Grade One

Let's Get Moving!

Major Topic and SOL Motion and Force

Science SOL	1.2 a, b
Math SOL	1.9
C/T	K-2.7
Engineering	An ability to design and conduct experiments, as well as to interpret data

Length of Unit 9 days

Major Understanding

- Objects move in different directions
- Movement can be changed

Essential Questions

- What are some different types of motion?
- Can you illustrate/demonstrate motion?
- How can I make (object) move?
- How can I keep something from moving?

Student Objectives

Bloom's Taxonomy Skills	**21st Century Learning Skills**
• Creating • Analyzing • Applying	• Problem Solving • Communication • Creativity & Innovation • Contextual Learning

Assessment Evidence

Performance Tasks

- 4 small groups explore how far they can get marble to move by constructing a marble run
- describe how they made their movement device, how it made the object move, and measure how far it goes

Other Evidence

- complete cut and paste activity sorting the types of movements, push and pull, movement directions (Venn diagram)

Lesson Contributed by: Sarah Harlow
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Technology

- SMARTboard, internet

Internet Resources

- http://www.fossweb.com/modulesK-2/BalanceandMotion/index.html
- http://www.bbc.co.uk/schools/teachers/ks2_lessonplans/science/forces_in_action.shtml
- http://science.pppst.com/motion.html
- http://www.rockingham.k12.va.us/resources/elementary/1science.htm#2

Supplies/Materials

- examples of objects that have different movements
- materials for marble run (rubber bands, paper tubes, pool noodles, tissue boxes)
- copies of sorting activity pages/ pictures
- science textbook/ workbook pages
- Teacher made note pages

5E Lesson Plan

Lesson 1: What is motion? (1 class period)

Engage: Following Directions CD, song "Turning, Turning, Turning" each chorus repeats a different movement, students do what the song says (Simon says, any movement exercise)

Explore: Write the names of the movements used in the exercise, have a few students model it for class, get students to add other names of movements they can do to add to the list

Explain: Have students generate a definition of what they think Motion is based on their list and activity, they copy it into their notebook

Elaborate: read definition of motion from textbook, add it to our class definition

Evaluate: draw a picture to represent what motion means in notebook

Lesson 2, Part 1: Names for Motions (1 class period)

Engage: review movement words generated by students

Explore: using different objects and toys, have students investigate how they move

Explain: have volunteers share how they think their toy moves

Elaborate: pick models that have each of the movements (circular, back and forth, straight) and ask students to demonstrate how they move, can they move the same way, what words can we use to describe the movement being made (guide to the vocabulary in standard)

Evaluate: make a flip book of 3 different movements made by the toys

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Lesson 2, Part 2: Names for Motions (1 class period)

Engage : use a toy that demonstrates each type of motion, have students identify that motion (circular, back and forth, straight)
Explore: each small group uses a whiffle ball tied to a string to explore how many ways they can get the ball to move
Explain: one person from each group models a types of motion
Elaborate: teacher made SMART Notebook file with models for each type of motion and SMART Notebook picture sort
Evaluate: sort toys into the three types of motion, cut and paste picture sort

Lesson 3: **What makes it move? Push and pull** (2 class periods)

Engage: review types of motion by having students model each with the whiffle ball or toy, place ball on floor and ask students "How is it moving now?" "How do I get it to move?"
Explore: student models toys movement, class tells what had to happen to make it start moving
Explain: define force as a push or pull, interactive notebook note page
Elaborate: visit website http://www.bbc.co.uk/schools/scienceclips/ages/5_6/pushes_pulls.shtml to explore what happens when a push or pull is placed on an object have students
Evaluate: teacher made SMART Notebook activity restating notes for push and pull, picture sort

Lesson 4: Can you make it move? How far? (4 class periods)

Day 1:

Engage: demonstrate wooden store marble run, set out all materials available for students to use to make marble run
Explain: set goals for the homework project, use things you have at home to get marble to move
Explore: draw what you would like your marble run to look like

Day 2:

Explain: model shape tool in SMART Notebook, set goal for computer lab time
Explore: in computer lab, students use SMART Notebook to create a design for their marble run
Elaborate: teacher should have students tell about their marble run, students then can showcase printed designs back in the classroom

Day 3:

Explore: student groups are selected, students are given an extended class time to make their first marble run, measure their run
Elaborate: discuss and model marble runs, what worked, what can you do different

Day 4:

Elaborate: remind each group of what they need to accomplish (try different ways to make marble run. Use different materials, move different things, take turns, share

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Evaluate: have each group demonstrate, explain their movement project, measure their project

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