



Creation Lens

Exploring the World, Discovering God

Grade Level: Grade 4

Title:

Rotation And Revolution & Corporal Works of Mercy

Denomination: Catholic

Lesson ID: ES-G4-03-CA

Contact Info:

Exploring the World, Discovering God (EWDG)
Institute for Theological Encounter with Science & Technology (ITEST)
20 Archbishop May Drive, Suite 3400A
St. Louis, MO 63119

EWDG email: EWDG-Info@creationlens.org

EWDG web site: www.creationlens.org

ITEST web site: www.faithscience.org

Ph: 314.792.7220

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

Copyright by Exploring the World, Discovering God (EWDG), a pilot program of Institute for Theological Encounter with Science & Technology (ITEST). All rights reserved. The contents, or parts thereof, i.e., lessons/modules, may be reproduced for classroom educational use only. Any reprinting or reproducing for the purpose of sale is prohibited, and if done, party is subject to all legal sanctions.

© ITEST © EWDG



EARTH SCIENCE MODULE – GRADE FOUR - CATHOLIC LESSON 3: The Earth's Movements and We are moved to live our Faith.

GENERAL CONCEPT: Movement of the earth causes effects and we are moved to live our Faith.

SCIENCE LESSON CONCEPT

What are the effects of the earth's movements?

GOAL OF SCIENCE LESSON

Student will be able to define rotation and revolution of the earth.

OUTCOME EXPECTED

- Student will be able to tell the effect of rotation of the earth.
- Student will be able to tell the effect of revolution around the sun.

MATERIALS NEEDED

- Globe

RELIGION LESSON CONCEPT

The Corporal and Spiritual Works of Mercy move us to live our faith.

GOAL OF RELIGION LESSON

Student will be able to name the Corporal Works of Mercy.

OUTCOME EXPECTED

Student will be able to give 1 concrete example of how to live the Corporal Works of Mercy.

MATERIALS NEEDED

- List of the Corporal Works of Mercy to put in Religion Notebook

- Graph paper
- Pencil
- Flashlight with a narrow beam
- Science Journal Page: ROTATION AND REVOLUTION
- Pen
- Colored Stick with a removable dot
- Four cardboard signs: Summer, Fall, Winter, Spring
- Painter's Tape for elliptical orbit around the sun

SCIENCE METHODOLOGY

- **SAY:** The earth moves in two main ways. One way is called ROTATION.
- **HAVE** the student write notation on the Science Journal Page
- **DEMONSTRATE** rotation using the flashlight as the sun.
- **SAY:** The earth spins on its axis or poles – one time each 24 hours.
- **ASK:** Can someone put a stick-on dot on our city on the globe?

- Religion Notebook
- Pen/pencil
- Flip chart or board
- Marker or chalk

RELIGION METHODOLOGY

- **SAY:** We are going to study the Corporal Works of Mercy. What does corporal mean? Corpus is the Latin word for body. Yes, each Corporal Work of Mercy has something to do with ministering to the physical or bodily needs of each person.
- **HAVE** the class read the Corporal Works of Mercy from the list you provided to them.
- **ASK:** Who is supposed to do those things? (We are.)
- **ASK:** How in the world could we do the first one?
- **RECORD** answers on board or flip chart.

- **HAVE** one student hold the globe.
- **POSITION** the globe so that your city is facing the sun.
- **HAVE** one student hold the flashlight.
- **ASK:** Is it day or night in our city?
- **WHY?** We are facing the sun.
- **HAVE** the student holding the globe slowly turn it _ around.
- **ASK:** Is it day or night now?
- **WHY?** We are facing away from the sun.
- **SAY:** So every 24 hours the earth makes one complete rotation on its axis = 1 day.
- **HAVE** the student draw the demonstration on the Science Journal Page by the word "ROTATION".
- **SAY:** Another way the earth moves is called REVOLUTION.
- **WRITE** the word on the board or flip chart.
- **HAVE** the student write REVOLUTION on the Science Journal Page.
- **DO** the next demonstration. Place the sun in the center and the earth in an orbit around the sun.

