**PROGRAM OVERVIEW**

“MOVING to the Good Times” is a program designed to help students get actively engaged in learning about Motion. This program will help students understand motion and how force is used to make things move. Students will be given ample opportunities to explore motion using hands-on activities.

In this program students will understand what motion is, ways things move, different speeds of motion, what makes objects move faster and how force can change the direction of an object. The students will also be introduced to gravity. After exploring gravity the students will be able to write to explain what would happen if there was no gravity on Earth.

Finally the students will have an opportunity to explore magnetic force. Students will enjoy using hands-on activities to figure out what magnets are and how they move objects. As students perform different experiments, they will become scientists and use inquiry skills to predict and record observations in their Science Journal. This program is intended to last three weeks. The students will be assessed according to their participation, Science Journal and final writing assignment each week.

“MOVING to the Good Times” program is designed specifically for a class of approximately 18 first graders, but can easily be adapted and modified for other grade levels to provide a deeper look into force and motion. This program allows the students opportunities to work in small groups.

This program focuses on reading, writing, math and science through the use of meaningful hands-on experiences. Most of this program is centered around team work and participation. This was my third year using this program and my students were really engaged and active in their learning.

**OVERALL VALUE**

The students will love this program because they get to become the scientist and explore many different experiments using hands-on materials to learn about motion. I feel as the student will become actively engaged in this program because it is easy enough for each student to relate their prior background knowledge to form hypothesis and encourage higher-level thinking opportunities using hands-on experiences. I want my students to acquire long term learning and I feel providing them with many different opportunities to use hands on will provide them with true learning that they need.

I teach at Caldwell Elementary in Auburndale. My school is a Title I school and we did not make AYP last year. After implementing this program to my class of 18 students with 2 students who are substantially deficient, I am pleased to tell you all of my students showed growth. In the pre-test only two of my students scored an 80% or better. After completing the program I gave my students a post test and 17 of the 18 scored at an 80% or better. The other one student didn’t meet the 80% but did show growth.

**LESSON PLAN TITLES**

1. Force and Motion
2. Gravity
3. Magnets

**MATERIALS**

Materials for each lesson are listed with each lesson plan. Overall materials budget including pricing and vendors follows the lesson plan.

**ABOUT THE DEVELOPER**

Krista Wright has a Bachelor of Science in Elementary Education from Florida Southern College. She graduated in 2004. She has taught first grade for the past 7 years and is currently still teaching first grade at Caldwell Elementary.
**SUBJECTS COVERED**
Science

**GRADES**
First Grade, but easily adapted to primary grades

**OBJECTIVES**
Students will …

…write to explain how people use force and motion in everyday life.

…identify and classify objects by the way they move.

…be able to explain how an object changes direction by force.

…be able to explain how an object can move faster.

**MATERIALS**
• Different Objects that move
• Graph Paper
• Science Journal
• Venn Diagram
• A flat object that needs force to move
• string
• Bat
• ball
• Books
• Ramp
• Pencil
• Book “Forces Make Things Move” by Kimberly Brubaker Bradley

**SUNSHINE STATE STANDARDS**

SC.1.P.12
a. Motion is a key characteristic of all matter that can be observed, described and measured.
b. The motion of objects can be changed by forces.

SC.1.P.12.1 The student will describe various ways objects move

SC.1.P.13.1 The student will demonstrate that the way to change the motion of an object is by applying a push or pull. The student will identify the effect changing the way an object moves

SC.1.N.1.1 The student will raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.

SC.1.N.1.2 The student will use the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.

**DIRECTIONS**

Begin Whole Group by reading the book “Forces Make Things Move” by Kimberly Brubaker Bradley to help explain what motion is. Tell students that they are going to get a chance to become scientists and explore motion using hands-on experiences within small groups. There will be a total of 4 experiments. Each group will start at a different station. Each station will take approximately 20 to 25 minutes to complete. The students are responsible for writing in their Science Journal after each station. After four days, every station will be completed, so students will have to turn in their Science Journal on what they have learned. On the fifth day, the students will create a frayer model on Motion using what they have learned. Students will then write two-three paragraphs explaining what they liked about these experiments and what would have made this experience better.

