6. The Existence of God: The Argument from Design
7. The Existence of God: The Argument from Intelligent Design
8. What is truth? Is the Bible true and can you trust it?
9. Was Jesus a REAL person?
10. Why does God allow evil to exist?
11. Is there life after death?
12. Is God multidimensional?
13. Living an intentional life!



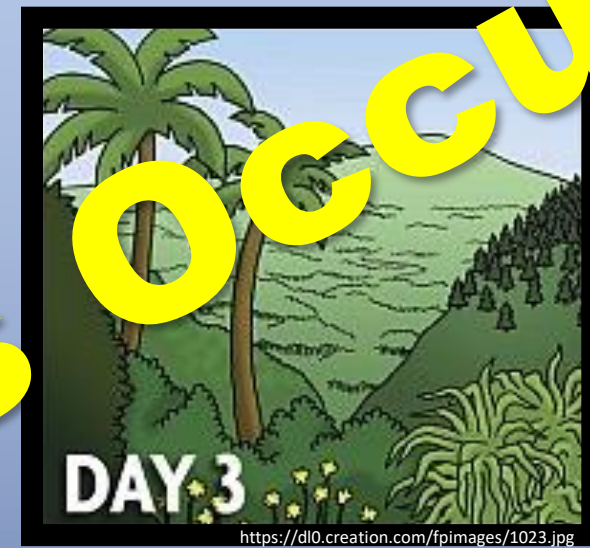
What might the Israelites Know of Creation in Egypt?

- During the Old Kingdom, numerous creation myths appeared
- There were several “creator gods” taught in different parts of Egypt
- In all the myths, the earth emerged from an infinite lifeless sea (“Nu”) when the sun rose for the first time.
- A pyramidal mound arose out of the water at Thebes (similar to what happens with the perpetual flooding and receding of the Nile each year)
- There were many gods in the water surrounding the mound in the sea and they caused the rise of the mound
- The Sun rose out of the mound as a heron, falcon, scarab beetle, or human child to circle the earth
- A few of the different gods were: Hermopolis (8 water Gods) , Heliopolis (Atum or Ra), Thebes (Amun,) Memphis (Ptah)
- Moses described a single unseen God, the creator of all things (even Egypt)

What Might the Israelites Know of Babylonian Creation?

- Babylon was a flat circle of land that floated on fresh water which was amidst a great salt-water ocean
- There were two gods: Apsu (fresh water) and Tiamat (salt waters) though there were several other “brother” gods in the waters
- Apsu and Tiamat fought over the noise made by their brothers and appealed to the greater god Ea to kill them
- Instead, Ea killed Apsu and banished Tiamat and then became the supreme god
- In time Ea bears a child, Marduk, a god greater than himself
- Marduk wars with Tiamat, kills her, and forms the world from her corpse
- Eventually, Marduk creates mankind to serve him
- He builds his home in Babylon where all the gods reside

The Creation Account (Genesis 1)



When Did This Occur?

The Bible Does not Date the Earth

- The only guidance we have from the Bible regarding the earth's age is Genesis 1:1 "In the beginning, God created the heavens and the earth..."
- The Bible does NOT tell us how old the earth and planets and universe are
- The account of the creation is divided into days which could have been literal 24 hour days or could have been ages of time or simply a literary device
 - The word "*yom*" (day) in Hebrew is used 2,247 times in the Bible
 - 1,800 times *yom* represents a 24 hour time period and the rest refers to a much longer period of time (<https://www.compellingtruth.org/day-age-theory-Genesis-days.html>)
- The use of "evening" (*ereb* in Hebrew) and "morning" or "daybreak" (*boqer*) would seem to signify that the day was a normal 24 hour period...these two words consistently in the Bible mean evening and daybreak

Two Competing Christian Ideas about Earth's Age

- Young Earth (Creationism)

- Creation.com <https://creation.com/age-of-the-earth>
- Universe and Earth: <10,000 years
- No Evolution, all life created fully functioning in 6 literal 24hr days
- 1968 US Supreme Court Epperson vs State of Arkansas...Creationism violates Establishment Clause
- 2005 US Supreme Court Kitzmiller v Dover...Intelligent Design is religious theory not science
- Bill Nye v Ken Ham, 2014 3-hour debate of Science v Creationism

- Old Earth (and Science)

- OldEarth.Org <http://www.oldearth.org/old.htm>
- Universe: 13.77B, Earth: 4.543B
- Evolution, all life evolved from simpler forms over 4.543B years
- 1987 Supreme Court, Edwards vs Aguillard struck down a “teach both in schools” Louisiana law
- Intelligent design 1990’s is the idea that a creator can be inferred from looking at the design of nature
- Creationism not taught in schools, it violates Establishment Clause

When did Death Enter the World?

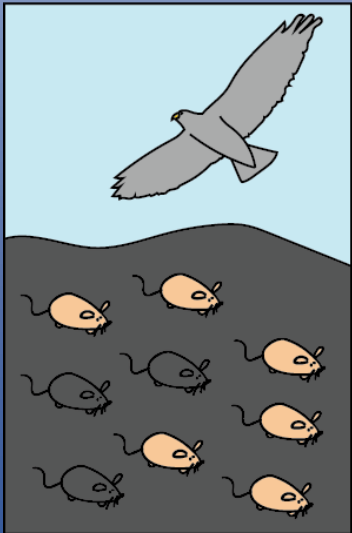
- Rom 5:12 Therefore, just as sin entered the world through one man, and death through sin, and in this way death came to all people, because all sinned...
- Adam and Eve's sin heralded death; there was no death before their sinful act
- Two possible interpretations:
 - *Paul's statement is literal and it applies to all living things so that plants and animals could not have existed for multiple years or eons before Adam and Eve as there was no death prior to Adam and Eve's sin (argument for Young Earth)*
 - *Paul's statement is not talking about literal death, it is talking about spiritual death, or separation from God which is what sin does (argument for Old Earth)*

Why is the Age of Earth Important?