- **REPEAT** the procedure with each of the Corporal Works of Mercy.
- **ASK** the student to record one way for each Corporal Work of Mercy in Religion Notebook. Review and discuss their ideas.
- **SAY:** Let's have some fun with what we have learned. I have some index cards with some situations on them. I am going to divide the class into groups of about 3 students. I am going to give each group a card and give you about 5 minutes to think of a way to act it out. Put the students into the groups and give each group a card. Allow 5 minutes to prepare.
- **HAVE** each group act out the skit.
- **HAVE** each student write a reflection paragraph or two about how he/she would feel doing one of the Corporal Works of Mercy.
- **HOMEWORK ASSIGNMENT:** Student asks someone in their family to help them do a corporal work of mercy. Allow a week-end to accomplish this.
- **POSIT:** When we do the Corporal Works of Mercy, we are doing what Jesus asked us to do. He asked us to be his hands and heart here on earth.

Put painter's tape in an elliptical orbit around the sun. Have 4 students hold the signs: summer, fall, winter, and spring.

Have the sun hold very still and not move. Start where the dot for your city is facing the sun. Be sure that the globe is tilted on its axis.

- **ASK:** If the sun is shining directly at us, what season is it? (Summer). Have the summer sign come and stand at that place on the orbit.
- **HAVE** the earth move slowly _ around the sun to the earth's right.
- **ASK:** Where is the sun shining now? Where is our city? (slightly away from the sun? What season is it? (Fall) Have the fall sign stand at that place in the orbit.
- **HAVE** the earth move slowly another _ turn.
- **ASK:** Where is the sun hitting directly? Where is our city? (Tilted away from the direct rays. What season is it? No direct sun rays – coldest –winter. Have the winter sign stand on the orbit.
- **HAVE** the earth slowly walk _ turn. What season is left? (spring). We receive some rays but not the most direct – warm, but not hot. (spring). Have the spring sign stand on the orbit.
- **HAVE** the earth slowly make another revolution around the sun, pointing out the season once again and explaining again why it is that season.

- **HAVE** the student draw the Revolution of the earth around the sun on the Science Journal Page.
- **ASK:** How long does it take the earth to make 1 complete revolution around the sun? (Around the sun = summer, fall, winter, spring = one year- 365 _ days.
- **REPEAT** the definitions of rotation and revolution.
- **POSIT:** The movement of the earth causes day and night and seasons on the earth.

RESOURCES, LINKS AND COMPUTER LESSONS

Science Links

(Teacher) Earth movements
<http://www.planetpals.com>

(Teacher) Earth movement ideas – lots of printouts
<http://www.kidsgeo.com/geography-for-kids/0017-the-earths-movements.php>

(Teacher) Many links for students. Teacher is asked to preview a link before giving it to a student.
<http://www.emints.org/ethemes/resources/S00000405.shtml>

Religious Links

(Teacher) Religion Textbook on-line resources.
<http://www.faithfirst.com>

(Teacher) Corporal Works of Mercy definitions
<http://www.secondexodus.com/html/catholicdefinitions/corporalworkssofmercy.htm>

Computer Lesson

(Teacher and Student) Using a paint program, make a “board” for a board game. Use a word processing program to make direction cards. Board could be “painted” with different earth views. Cards could give directions such as “You fed the hungry, rotate 20 degrees on your axis” or “You clothed the naked, continue 28 days in your revolution around the sun.”

KEY WORDS
EARTH SCIENCE – GRADE FOUR - LESSON 3 - CA



MOVEMENT
EFFECTS
ROTATION
REVOLUTION
AXIS
ELLIPTICAL
ORBIT
YEAR
DAY
SEASONS

CORPORAL
SPIRITUAL
WORKS OF MERCY
FEED THE HUNGRY
GIVE DRINK TO THIRSTY
SHELTER THE HOMELESS
VISIT THE SICK
VISIT THE IMPRISONED
BURY THE DEAD

KEY WORDS
EARTH SCIENCE – GRADE FOUR - LESSON 3 - CA



MOVEMENT

CORPORAL

EFFECTS

SPIRITUAL

ROTATION

WORKS OF MERCY

REVOLUTION

FEED THE HUNGRY

AXIS

GIVE DRINK TO THIRSTY

ELLIPTICAL

SHELTER THE HOMELESS

ORBIT

VISIT THE SICK

YEAR

VISIT THE IMPRISONED

DAY

BURY THE DEAD

SEASONS