# 31.1 Darwin, Evolution and Fossils

Biology

**Summarize main points from each video.**

**Video Title / topic** _____

**Video Title / topic** _____

**Video Title / topic** _____

# Topic Introduction

**Summarize your understanding of each paragraph.**

When organisms die, they often decompose or are consumed by scavengers, leaving no evidences of their existence. However, some organisms are preserved. The remains from a past geologic age embedded in rocks by natural processes are called fossils.

These fossils are extremely important for understanding the evolutionary history of life on Earth, as they provide direct evidence of evolution and detailed information on the ancestry of organisms.

For fossilization to take place, the traces and remains of organisms must be quickly buried so that weathering and decomposition do not occur. Skeletal structures or other hard parts of the organisms are the most commonly occurring form of fossilized remains.

As an animal dies, the organic materials gradually decay, such that the bones become porous. If the animal is subsequently buried in mud, mineral salts infiltrate into the bones and gradually fill up the pores. The bones harden into stones and are preserved as fossils.

http://www.darwinwasright.org/fossil_record.html

# Read/Summarize Text

1. **Read the passage.**
2. **Underline key expressions in each sentence.**
3. **Re-write each word (or expression) you underlined.**
4. **Summarize the passage.**

*Evidence of Paleontology.*

1

2

It is possible to find out how a particular group of organisms evolved by arranging its fossil records in a chronological sequence. Such a sequence can be determined because fossils are mainly found in sedimentary rock.

Sedimentary rock is formed by layers of silt or mud on top of each other; thus, the resulting rock contains a series of horizontal layers, or strata. Each layer contains fossils typical for a specific time period during which they were made. The lowest strata contain the oldest rock and the earliest fossils, while the highest strata contain the youngest rock and more recent fossils.

http://www.darwinwasright.org/fossil_record.html

*Re-write words you underlined*

3

_____ _____ _____

_____ _____ _____

*Using a complete sentence, summarize or rephrase the passage*

4

# Read Text for Comprehension

Read this article for deeper understanding.  No summary is required, although you may want to circle, underline, or mark key ideas and words.

## Fossil Evidence in the Origin of Species

One of the most serious impediments to the acceptance of the evolutionary theory Darwin developed in the Origin of Species was the failure of the geological record to testify to the existence of the many transitional forms predicted by his account. Darwin was well aware of this difficulty and attempted to preempt his critics by issuing a series of pessimistic arguments that were intended to demonstrate that the fossil record is necessarily incomplete. He famously claimed, for example, that the geological record is “a history of the world imperfectly kept” of which we “possess the last volume alone, relating only to two or three countries.”

Although it is well known that Darwin relied on this type of reasoning to defend his theory (see, e.g., Herbert and Norman 2009, pp. 142–143), his optimistic remarks about the geological record have often been overlooked. These assertions are best described as a series of subtle hints that the theory might eventually be supported by fossil evidence. In the inaugural edition of the Origin—published as On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life—Darwin was careful to point out that we “continually forget how large the world is, compared with the area over which our geological formations have been carefully examined.”