- To a Young Earth creationist
 - The age is not really that important, but it seems the earth is not as old as Science says
 - The Earth and its creatures were created certainly less than 10,000 years ago
 - God created things in a literal six day period as Genesis says
 - The idea of evolution is not accurate so there is no need to justify an old earth
 - The science for dating the earth is invalid and error-ridden and cannot be trusted
- To an Old Earth creationist (and scientists)
 - The age is extremely important!
 - For the theory of Evolution to be true, there would need to be MANY eons of years for it to work
 - The universe was created in a Big Bang 13 billion years ago
 - The earth was formed almost 5 billion years ago
 - Evolutionary processes have shaped all existing beings over that time span
 - The science for dating the earth is valid and can be trusted

Evolution: Natural Selection

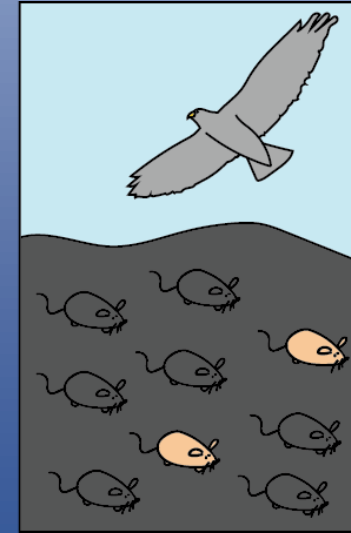
- Charles Darwin's On the Origin of Species, 1859
 - Living organisms have descended with modifications from earlier species
 - Natural Selection is the driving force...
 - Some inheritable traits are passed along genetically, some traits are better than others
 - The ones that are more “fit” survive over time and the less “fit” ones die out
 - The “survival of the fittest” (those more adaptive) shapes the development of the species



At first, there are an almost equal number of tan and black mice



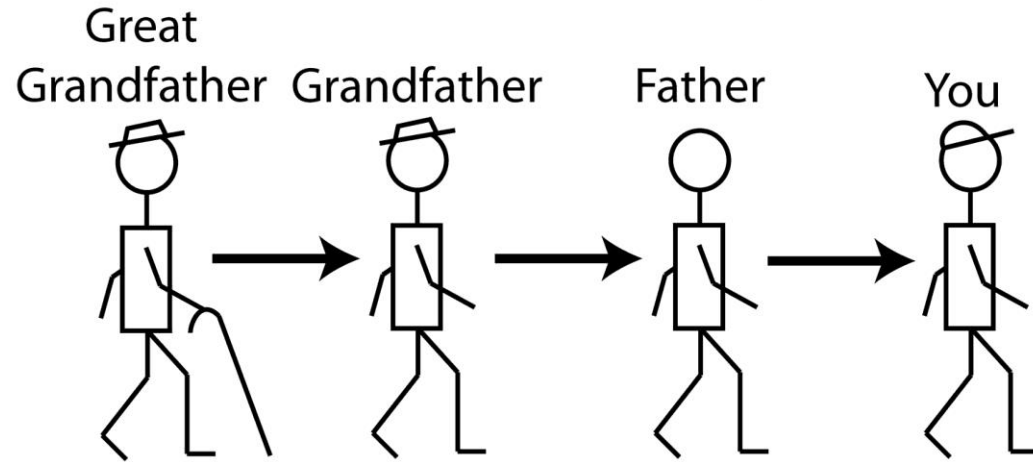
Tan mice are more easily seen by predators and are eaten more often



In time, tan mice dwindle while black mice thrive.

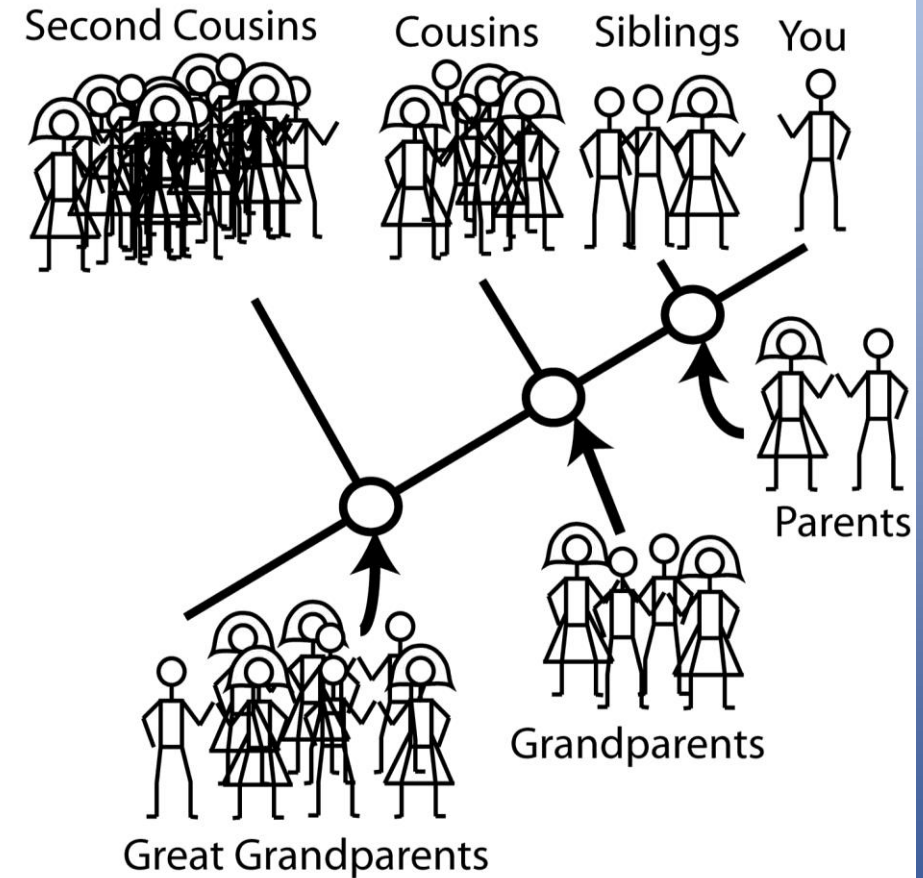
Evolution: Common ancestry

This is NOT Your Family Tree



Common Ancestry: A group of organisms share a common descent.

