



*Grade Level: Grade 4*

*Title:*

## **Electromagnetic Waves & Radiate Jesus' Love**

*Denomination: Catholic*

*Lesson ID: PS-G4-05-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](mailto:EWDG-Info@creationlens.org)

EWDG web site: [www.creationlens.org](http://www.creationlens.org)

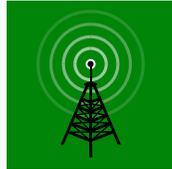
ITEST web site: [www.faithscience.org](http://www.faithscience.org)

Ph: 314.792.7220

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

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**PHYSICAL SCIENCE MODULE – GRADE FOUR - CATHOLIC**  
**LESSON 5: How Light Travels: How waves Propagate and How We Return the Love of Jesus**

**GENERAL CONCEPT: How Light Travels: How light waves propagate and How We Return the Love of Jesus**

**SCIENCE LESSON CONCEPT**

How is light/How are electromagnetic waves propagated?

**GOAL OF SCIENCE LESSON**

- Student will understand how waves, in general, are propagated
- Student will learn how light waves are propagated.

**OUTCOME EXPECTED**

Student will begin to understand how light travels.

**MATERIALS NEEDED**

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**RELIGION LESSON CONCEPT**

The love of Jesus is propagated by His first loving us. Our love for Jesus is shown by how we treat others.

**GOAL OF RELIGION LESSON**

- Student will learn that Jesus first loved us even though we are sinners.
- Student will learn that we return His love by the way we treat other people.
- Student will learn that love must radiate to others as light radiates into the darkness.

**OUTCOME EXPECTED**

Student will realize that how they treat others is critically linked to their love of Jesus

**MATERIALS NEEDED**

- Science Journal Page: HOW LIGHT TRAVELS
- Pen/pencil
- Shallow wide basin of water or a pond or fountain
- Pebbles
- Light bulb and lamp

- Crucifix
- Bible Selections: Jesus associating with sinners: blind, tax collector, Zacchaeus & Matthew 25: 35
- Shallow, wide bowl of water
- Pebble
- Flip chart or board
- Marker or chalk
- CD player
- Sacred Music CD

### SCIENCE METHODOLOGY

- **DEFINE:** Propagate for the students. Have them write it on the Science Journal Page.
- **SAY:** Light travels in waves. What are waves? Water in motion.
- **ASK:** What can cause the motion of the water?
- **HAVE** the student drop a pebble in the water and watch the wave action. What are waves?

### RELIGION METHODOLOGY

- **TELL** stories from the New Testament about Jesus associating with sinners.
- **SAY:** Jesus came to save sinners –you and me. He loved us as sinners and He loves us after He redeemed us.
- **SHOW** the student the crucifix.

- **SAY:** Waves are water in motion.
  - .
  - **SAY:** Light travels in waves too. When we turn on a lamp, energy moves through the wires to the bulb and when enough energy is present the filaments inside the bulb start to glow. The light travels in waves.
  - **DRAW** ))))))) waves on the board or flip chart
  - **ASK:** Can you see the light waves? No, they travel too fast.
  - **SAY:** Close your eyes. (Keep them closed for 10 seconds.)
  - **ASK:** Can you see the light from the light bulb?(No)
  - **SAY:** Open your eyes- Can you see the light from the light bulb? As fast as you could see anything that is as fast as light travels.
  - **HAVE** the student record the eyes closed/eyes open demonstration on the Science Journal Page.
  - **HAVE** the student record the pebble and wave demonstration on the Science Journal Page.
  - **POSIT:** Light travels in waves. Light travels very fast.
  - **SAY:** This is how much He loved sinners. He stretched out His arms on the cross, was nailed to the cross, suffered and died. He loved us a lot. Do we love Jesus? YES! Jesus showed His love for us.
  - **ASK:** How do you show your love for Jesus? You do something for Him like He did for you. He told us what to do. Love other people as I have loved you.
  - **READ** Matthew 25: 35 to the student.
  - **ASK:** What did Jesus tell us to do? ( feed the hungry, give drink to the thirsty, visit the sick, visit the imprisoned, clothe the naked, shelter the homeless.)
  - **SAY:** So Jesus told us what to do. Let's put these ideas into our school life. Record answers on the board.
- When I was without a snack or lunch, you \_\_\_\_\_?**
- When I got to the drinking fountain at the same time as you, you let me \_\_\_\_\_?**
- When I felt sick, you \_\_\_\_\_?**
- When I was chilly and had forgotten my sweatshirt, you \_\_\_\_\_?**
- **ASK** the student to quietly reflect with Jesus on how they have been treating others. Play some quiet sacred music.

- **POSIT:** We show we love Jesus by how we treat others.

## RESOURCES, LINKS AND COMPUTER LESSONS

### Science Links

(Student) Kids page – includes a song to hear and a good explanation of electromagnetic spectrum

<http://www.kidsgeo.com/geography-for-kids/0056-electromagnetic-spectrum.php>

(Teacher) Teacher can have a free 14 day free trial use.

[www.brainpop.com/science/energy/electromagneticspectrum/preview.weml](http://www.brainpop.com/science/energy/electromagneticspectrum/preview.weml)

(Teacher) Science textbook publisher site

<http://www.hspscience.com>

### Religious Links

(Student) Religion Textbook publisher

<http://www.rclweb.com>

(Teacher) Bible Stories for Kids

<http://www.ebibleteacher.com/children/toc.htm>

(Teacher) Bible Stories for Kids

<http://gardenofpraise.com/bibleles.htm#jesus>

(Teacher) Story, activities and coloring pages of New Testament stories to copy and print for students.

[http://children.calvarychapel.com/site/curriculum\\_n.htm](http://children.calvarychapel.com/site/curriculum_n.htm)

**KEY WORDS**  
**PHYSICAL SCIENCE – GRADE FOUR - LESSON 5 - CA**

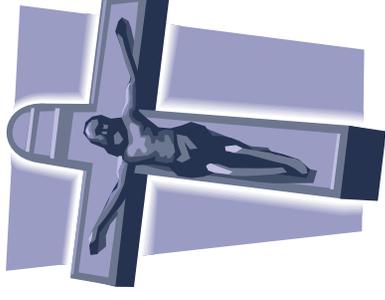
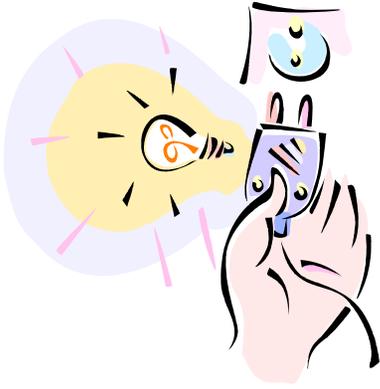


**LIGHT**  
**TRAVEL**  
**ELECTROMAGNET WAVES**  
**PROPOGATE**  
**LIGHT WAVES**  
**ENERGY**  
**WIRES**  
**BULB**  
**FILAMENTS**



**LOVE OF JESUS**  
**SACRIFICE**  
**RADIATE**  
**SINNERS**  
**BLIND MAN**  
**TAX COLLECTOR**  
**ZACCHAEUS**  
**MATTHEW 25**  
**JUDGMENT**

**KEY WORDS**  
**PHYSICAL SCIENCE – GRADE FOUR - LESSON 5 - CA**



**LIGHT**

**LOVE OF JESUS**

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