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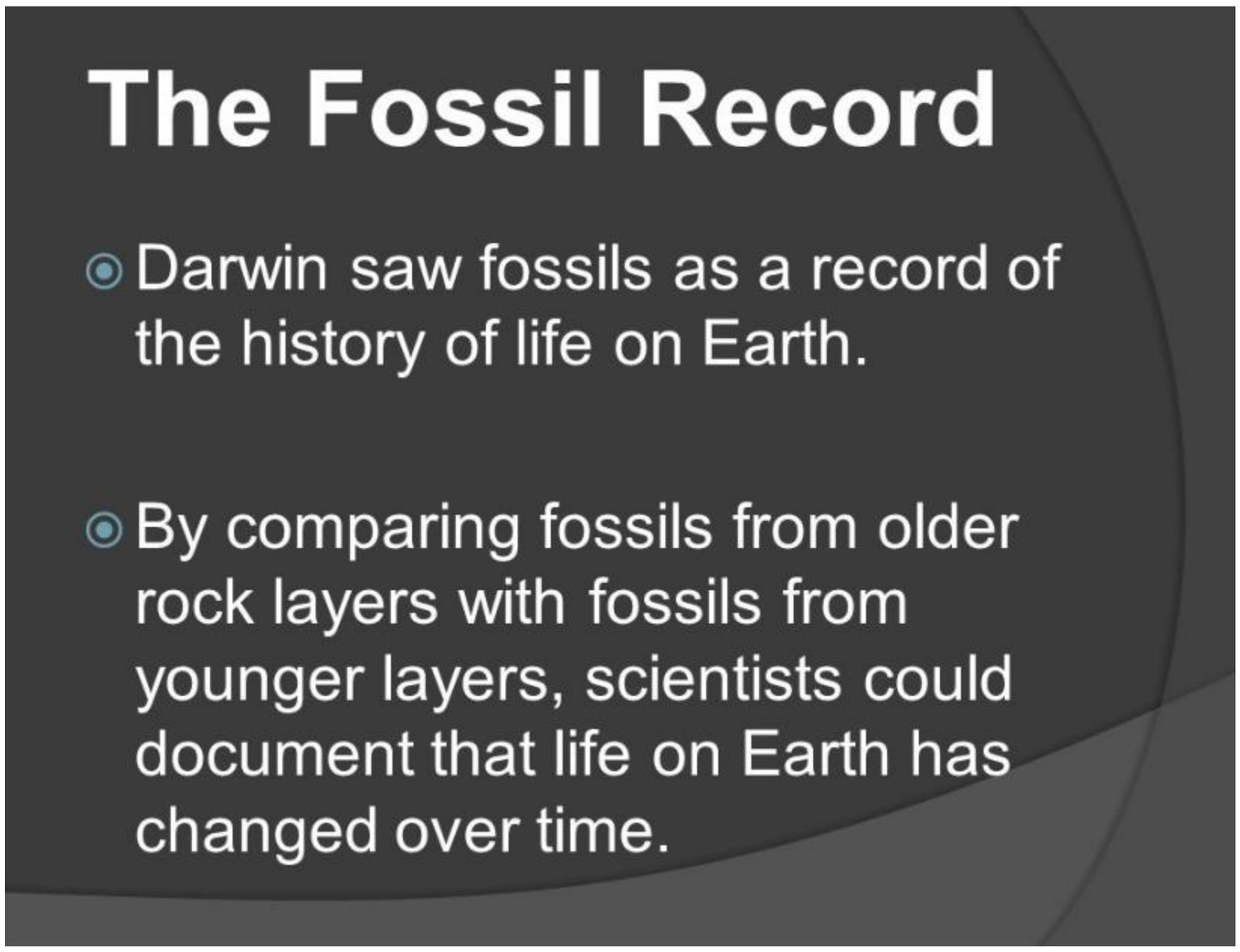
https://academic.oup.com/bioscience/article/65/11/1077/374311#

