



# Creation Lens

*Exploring the World, Discovering God*

*Grade Level:* **Grade 4**

*Title:*

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

*Denomination:* **Catholic**

*Lesson ID:* **PS-G4-10-#2-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: Change and Motion & Changing to Be More Like Christ**  
**NOTE: This is the #2 Lesson in a series of 2 lessons.**

**SCIENCE LESSON CONCEPT**

- Process of motion develops through change and force
- Foundation is the key to stability

**GOAL OF SCIENCE LESSON**

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

**OUTCOME EXPECTED**

- Students will be able 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 demonstrate how the foundation provided stability.

### **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

- 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
- Construction paper
- Scissors
- Tape (optional)
- Marbles or ping pong balls
- Religion Textbook
- Religion Notebook
- Pens or pencils
- Plastic or latex gloves – check for allergies
- Picture of Christ
- Boxes of several sizes
- Sand

## SCIENCE METHODOLOGY

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

### Day 2

- **REVIEW** lesson one and instruct students about requirements and expectations.
- **EXPLAIN** again what motion does and what they need to accomplish in their structure.
- **REVIEW, 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 gather into groups of 2-4 students

- Bible
- Bricks
- Pieces of wood
- Chenille pipe cleaners
- Popsicle sticks
- Glue
- String

## RELIGION METHODOLOGY

(NOTE: This is the #2 lesson in a series of 2 lessons.)

- **REVIEW** concepts of what is being accomplished and how our church has a foundation = Jesus. The foundation of any structure is its strength.
- **EXPLAIN** that the Apostles followed Jesus and tried to do what he expected of them. Even though they failed many times, Jesus did not give up on them and they did not give up on Jesus. Jesus founded His Church on Peter, the rock.
- **DISCUSS** the tools needed to strengthen our faith by reading the Bible, going to Church on Sunday and other days too, serving others, and prayer.

depending on the number present.

- **HAVE** the students refer to the diagram they made of their structure.
- **GIVE** the students their materials and have them work on completing their structure.
- **REMIND** them that the goal is to show motion and build a structure that can withstand that motion.
- **ALLOT** time for the groups to build the structures.
- **HAVE** the groups explain their structure and demonstrate how it can withstand movement.
- **DISCUSS** how their structure was or was not well-anchored and did or did not withstand movement.
- **HAVE** the students offer suggestions for “fixing” the structure.
- **ALLOW** the group to repair their structure and demonstrate it again.
- **SAY:** Having a firm foundation allows a structure to withstand some movement, but not all. Earthquakes can exert tremendous power and cause shifting that even the most well-anchored building cannot withstand. However, our knowledge of motion and force can help us design highways and buildings which can withstand some movement and force.

- **ASK:** How do these tools help you to build a faith-structure that is secure?
- **DISCUSS** how the students can serve others as Jesus taught and that will please God because they are doing what he wants.
- **HAVE** the students form into groups and make a foundation piece.
- **HAVE** the groups put their foundation piece on the work space.
- **ASK:** What sort of structure could you build on this foundation which would represent your actions (motions) in the Church? (pyramid, triangle, square, tower, etc.)
- **HAVE** the students build a structure and put labels for what each part means (prayer, good deed, Bible reading, Mass, alms-giving etc.)
- **HAVE** each group be sure that their structure is well anchored to the foundation piece.
- **HAVE** each group present their structure and explain it to the class.
- **EXPLAIN** that sometimes other forces (evil, peer pressure, bullying etc.) can exert pressure on our structure.
- **USE** the marbles or ping pong balls to roll or bounce

- **POSIT:** Cooperative work produces change in each member of the group through the give and take needed to accomplish the building of the structure. Understanding how motion works and how a firm foundation is important can help us build securely.

against the structure demonstrating how temptation tries to shake our faith.

- **ALLOW** students to revise any structures which did not withstand the outside pressure of the ping pong balls or marbles.
- **DISPLAY** the structures.
- **POSIT:** Our foundation is Jesus Christ. Our life is the structure that we build on that foundation. Any action causes motion in our structure. Some outside forces can exert pressure on our faith.

## SCIENCE LINKS

[www.studystack.com/menu-988584gr](http://www.studystack.com/menu-988584gr) **Motion & Design study tools.** Description: **Motion** and Design Vocabulary Words-**4th grade**: Category: **Physical Science**: Created by: fhershey on 2007-10-17 Includes flashcards and puzzles.

[www.simplyscience.com/physicalslinks.html](http://www.simplyscience.com/physicalslinks.html)  
[Physical Science Links for Kids](#) **PHYSICAL SCIENCE LINKS FOR KIDS ... Fourth Grade** Chemistry. Solids, Liquids ... Seventh **Grade Physics . MOTION.** Build a Roller Coaster. Good section on careers in building structures. Advanced students could learn how to build a roller coaster.

## RELIGIOUS LINKS

[www.pilgrimlaunceston.org.au/sermons/Firm%20Foundation.doc](http://www.pilgrimlaunceston.org.au/sermons/Firm%20Foundation.doc)  
[A Firm Foundation](#) **Firm Foundation .** Matthew 7: 21-29 . Lord, make us wise enough ... that is contained in this morning's **gospel** ... But in a sense we treat this reading like **children's story** ... The first couple of paragraphs contain a great explanation of a firm foundation in building.



### KEY WORDS

- RELATIVE MOTION
- FRAME OF REFERENCE
- SPEED
- VELOCITY
- FORCE
- FRICTION
- GRAVITY
- POTENTIAL ENERGY
- KINETIC ENERGY
- WORK
- STRUCTURE
- STABILITY



### KEY WORDS

- FAITH
- APOSTLES
- FOUNDATION
- PEER PRESSURE
- EVIL
- BULLYING
- SUPPORT

## KEY WORDS



RELATIVE MOTION

FAITH

FRAME OF REFERENCE

APOSTLES

SPEED

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