



# Creation Lens

*Exploring the World, Discovering God*

*Grade Level: Grade 8*

*Title:*

## **Earth's Relative Age & Patriarchs of the Biblical Age**

*Denomination: Catholic*

*Lesson ID: ES-G8-01-CA*

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***Note: Web sites referenced in this lesson were valid at time of publication.***

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## **EARTH SCIENCE – GRADE 8 - CATHOLIC** **LESSON TITLE: Earth's Relative Age & Patriarchs of the Biblical Age**

**GENERAL CONCEPT: Relative age in history.**

### **SCIENCE LESSON CONCEPT**

- Earth's history by relative age, the law of superposition, law of original horizontality

### **GOAL OF SCIENCE LESSON**

- Students will investigate fossils and rock layers and their use in determining the relative geologic age and history of the Earth.

### **RELIGION LESSON CONCEPT**

- Church History: Patriarchs of the Jewish Scriptures

### **GOAL OF RELIGION LESSON**

- Students will understand that the past can lead and guide us in the present and help us set a course for the future.
- Students will learn that the characteristics of our patriarchs can provide us with role models and ideas of how to be participating members of our faith.
- Students will become aware of the layers of our tradition through the history of persons from our Jewish roots.

## **OUTCOME EXPECTED**

- Students will know that older layers of rock are usually below younger layers of rock (Law of Superposition).
- Students will be able to recognize fossils in rocks.
- Students will use rock layers to determine relative age.

## **MATERIALS NEEDED**

- Science Journal page: Earth's Age and Rock Layers
- Pen or pencil
- 1 slice of white bread per group
- 1 slice of wheat bread per group
- 1 slice of rye bread per group
- 1 container of jelly or jam (watch for allergies) per group
- 1 container of peanut butter per group (substitute another spreadable if someone is allergic to peanuts)
- Paper plates (one per group)
- Paper towels (several per group)
- Plastic knives
- Pictures of folds and faults in rock structures

## **OUTCOME EXPECTED**

- Students will determine the characteristics of a patriarch.
- Students will decide if the four patriarchs would be good role models.

## **MATERIALS NEEDED**

- Religion Notebook
- Pen or pencil
- Bible
- Websites, books and articles on the biblical patriarchs (Abraham, Isaac, Jacob, and Joseph)
- Dictionary
- Religion textbook
- Scrap paper
- Poster board or construction paper
- Markers or colored pencils

## SCIENCE METHODOLOGY

**NOTE: Students should WASH HANDS and make sure work area is clean before beginning this activity.**

- **SAY:** You are going to be creating layers of sedimentary rock using common household items - FOOD!
- **ASK:** In what direction are sedimentary rock layers deposited? (horizontally)
- **EXPLAIN** to the students that they will be working in small groups. Their job is to create sedimentary rock layers using different kinds of bread, jelly or jam, peanut butter or another spreadable.
- **HAVE** students write the key words on the Science Journal page:

*White bread – shale – light in color*  
*Peanut butter – conglomerate (mixture)*  
*Rye and wheat – shale (dark)*

*NOTE: Rock names can be adjusted for the lesson.*

- **HAVE** the students draw a diagram on the Science Journal page describing how they would like to deposit their rock layers. Remind students to label them using proper rock names.
- **INSTRUCT** the students that they must construct their section of sedimentary rock layers, starting from the bottom layer and working up.

## RELIGION METHODOLOGY

- **ASK:** What does the word Patriarch mean?
- **IF NO DEFINITION,** have [ ] ^ student use the dictionary and another student use the Religion textbook glossary to find a definition.
- **ASK:** Who are the four major patriarchs of Hebrew history? (Abraham, Isaac, Jacob, and Joseph)
- **SAY:** You are going to make a family tree of four of the patriarchs found in the Old Testament. I will give you a basic chart and you will use the Bible verses and the chart to complete the genealogy of the four major patriarchs. You will work in groups.
- **GIVE** each student the family tree handout. (see Religion Links section)
- **GIVE** the students Bible references where information about each patriarch can be found:
  - ~ **Abraham:** Genesis Chapters:12, 13, 14, 15, 16, 17, 18, 20, 22
  - ~ **Isaac:** Genesis Chapters 21, 22, 24, 25, 26, 27
  - ~ **Jacob:** Genesis Chapters: 25, 26, 27, 28, 29, 30, 31, 32, 33, 35
  - ~ **Joseph:** Genesis Chapters 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50
- **ALLOT** time for the research and completion of the Patriarch tree.