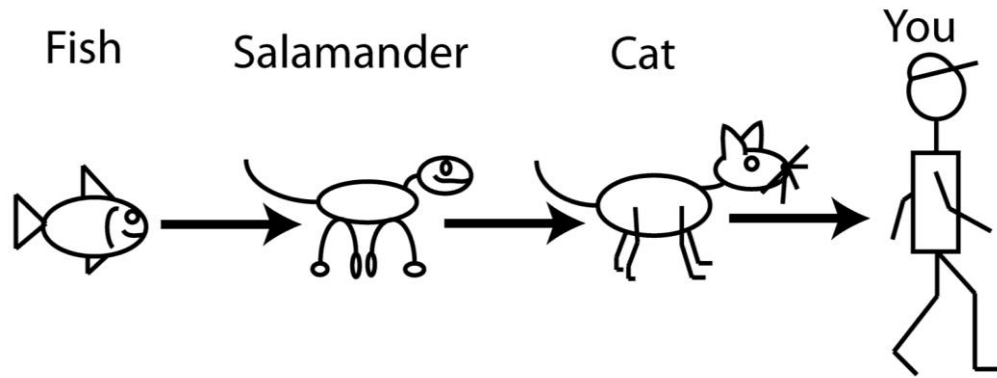
This is Your Family Tree



http://www.indiana.edu/~ensiweb/images/famtree_phyloh.jpg

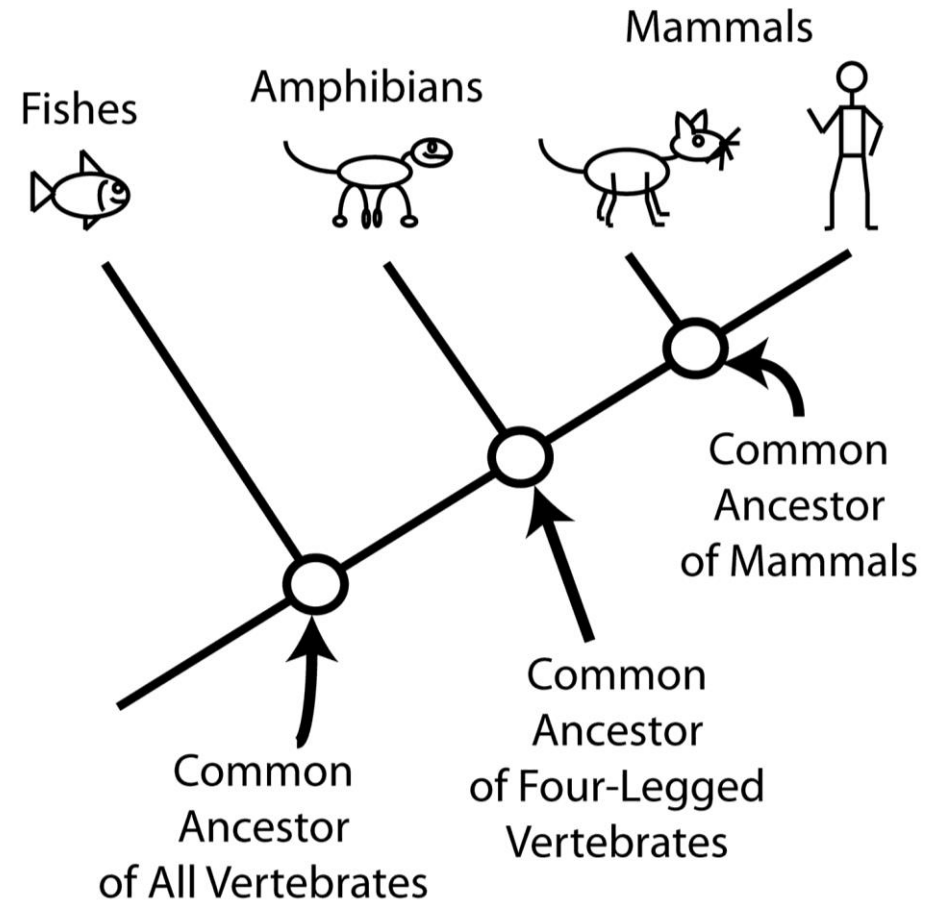
Evolution: Common Ancestry

This is NOT Evolution



Common Ancestry: Groups of organisms share a common descent.

This is Evolution



http://www.indiana.edu/~ensiweb/images/famtree_phyloh.jpg



One Common Ancestor of All Life

- Charles Darwin: “Probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed.” (Darwin, Charles. *On the Origin of Species*, London: John Murray, 1859)
- Current thought is there were probably a few common ancestors, perhaps one for each of the 5 Kingdoms of Life

Evidence for a Common Ancestor for All Life

- Common Biochemistry
 - All known forms of life have genetic encoding transcribed into RNA.
 - 23 proteins are common to all forms of life (plants, bacteria, bugs, slugs, birds, humans)
 - 1 common set of enzymes is present in all living things
 - 6,331 genes are common to all living animals
- Common Genetic code
 - All living things have a common genetic code
 - DNA triplets of T, C, A, G
- It is reasoned that all life may have arisen from a single common ancestor that lived 650 million years ago in the Precambrian period