# Copy the Text

**Copy the text provided here … in the space below.**




http://slideplayer.com/slide/4373577/

**Copy text here …**

# Interpret a Graph

**Write the title of the graph _____**

**Circle the type of chart this represents**

*Bar Chart* *Line Chart* *Pie Chart* *Other*

**If applicable,**

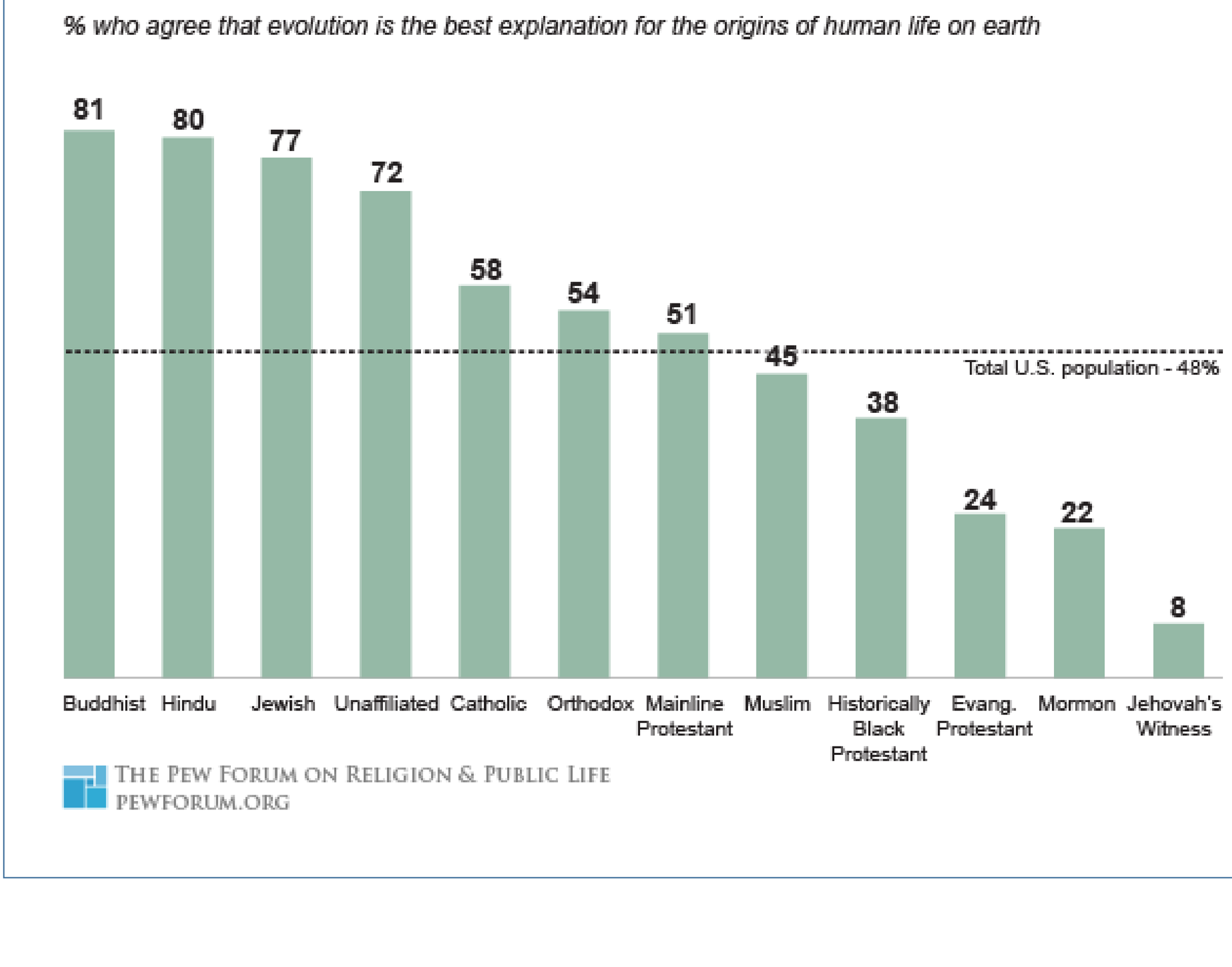
**What does the X-axis represent _____**

**What does the Y-axis imply _____**

**Summarize what this graph represents or conveys**

_____

http://factsaboutcharlesdarwin.weebly.com/uploads/4/9/1/3/49132933/359242313.png



# Show-Off Your Smarts!

**Instructions**

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

**Q1. How can this information be applied to a young-person's life?**

**Q2. How does this information apply to (or impact) communities?**

**Q3. When do scientists need to apply this information? How?**

**Q4. How would a person from 100 years ago view this information?**

**Q5. How does this topic connect to other science topics or math?**

*Write down at least three words introduced or covered by this topic.*

1.
2.
3.
4.
5.
6.

# Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.