- **ALLOW** time for groups to construct sedimentary deposits.
- **AFTER** the students have created their model, instruct them to record the order of deposition. (1<sup>st</sup> deposited, 2<sup>nd</sup> deposited, etc.)
- **ASK:** Which is the oldest layer? (the one on the bottom)
- **HAVE** the students label this Layer A.
- **ASK:** Which is the youngest layer? (the one on the top)
- **HAVE** the students label all the layers, B, C, D, etc.
- **ASK:** Which layer is younger B or D? (D)
- **ASK:** How can you tell by looking at your model? (layer D is above layer B)
- **EXPLAIN:** Scientists use a rule called the LAW OF SUPERPOSITION (write this term on the board) that helps them to tell in what order sedimentary rock layers are deposited. This law states that “in horizontal rock layers, the bottom layers are older than layers deposited above them.” When scientists determine which layer is older than another they are giving a RELATIVE AGE (write this term on the board) for those rock layers. Knowing relative age can help in discovering events, fossils, and characteristics in Earth’s history.
- **HAVE** students do some research on local stratigraphy.  
NOTE: A good source would be your highway
- **SAY:** Group #1 will tell us Abraham’s story and characteristics and why he might be a good role model
- **HAVE** the group tell Abraham’s story pointing out his major characteristics and failings and how he is a role model for us. (willing to accept and follow God; was some times unsure and made mistakes)
- **BE SURE TO MENTION** Ismael and point out that Muslims regard Abraham as their patriarch too.
- **ASK:** Why do you think there is trouble between the Jews and the Muslims? (they both believe they are the true chosen descendents of Abraham)
- **HAVE** the groups report on Isaac, Jacob, and Joseph telling their story in the family tree and their role model characteristics.
- **IF POSSIBLE** show portions of the “Joseph and the Amazing Technicolor Dream Coat” video.
- **DISCUSS** why the students think these four men would or would not be great faith figures and role models for our church.
- **SAY:** God was working through His Spirit with the Patriarchs as the human family matured enough to receive Christ.
- **POSIT:** Patriarchs of the Bible are good role models because they followed God, had faith in God, but were not perfect in following God.

department or conservation department.

- **HAVE** the students draw a local highway cut stratigraphy segment.
- **POSIT:** Relative age of rocks can be determined by their position.
- **EXTENSION:** The teacher can extend this lesson further into folds and faults by placing all the bread models together in one line and showing how the horizontal lines are not continuous.
- **ASK:** What could have happened to make the rock shift since it was all one kind of rock that was deposited at the same time?
- **DEFINE** FOLD, FAULT, ANTICLINE, and SYNCLINE
- **USE** the bread models put together to demonstrate folds and faults.
- **HAVE** the students record the folds and faults on the Science Journal page.
- **REVIEW** pictures of folds and faults in rock structure.
- **POSIT:** Layers of the Earth's rocks can help us determine the relative age of an area of the Earth.

## SCIENCE LINKS

[www.middleschoolscience.com/earth.htm](http://www.middleschoolscience.com/earth.htm)

[Earth Science Lesson Plans](#) Activities using paper plates to teach about the universe! I, ROBOT - Lesson Plans for ... Earth & Sky - tons of information for teachers about the night sky ... Scroll down to faults and layers of the earth.

[www.youtube.com/watch?v=rc3da3-znK](http://www.youtube.com/watch?v=rc3da3-znK)

Principles of Stratigraphy and Cross-Cutting Relationships  
I am thinking about using this for 8<sup>th</sup> grade Earth science introduction to... Good YouTube video for students to watch.

## RELIGION LINKS

### SAMPLE PATRIARCH TREE

#### MAJOR PATRIARCHS

#### PATRIARCH # 1: ABRAHAM

SON: \_\_\_\_\_  
SON: \_\_\_\_\_

#### PATRIARCH # 2: \_\_\_\_\_

SON: \_\_\_\_\_  
SON: \_\_\_\_\_

#### PATRIARCH #3: \_\_\_\_\_

SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_  
SON: \_\_\_\_\_

#### PATRIARCH # 4: JOSEPH

## KEY WORDS

- PHYSICAL CHANGE
- CHEMICAL CHANGE
- HYPOTHESIS
- EVIDENCE
- FAULT
- FOLD
- ANTICLINE
- SYNCLINE
- CRUST
- LAW OF SUPERPOSITION
- FOSSILS
- SEDIMENTARY

## KEY WORDS

- PATRIARCH
- JEWISH
- ABRAM
- ABRAHAM
- SARAH
- ISAAC
- ISMAEL
- MUSLIMS
- JACOB
- JOSEPH
- TWELVE TRIBES OF ISRAEL