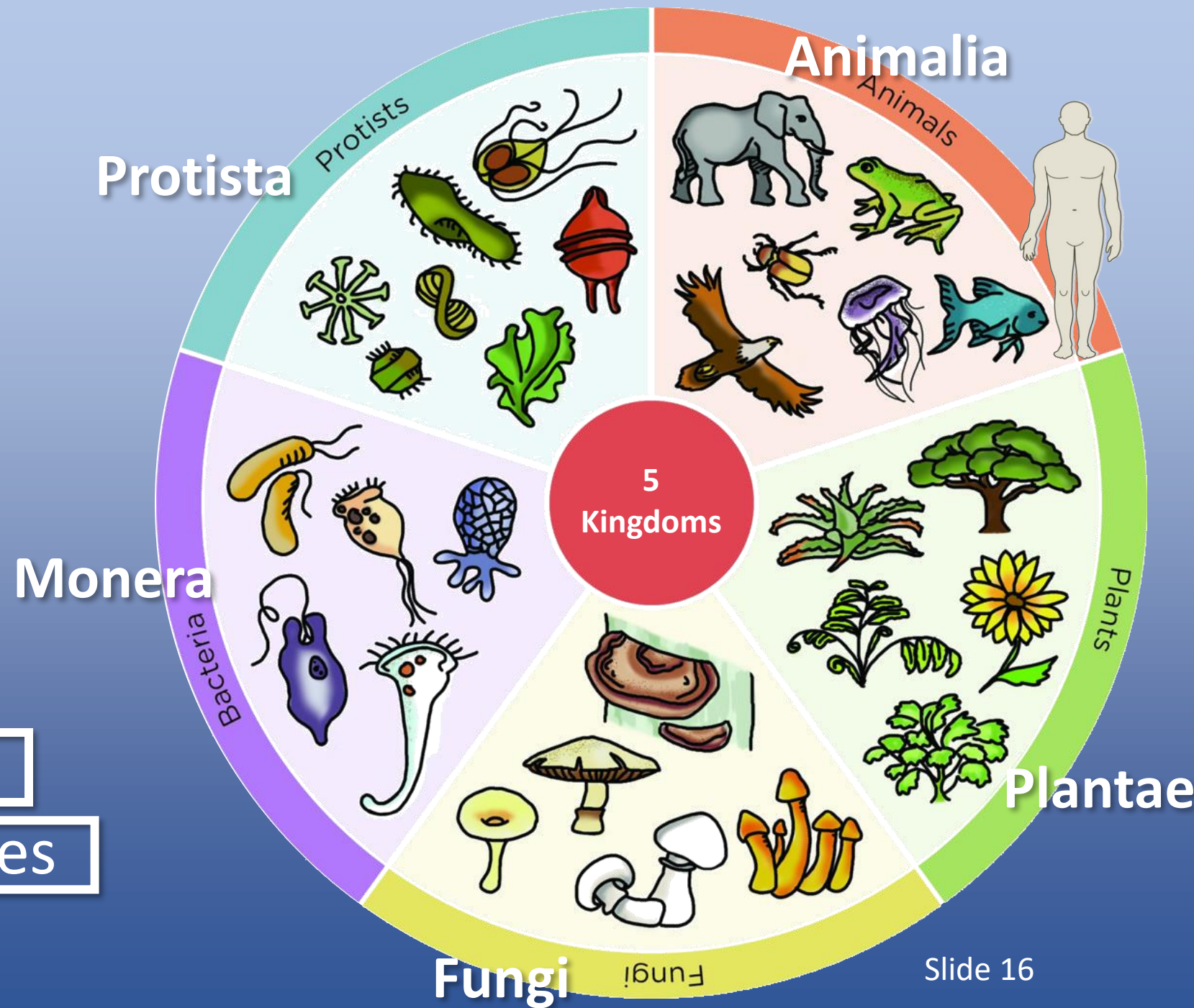
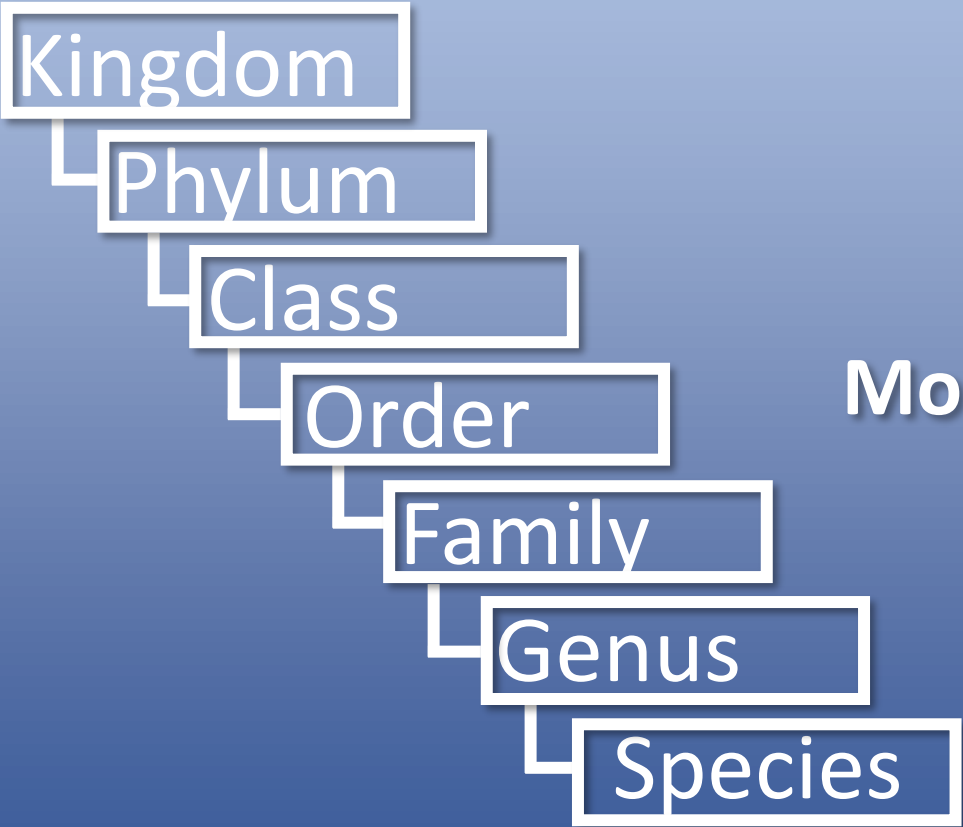


The Bible's Account

- Does the Bible teach “one common ancestor”?
- Not from **one** common ancestor, but perhaps a common ancestor per “kind”
 - **Day 3** Gen 3:11 Let the land produce vegetation: seed-bearing plants and trees
 - **Day 5** Gen 3:20 Let the water teem with creatures
 - **Day 5** Gen 3:20 Let the birds fly across the vault of the sky
 - **Day 6** Gen 3:24 Let the land produce living creatures
 - **Day 6** Gen 3:26 let us make mankind in our image, in our likeness, so that they might rule over everything
- While Darwin supposed that ultimately, all lifeforms had a single common ancestor, Science seems to allow for the possibility of multiple common ancestors per “kingdom” (what the Bible refers to as “Kinds”)

