



Creation Lens

Exploring the World, Discovering God

Grade Level: Grade 7

Title:

Forces Acting on an Object & God's Presence in Our Life

Denomination: Catholic

Lesson ID: PS-G7-01-CA

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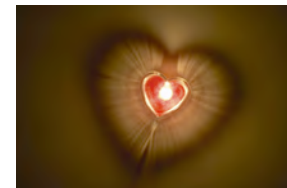
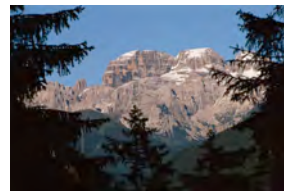
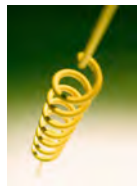
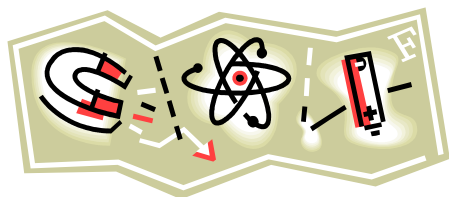
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Note: Web sites referenced in this lesson were valid at time of publication.

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PHYSICAL SCIENCE – GRADE 7 - CATHOLIC

LESSON TITLE: Forces Acting on an Object & God's Presence in Our Life

GENERAL CONCEPT: Seen and unseen forces.

SCIENCE LESSON CONCEPT

- Seen and unseen forces acting on an object

GOAL OF SCIENCE LESSON

- Students will understand that forces are always acting on matter.

OUTCOME EXPECTED

- Students will be able to describe forces acting on an object.

RELIGION LESSON CONCEPT

- Presence of God: unseen but always there

GOAL OF RELIGION LESSON

- Students will learn about the constant presence of God in our lives.
- Students will learn that God is always with us in good times and in bad times.

OUTCOME EXPECTED

- Students will be more aware of God's love for us.
- Students will be more aware that God wants us to know Him.

MATERIALS NEEDED

- Science Journal page: Forces Acting on an Object
- Pen or pencil
- Ring magnets (at least 2 per group)
- Spring scale or a piece of elastic (1 per group)
- Brick (1 per group)
- String (some for each group)
- Plastic ruler
- Posts for magnets

SCIENCE METHODOLOGY

Preferable method is that the experiments are done by students in small groups, but demonstration is acceptable.

- **SAY:** There are forces which are acting on matter. For example, if I push down on this plastic ruler, it bends. But there are invisible forces that act on an object too. We are going to work in small groups and do two experiments. You will be expected to participate in your groups work and to record the experiments on your Science Journal page: Forces Acting on an Object.
- **ASSIGN** the students to particular groups and work areas.

MATERIALS NEEDED

- PowerPoint presentation: pictures of creation, natures, family, friends, Old Testament scenes – through the birth of Christ
- Religion Notebook/Journal
- Pen or pencil

RELIGION METHODOLOGY

- **USE** a teacher-created PowerPoint presentation to visually instill the wonder and awe of God.
- **ASK:** How do we recognize the presence of God in our lives?
- **DISCUSS** in groups: How does experiencing the joy of nature, of family and friends help you to realize the presence of God in your life?
- **HAVE** the groups make a report to the class.
- **HAVE** one person from the group record the points on

EXPERIMENT # 1: FLOATING MAGNETS

- **SAY:** Manipulate 2 or more ring magnets on and off a post: Observe and record the attraction and repulsion.

EXPERIMENT # 2: BRICK AND SPRING SCALE

- **SAY:** Wrap string around the brick securely.
- **ALLOW** time for this to be done.
- **SAY:** Attach the string to a spring scale. If a spring scale is not available, a piece of elastic can be looped through to attach it to the string. The length that the elastic stretches can be measured.
- **SAY:** Keep the brick on the table or surface. Pull on the spring scale or elastic to drag the brick. Record the force needed to move the brick at first (inertia) and compare it with the force needed to move the brick at a steady pace.

FURTHER EXPERIMENTATION could be conducted to determine if the width/length of the elastic affects the results. The experiment could also include changing the surface to sandpaper and measuring friction and/or flat vs. inclined surface.

- **HAVE** the groups report back their findings to the entire class. Account for any differences. Stress that exact duplication of an experiment would be needed for accurate results.
- **POSIT:** Seen and unseen forces are acting on matter.

the board.

- **SAY:** In our Science class we saw the results of how visible and invisible forces act on objects. This is similar to how our unseen God is always near us, urging us to draw closer to Him and encouraging us to do the right thing.
- **ASK:** How are the science experiments like the invisible power of God?
- **HAVE** the students write in their journal their personal experiences of God working in their life.
- **HAVE** some students share their journal writings.
- **POSIT:** God is an ever-present power and force in our life. We can't see Him but he is real.

SCIENCE LINKS

www.edzone.net/~djhsrock/2001-2002/index2002.htm

Rocket Club 2001-2002 An object at rest remains at rest. An object in motion continues along a strait line ... an unbalanced force acts on an object, the change in motion of that ... Great lesson for students.

www.resources.scienceworld.ca/.../forces-and.../920-magnets.html

Grade 6 and Grade 7; Activities by type: Activity; Demosntration; Exploration, Game; make & Take...The forces of a magnet are strongest at the poles. This is because of the magnetic field...Site also has a lesson on forces.

www.learner.org/resources/series136.html

Forces can help put objects into motion and can...to break the attraction between two magnets? In this workshop, the Lure of Manetism..Site has several really good experiments on force. Can be upgraded easily to Grade 7 or Grade 8 students.

RELIGION LINKS

www.everystudent.com/wires/Godreal.html

Is God Real - DNA - DNA Structure Why the DNA structure answers, Is God Real? ... Just as he has engineered DNA to instruct the cell, he offers to instruct us to make our lives function well, for his glory and ... This short article could be read and understood by the students.

www.authorstream.com/Presentation/repuhan-255472-nature-light...

Nature Lightning Ppt Presentation Interesting Lightning Pictures

- A PowerPoint presentation ... The beauty of Nature. By: qpharry. See Feel Nature. By: Chdguy. Nature Best. By: killer ... Powerful and awe-inspiring sights and sounds.

www.authorstream.com/Presentation/rupi-8744-Nature-Beauty-nature-ppt-powerpoint...

Nature Ppt Presentation Nature's beauty - A PowerPoint presentation Recommend no sound or substitute more 7th grade appropriate music. This music is too calm for them.

KEY WORDS

- FORCE
- MATTER
- VISIBLE
- INVISIBLE
- SPRING SCALE

KEY WORDS

- PRESENCE OF GOD
- INVISIBLE
- FORCE
- EVER-PRESENT
- AWE