Creation Lens

Exploring the World, Discovering God

Grade Level: **Grade 4**

Title:

Change and Motion & Changing to Be More Like Christ
Part 1 of 2

Denomination: **Catholic**

Lesson ID: **PS-G4-10-#1-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.




PHYSICAL SCIENCE – GRADE 4 - CATHOLIC
LESSON TITLE: Change and Motion & Changing to Be More Like Christ
NOTE: This is part #1 of a 2 part module.

SCIENCE LESSON CONCEPT

- Process of motion develops through change and force

GOAL OF SCIENCE LESSON

- Students will be able to identify how force affects the changes of motion.

OUTCOME EXPECTED

- Students will be to demonstrate how motion works.

RELIGION LESSON CONCEPT

- Process of becoming more Christ-like develops through change and practice

GOAL OF RELIGION LESSON

- Students will be able to identify the strengthening of their faith through their actions.

OUTCOME EXPECTED

- Students will be able to demonstrate how their actions affect their community/world.
- Students will be able to relate how their actions can strengthen them in becoming more Christ-like.

MATERIALS NEEDED

- Toothpicks – several boxes
- Mini marshmallows
- DOTS candies – several bags
- Construction paper
- Scissors
- Tape (optional)
- Marbles or ping pong balls
- Science textbook
- Science Journal Page: Motion
- Pens or pencils
- Latex gloves – check for allergies
- Balls

MATERIALS NEEDED

- Toothpicks – several boxes
- Mini marshmallows
- DOTS candies
- Construction paper
- Scissors
- Tape (optional)
- Marbles or ping pong balls
- Religion Textbook
- Religion Notebook
- Pens or pencils
- Latex gloves – check for allergies
- Picture of Christ
- Boxes of several sizes
- Sand
- Bible
- Bricks

- Pieces of wood

SCIENCE METHODOLOGY

(NOTE: This is the Day 1 Lesson in a series of 2 lessons.)

Day 1 INTRODUCTION

- **ASK:** How did you get here today? Did you walk? Drive a car? Take the bus?
- **SAY:** Whatever method of transportation that you used, motion was involved. Motion can be back and forth, vibration, circular, and up and down.
- **HAVE** the students draw an example of each type of motion on the Science Journal Page: Motion.
- **EXPLAIN** what occurs when motion is created.
- **DISCUSS AND DEFINE** the following vocabulary: relative motion, frame of reference, speed, velocity, force, friction, gravity, potential energy, kinetic energy, and work.
- **HAVE** the students write each vocabulary term on the Science Journal Page and its definition.
- **HAVE** the students move around the area: walk, push desks, scoot chairs, roll balls, etc. to demonstrate motion.

RELIGION METHODOLOGY

- **SHOW** the picture of Christ and place it in a prominent place in the area.
- **ASK:** How did we get here? How were we created?
- **EXPLAIN:** Through the power of the Holy Spirit, Jesus was born to the Virgin Mary and became a human being while still remaining God. (Incarnation and Nativity of Jesus)
- **SAY:** Human beings are very different. We look different, we act different, we speak different languages, etc. When we work together to solve problems, we get things accomplished. This means that sometimes we have to give up what we want to do for the good of the people. We have to change and this is not always easy to do.
- **READ** Mark 1: 16-20; Mark 2: 13-14; Mark 2: 13-19 which relates how Jesus called the Twelve Apostles.
- **HAVE** the students look at each other.
- **EXPLAIN** that the Apostles were all different. They had different skills and different abilities but Jesus called each one of them. We're different but these differences make us work in various ways to accomplish tasks. Tall people can reach things shorter people can't. Strong

- **EXPLAIN** that everything we do involves motion. Anything they do involving creating a structure will involve motion.

- **ASSIGN** the students into work groups of 2-4 students depending on the number present.

- **HAVE** the students brainstorm ideas for constructing a structure showing motion.

- **HAVE** the students in each group select one structure to build and draw a diagram of that structure.

- **HAVE** the students record their choice of structure and draw the diagram on the Science Journal Page: Motion.

- **POSIT:** Motion is a change of position. Force changes motion.

people can carry heavy things while weaker people need a few other workers to help carry the load. One person can envision the finished project. Another person can see the details that still need to be done. We need everyone working together to do a good job. Jesus gave the apostles a mission.

- **READ:** Mark 6: 6b-13.

- **ASK:** What mission and powers did Jesus give the Apostles?

- **ASSIGN** the students to groups.

- **SAY:** Like Jesus called a group to do his work, you are in this group to work for the common good of the group. You are going to build a structure, but you need a firm foundation.

ACTIVITY OPTION #1

- **HAVE** the students select a firm foundation for their structure.

- **REFLECT:** Tell the students to think about how their chosen foundation will help them achieve the goals/outcomes of this lesson.

- **RECORD** reflection and decision in notebook.

- **HAVE** the students draw their foundation in their Religion Notebook.

ACTIVITY OPTION #2

- **WRITE** a student's name on the board. Each student tells one strength about that student. There can be no negatives. Continue on until all the students have been covered.

- **SAY:** Here is the foundation of our class. This is a listing of the strengths of everyone.

- **ASK:** What are our firm foundations? (loyal, hard-working, etc.)

- **WRITE** the most common strengths on "stones" on the chalkboard.

- **SAY:** This is the firm foundation of our group.

BOTH ACTIVITY OPTIONS CONTINUE:

- **ASK:** What is the firm foundation of your faith?

- **ASK:** Does your faith depend on what parish you belong to?

- **ASK:** Does your faith depend on if you like or dislike a particular decision?

- **ASK:** Why is Jesus the firm foundation of your faith?

- **POSIT:** Working together allows us to use all our differences for the common good. Our structure will only be as strong as its foundation.

SCIENCE LINKS

www.learner.org/resources/series136.html

Resource: Science in Focus: Force and Motion
Explore science concepts in force and motion and come away with a ... develop understanding through activities that connect science ... In this workshop, fourth-grade students ...

www.quia.com/pages/hostetterssciencecs.html
4th & 5th Grade Science Class Page for 4th & 5th Grade Science ... Print Science Activities! A good resource for Science ... Force, Motion, and Energy (Force) Force, Motion ...

RELIGIOUS LINKS

www.preachersfiles.com/the-parable-of-the-two-builders... Parable of the House Built Upon the Rock | The Parable of the ... ... to our Lord's chief argument for having a firm foundation as seen in the Parable of ... To build a strong foundation for a house, you must follow the directions found in ... Includes a "rap song" and discussion questions.

KEY WORDS

- **MOTION**
- **FORCE**
- **CHANGE**
- **VIBRATION**
- **CIRCULAR**
- **RELATIVE MOTION**
- **FRAME OF REFERENCE**
- **SPEED**
- **VELOCITY**
- **FRICTION**
- **GRAVITY**
- **POTENTIAL ENERGY**
- **KINETIC ENERGY**

KEY WORDS

- **FAITH**
- **FOUNDATION**
- **INCARNATION**
- **NATIVITY**
- **MISSION**
- **POWERS**

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MOTION

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