5 Kingdoms of Life

Classifications



Science Attempts to Date the Earth



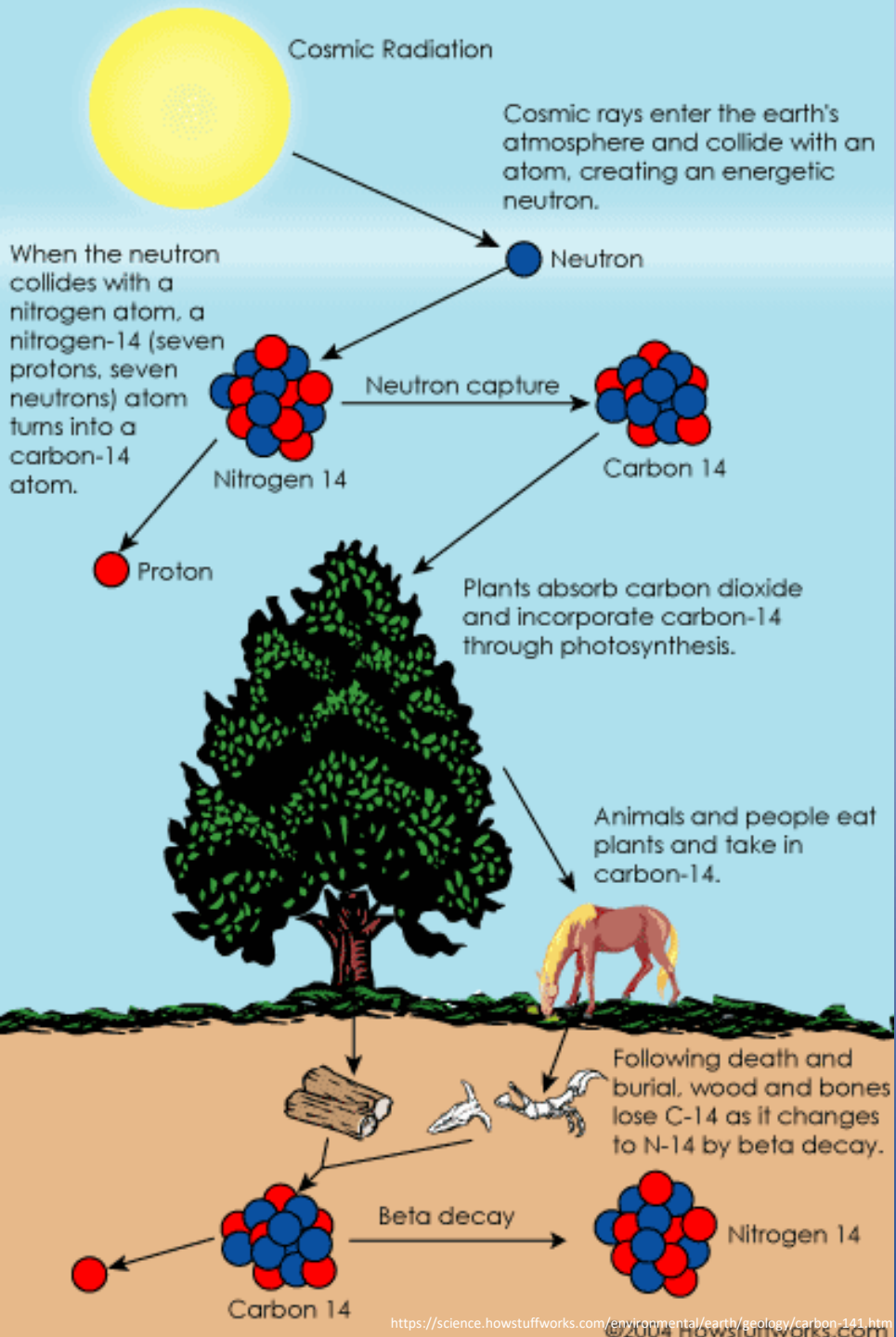
- In the 1700's
- Calculated bible lineages from Jesus (AD 1) back to Adam
- Covers about 4,000 years



- Von Helmholtz, 1856: The sun would have been very bright and hot. Over time, it would have condensed and cooled to its present size. That would have taken about 2M years.
- Lord Kelvin, 1890: The earth would have been a white-hot mess at first and cooled gradually over time...about 86M years ago.
- James Jolly, 1890's: It would take 89M years for salt in the ocean to reach its current levels



- Radioactivity was discovered in the early 1900's
- Measuring radioactive decay became more accurate in 1950's using carbon dating
- Dating the age of things based on radiocarbon decay and radiometric dating determined the universe is 13.9+B years old and earth is 4.5B years old



Radiocarbon Dating

- In all living animals, the ratio of normal Carbon 12 to radioactive Carbon 14 is constant.
- C^{14} atoms are always decaying, but they are added back in at a stable rate.
- All living animals, plants, and humans have the same ratio of C^{14} to C^{12} .
- But, upon death, C^{14} is not replenished and is eventually depleted as a result of constant radioactive decay.
- Looking at the amount of C^{14} left in a dead sample relative to C^{12} (which stays stable after death) allows for accurate dating.
- But, this only works for things that are less than 60,000 years old
- And, for things born after the 1950's this method may not work so well due to all the nuclear bombs, nuclear reactors, and nuclear tests

What is Radiometric Dating?

