



Creation Lens

Exploring the World, Discovering God

Grade Level: **Grade 4**

Title:

Circuits of Light & Jesus Is the Light of the World

Denomination: **Catholic**

Lesson ID: **PS-G4-07-CA**

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

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PHYSICAL SCIENCE – GRADE 4 - CATHOLIC
LESSON TITLE: Circuits of Light & Jesus Is the Light of the World

SCIENCE LESSON CONCEPT

- Define electricity
- Parts of a complete circuit
- Electrical path
- Source of energy

GOAL OF SCIENCE LESSON

- Students will create circuits to turn on a light bulb.

RELIGION LESSON CONCEPT

- Jesus – Light of the World
- Jesus - Redeemer

GOAL OF RELIGION LESSON

- Students will learn that like electricity lights up a light bulb, Jesus lights up our world.
- Students will learn that Jesus is the Light of the World.

OUTCOME EXPECTED

- Students will observe electricity through a circuit when the light bulb lights up.

MATERIALS NEEDED

- Science Journal Page: Electricity and Circuits
- Pencil or pen
- Cell holder – 1 per student or group
- D battery – 1 per student or group
- Light bulb -1 per student or group
- Light bulb holder -1 per student or group
- Filament – 1 per student or group
- Wires – 1 set per student or group
- START sign
- STOP sign

OUTCOME EXPECTED

- Students will learn Matthew 5:14-16.
- Students will be aware of how Jesus is the Light of the World.
- Students will learn how they can be a light to others.

MATERIALS NEEDED

- Bible – Matthew 5:14-16
- Shoe Box Diorama
- Magazines to cut out pictures
- Drawing paper
- Scissors
- Glue
- SONG: “We Are the Light of the World”
- SONG: “Whatever you do...”
- Electric candle
- Basket to cover the candle

SCIENCE METHODOLOGY

- **ASK:** Is there electricity in this room?
- **ASK:** How do you know? (lights are on; plugs are in the walls sockets, etc.)
- **EXPLAIN** that electricity needs a complete path along which to travel.
- **SELECT** several students.
- **ASK** them to go completely around the room. They are to begin at the START sign and stop at the STOP sign.
- **HAVE** the students walk the path.
- **SAY:** The students have completed a circuit or path just like electricity needs to travel.
- **IDENTIFY** the parts of a circuit.
- **WRITE** the terms on the chalkboard or chart paper.
- **HAVE** the students write the terms on the Science Journal Page: Electricity and Circuits.
- **SHOW** the students the parts of the circuit.
- **HAVE** them draw the parts by the terms on the Science Journal Page.
- **DISTRIBUTE** the materials for the experiment to each

RELIGION METHODOLOGY

- **HAVE** the students read Matthew 5:14-16.
- **EXPLAIN** that Jesus used these parables to teach people how to follow God.
- **SAY:** Because Jesus told this story, He received the title “Light of the World”.
- **SAY:** When there is darkness and we are afraid, it is harder to see our way. When there is light, we are able to see our path. Jesus and the Holy Spirit guide us and show us the Light.
- **ASK:** What did Jesus mean when he said don’t hide your light under a bushel basket?
- **DEMONSTRATE** by darkening the room as much as possible.
- **LIGHT** the electric candle.
- **SAY:** See how much light this one electric candle can generate. Use your imagination to see how much light we would have, if everyone had a candle.
- **COVER** the electric candle with the basket.
- **ASK:** What happened to our light? (cannot see it)
- **SAY:** When we share God’s love with others, we are building the Kingdom of Jesus here on earth. We are

student or group.

- **HAVE** the students create a circuit using the materials.
- **ASK:** Did the light bulb light up?
- **DISCUSS** open and closed circuits.
- **COMPARE** the information about open and closed circuits to those circuits that did light the bulb and those that didn't.
- **HAVE** students repeat the experiment.
- **ASK:** Did the light bulb light?
- **HAVE** the students draw and label the circuits on the Science Journal Page.
- **ASK:** Your circuit had to have an energy source. What was the source of your energy? (D battery)
- **ASK:** When you turn on a radio, TV, or lamp at home, what happens? (circuit is complete)
- **ASK:** If you turn on an electrical lamp and it does not go on, what should you check?
- **LIST** the students' responses. Be sure to have: plugged into energy source, light bulb completely screwed into the light bulb holder, check filament, etc.
- **SHOW** the students the filament in a light bulb.

doing good work for the church and our community. Just like a circuit needs to be connected and needs all the parts to work, we need to work as a community to keep faith alive. We are letting the light of Jesus shine through us.

- **ASK:** When we are kind and polite to another person, where does our light come from? (Jesus is the Light of the World, we are to reflect His light to others)
- **SAY:** You are to create a diorama to show how you can act as light to the world. You should include the Matthew 5: 14-16 Scripture passage in the diorama. You may draw pictures or cut out pictures from the magazines to show how to be light for others.
- **ALLOW** time to create the diorama.
- **GATHER** the students and their dioramas into a prayer space.
- **LEAD** a prayer service using "We Are the Light of the World" or "Whatsoever you do..." song.
- **IN THE PRAYER SERVICE,** read the Matthew 5:14-16 passage.
- **HAVE** the students, say one way they can be a light to others and then place their diorama in the prayer area.
- **POSIT:** We need every person to show light and love to others. We need to be complete open circuits of God's love to others.

- **EXPLAIN** how the filament needs to be intact for the circuit to close.
- **HAVE** the students write a paragraph about circuits and how they got the light bulb to light.
- **DISPLAY** the Science Journal Page on a table with an open circuit and a closed circuit.
- **POSIT:** Electricity needs a complete path to complete the circuit. The light bulb will only go on when the circuit is complete.

SCIENCE LINKS

www.myschoolhouse.com/courses/O/1/68.asp
Simple Electric Circuit - Elementary Science Lessons & Tests - My ... **Electricity** Lesson, Simple **Circuit**, **Electricity**, **Electricity** for Kids in **Elementary** School. Good explanations and diagrams.

www.schools.bcsd.com/fremont/4th_Sci_Electricity_Circuits.htm
4th Grade Science - Electrical Circuits Fremont Magnet **Elementary**. Back to 4th Grade **Science**. **Circuits** and **Electricity**. Standards: a. Students know how to design and build simple series and parallel ... Good interactive site for students. Answers can be revealed.

www.internet4classrooms.com/science_elem_electricity.htm
Electricity Science in an elementary classroom at ... **Electricity** for **Elementary Science** ... Quiz on Changing **Circuits**; **Circuits** and Conductors - light the bulb by ... Really good source for other sites and activities.

RELIGIOUS LINKS

www.msscrafter.com/newtestament/lightoftheworld.htm
Jesus, Light of the World - MSSS Bible Lesson Links to story ideas, coloring pages, activity sheets and crafts for story of. Good ideas for activities.

www.childrensministryvault.com/.../jesus-is-the-light-of-the-world
Jesus is the Light of the World | Object Lessons | Children's ... You should be able to obtain some trick birthday cake candles - i.e. the ones that appear to be extinguished when they are blown, but after a few seconds flame



KEY WORDS

- ELECTRICITY
- LIGHT ENERGY
- CIRCUIT
- CURRENT
- SWITCH
- FILAMENT
- LIGHT BULB
- HOLDER
- OPEN CIRCUIT
- CLOSED CIRCUIT



KEY WORDS

- MATTHEW
- SCRIPTURE
- COMMUNITY
- FAITH
- GOD
- MISSION
- DIORAMA
- REFLECT

KEY WORDS



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