- A method for dating non-organic materials (rocks)
- It uses the same basic premise as radiocarbon dating, only it uses ratios other than C^{12} to C^{14} (rocks do not contain carbon) such as Uranium to Lead, Rubidium to Strontium, and Potassium to Argon
- It uses the decay of isotopes in the sample and measures their ratio
- It can date materials back to billions of years

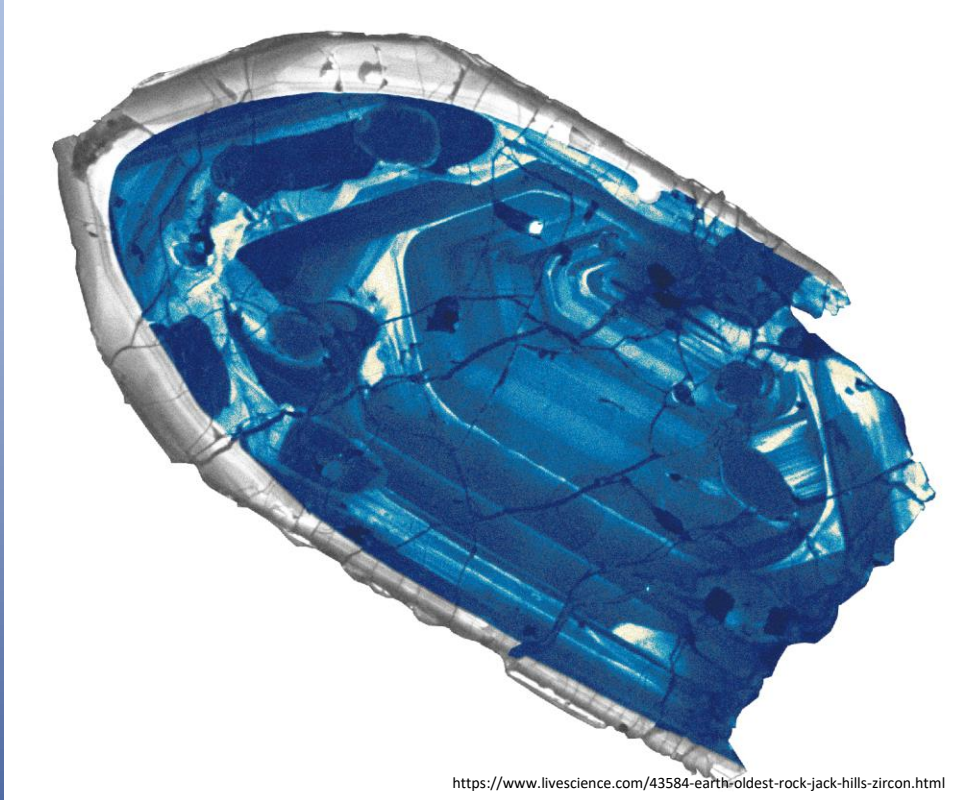


Radiometric Dating of Non-living things

- The *principle* is the same as with C^{14} dating, but Carbon is NOT used for rocks
- Rocks contain certain amounts of radioactive elements (Isotopes)
- These radioactive elements degrade over time due to radioactive decay
- Potassium (K^{40}) will degrade into Argon (AR^{40}) very, very slowly over time, Uranium into Lead, and so forth
- Noting the ratio of K^{40} to AR^{40} in a sample tells how long the rock has been in existence



What does Science Say about the Age of Earth?



- Based on radiometric dating, the oldest known rocks on earth are zircons from Australia
- The rock shown here is 4.375 billion years old, according to radiometric dating.
- Caution is suggested with the date of any rocks because they could have been contaminated by radiation at some point in their lifetime.

Fossil Record in a 24-hour Clock



Evolution of Life on Earth (According to Science)

- Science has dated the earth to 4.6B years by numerous consistent radiometric dating of rocks
- Earliest life on earth has been dated to 3.8 billion years ago
- Complex life spread through the ocean and diversified into all basic body plans that still exist today
- Swimmers gave way to armored swimmers, then to bony fish, tetrapods, amphibians, reptiles, and dinosaurs...all with the same basic body shape
- Mammals appeared (whales and then land mammals) about 160 million years ago
- Petroleum was formed about 150 million years ago
- Homo Sapiens appeared about 5.5 million years ago
- Neanderthals appeared in Europe about 250,000 years ago

The Creation of Man (According to the Bible)

Genesis 1:26-31 ²⁶ Then God said, “Let us make mankind in our image, in our likeness, so that they may rule over the fish in the sea and the birds in the sky, over the livestock and all the wild animals, and over all the creatures that move along the ground.”

²⁷ So God created mankind in his own image, in the image of God he created them; male and female he created them.

²⁸ God blessed them and said to them, “Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.”

²⁹ Then God said, “I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. ³⁰ And to all the beasts of the earth and all the birds in the sky and all the creatures that move along the ground—everything that has the breath of life in it—I give every green plant for food.” And it was so.

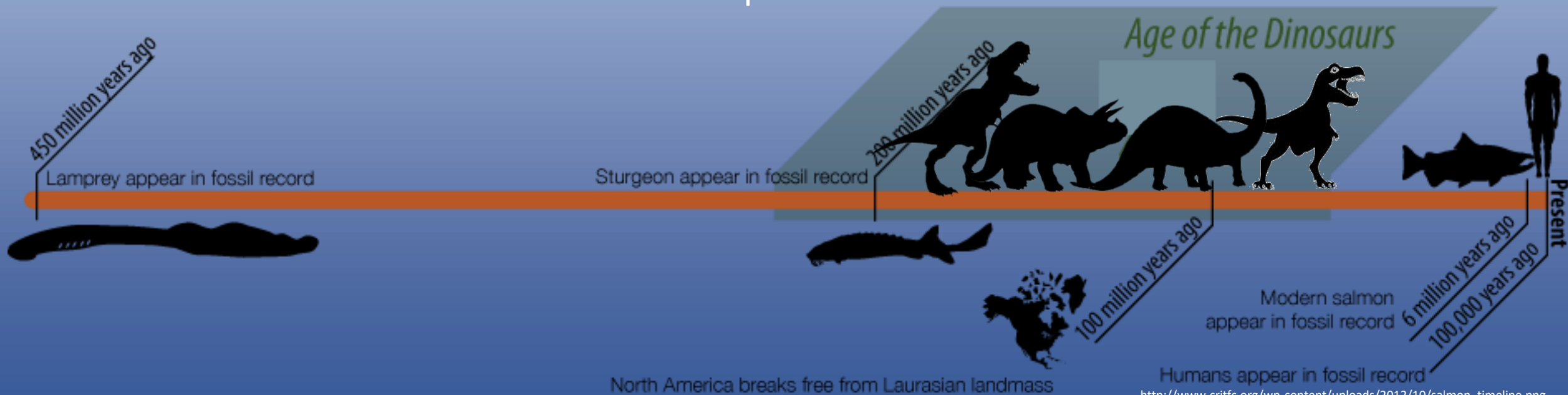
³¹ God saw all that he had made, and it was very good. And there was evening, and there was morning—the sixth day.

So, Why is the Earth's Age Important?

- To a Young Earth theorist...
 - Evolution is not valid since created things were fully formed as they are today and able to procreate at the time of their creation
 - God created the earth and all living things less than 10,000 years ago over 6 literal 24-hour days
 - Radiocarbon and other radiometric dating processes are inaccurate and error prone
 - The Bible's account is actual literal history
- To an Old Earth theorist...
 - Evolution is at play and there is sufficient proof, but still it is referred to as a theory
 - God created the universe in a Big Bang the remnants of which can be observed today
 - The age of the universe is 13 Billion years and the earth was created 4.5 billion years ago based upon radiocarbon and other radiometric dating techniques
 - The Bible's account is a metaphor, simple story, easy to understand version of what really happened

Did Dinosaurs Exist?

- According to the United States Geological Society (USGS)
 - Dinosaurs lived on earth 250 million years ago for about 165 million years
 - Dinosaurs became extinct 65 million years ago
 - Man appeared on earth 100,000 years ago; Dinosaurs had been extinct by then for 65 million years
 - Dinosaurs and man did NOT overlap



http://www.critfc.org/wp-content/uploads/2012/10/salmon_timeline.png

Why No mention of Dinosaurs in the Bible?

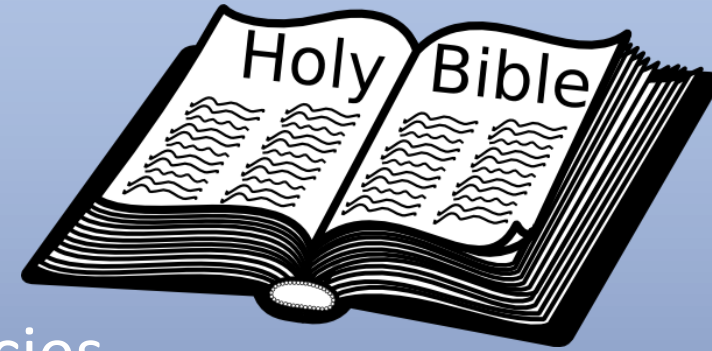


- Actually, there may be a few...
 - Isa 27:1 In that day, the LORD will punish with his sword - his fierce, great and powerful sword- *leviathan the gliding serpent, leviathan the coiling serpent*; he will slay the monster of the sea.
 - Job 40:15-18 Look at *Behemoth*, which I made along with you and which feeds on grass like an ox. ¹⁶ What strength it has in its loins, what power in the muscles of its belly! ¹⁷ Its tail sways like a cedar; the sinews of its thighs are close-knit. ¹⁸ Its bones are tubes of bronze, its limbs like rods of iron.
 - Ps 148:7 Praise the LORD from the earth, you *great sea creatures* (KJV says dragons) and all ocean depths
- Young Earth Theorists:
 - If dinosaurs ever did exist, they existed alongside mankind

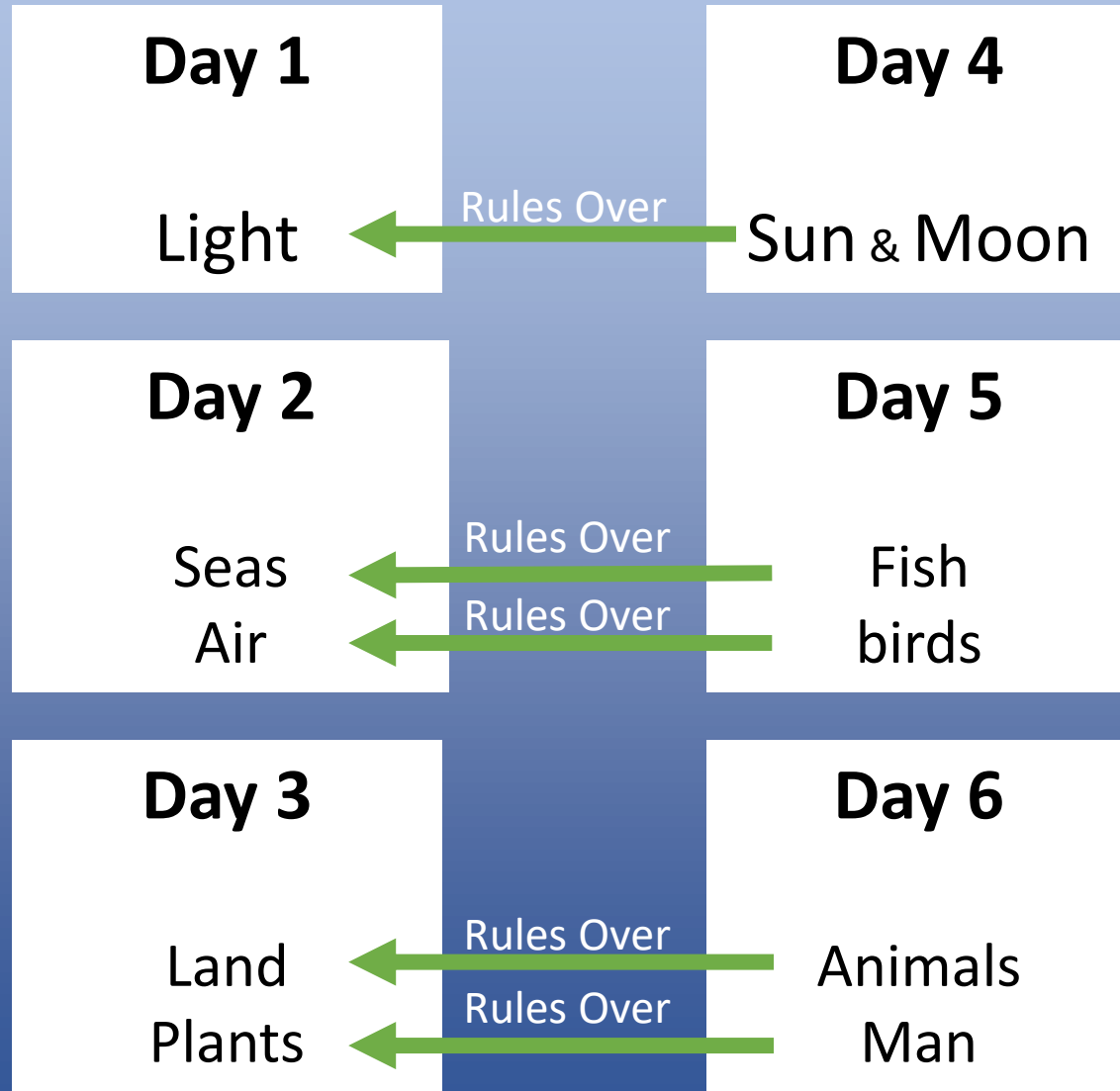
One Possible Way to Reconcile Science & Bible

- The Universe is 13.5 billion years old, as Science says
- The Earth is 4.5 billion years old as Science says
- Undirected evolutionary processes have been at work
- God used Darwin's evolution to create variation in species
- God knew that one day Man would appear
- He used undirected evolution to create all living things
- He gave Moses a simple story to explain the beginning
- Genesis 1 is just a simple story, not history
- The Bible's events line up with Science's explanations nicely

(This is NOT Theistic Evolution where God is directing or guiding evolution)



Another Way to Think About It: Framework

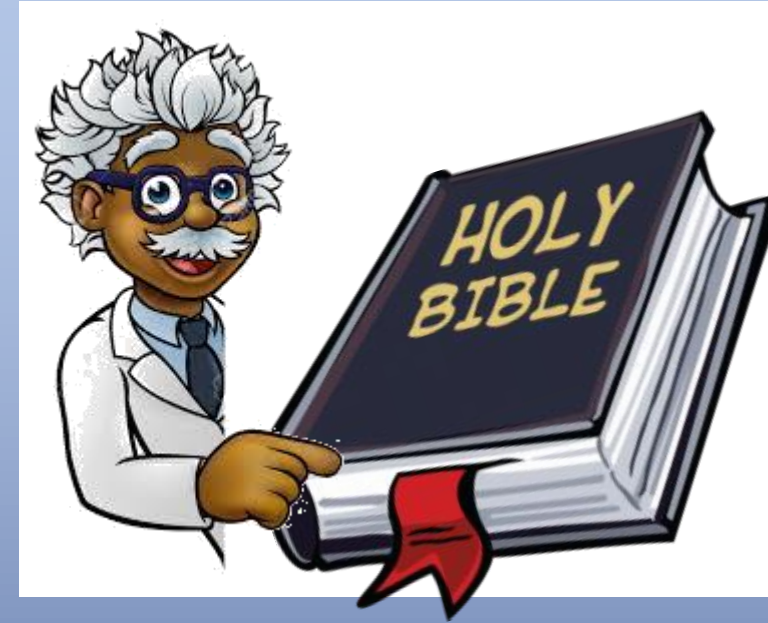


- The “Days” in Genesis may have nothing to do with historical time
- They are literary devices to communicate God and man and
- The Genesis account of the creation is not historical
- Earth can be as young or old as you want it to be as Genesis is not talking about literal days/time

Day 7
God’s Own Rest which We will Share

Reconciling Science and the Bible

- Goal: To Reconcile Bible and Science
 - Take some form of the Old Earth approach or Framework theories
 - The order of created things in Gen 1 lines up almost exactly with the creation of things as described in Science!
- Goal: Not To Reconcile Bible and Science
 - Take some form of the Young Earth approach
 - Disregard science's explanations of: Creation, age of the earth, radiometric dating, fossil record, etc.
 - Discredit science whenever it is presented
- It is totally YOUR choice. But, you must decide!



You CAN Reconcile These

Science

- Genesis 1 is a story (not actual history)
- The age of the universe is 13 billion years
- The age of earth is 4.5 billion years
- Man first appeared about 100,000 years ago
- Evolutionary processes have been and are at play
- Diversity in species occurs through natural selection
- The order of created things in Science matches the Bible
- The Big Bang/inflation is “In the beginning God created”
- God used undirected evolution to create Adam and Eve

Bible



Support sites for a Young Earth

- Creation Today <https://creationtoday.org/evidence-for-a-young-earth/>
- Rational Wiki [https://rationalwiki.org/wiki/Young Earth creationism](https://rationalwiki.org/wiki/Young_Earth_creationism)
- John Morris, The Young Earth, Master Books Printing, 1994
- Sites
 - Creation Research Society <https://creationresearch.org/>
 - Creation Ministries International, <https://creation.com/>
 - Institute for Creation Research, <http://www.icr.org/homepage/>
 - Creation Science Movement, <http://csm.org.uk/>
 - Creation Research Science Education Fund, <http://www.worldbydesign.org/>
 - The Revolution Against Evolution, <https://www.rae.org/>
 - The ARK Foundation, <http://www.arky.org/>
 - Creation Research, <https://www.creationresearch.net/>
 - Center for Scientific Education, <http://www.creationscience.com/onlinebook/>
 - Associates for Biblical Research, <http://www.biblearchaeology.org/>
 - The Young Earth Creation Club, <http://www.creationists.org/>

Support sites for an Old Earth

- Evidence for God http://www.godandscience.org/youngearth/old_earth_creationism.html
- Rational Wiki https://rationalwiki.org/wiki/Evidence_against_a_recent_creation
- Cross Examined Org <https://crossexamined.org/why-i-reject-a-young-earth-view-a-biblical-defense-of-an-old-earth/>
- Sites
 - Northwest Creation Network, <http://nwcreation.net/ageold.html>
 - Christian Research International (CRI), <http://www.equip.org/about/>
 - Old Earth Creationism, <http://www.oldearth.org/faq.htm>
 - Answers in Genesis, <https://answersingenesis.org/creationism/old-earth/>
 - Rational Christianity, https://www.rationalchristianity.net/creation_evolution.html