**Experiment 1:**
“Different Ways Objects Move”

Students will observe the way different objects move. Then they will work with their small group and classify the objects by grouping them with the other objects that move the same way. After they have classified each object, the students will graph their results using a bar graph. Finally, the students will write a summary in their Science Journal explaining how different objects move.

**Experiment 2:**
“Using Force to Move Objects”

Students will move objects using their own force. Students will discover that they use their forces everyday to move different objects. The student will move a flat object my pushing the object or pulling it using a piece of string. Then students will look through magazines to find objects that are being moved by
force and cut them out to create a chart to classify things people push and pull in everyday life. Finally the students will write a summary in their Science Journal explaining how objects are moved by force and illustrate.

Experiment 3:
“Changing Direction”
Students will predict how they can use force to change an object’s direction. Next the students will actually change the direction of a moving object. One student will have a ball and will throw it softly to another student who will be holding a bat. Students will explain in their own words how the student with the bat can make the ball go the other direction without stopping it. The student will then actually make the ball change directions. Finally the students will write a summary in their Science Journal explaining how objects can change directions by force.

Experiment 4:
“Speed of Objects”
Students will plan an investigation to see if angles make objects move faster. The students will predict if a ball will move faster or slower down a steep hill or a long hill. Then, the students will perform a test to see if their prediction is correct. They will make a ramp with four thick books and a ramp with 2 books. The students will then place a ball at the top of the ramp and see which ramp the ball rolls down faster. Finally the students will write the conclusion of their investigation in their Science Journal.

EVALUATION/ASSESSMENT
Students will be graded on participation, Science Journal and frayer model.
MOVING to the Good Times
Krista Wright
Lesson Plan No 2: Gravity

SUBJECTS COVERED
Science

GRADERS
First Grade, but easily adapted to primary grades

OBJECTIVES
Students will...
...be able to explain the effect gravity has on objects.
...identify how gravity is used in everyday life.
...write to explain what the world would be like if there was no gravity.

VOCABULARY
Gravity

DIRECTIONS
Begin with Whole Group Instruction. Start off by reading the book, “Gravity is a Mystery” by Franklyn M. Branley. Discuss what gravity is and the effect gravity has on objects. Teach students the “Gravity Chant.” Demonstrate Gravity by the teacher holding up two objects up high. Have the students observe how they fall. Then ask them “Why do you think this happened?” Discuss Gravity some more then tell students that they are going to become scientists again just like the week before and explore gravity by using hands-on experiences within small groups. There will be a total of 4 experiments. Each group will start at a different station. Each station will take approximately 20 to 25 minutes to complete. The students are responsible for writing in their Science Journal after each station. After four days every station will be completed, so students will have to turn in the Science Journal on what they have learned. On the fifth day, the students will watch the video, “Ping and Pong Learn about Space.” After the video the students will write to explain what the world would be like without Gravity.

Experiment 1:
“How Things Fall”
Students will have different size objects such as a balloon, ball, feather and a penny. The students will have to predict where each object would go. Then students will test their hypothesis and form a test. After they perform their test, students are responsible for writing their observations in their journal.

Experiment 2:
“Direction of Gravity”
Students will have different objects such as a balloon, ball, feather and a penny. The students will have to predict where each object would go. Then students will test their hypothesis and form a test. After they perform their test, students are responsible for writing their observations in their journal.

Experiment 3:
“Rolling Gravity Fun”
Students will work within their group to create a rollercoaster using pipe insulation, masking tape and marbles. They will get to design the rollercoaster using different curves and drops. After they have created their rollercoaster, they will place the marble in the pipe insulation as if it was the rider. They will then explain why the marble did not fall off or out of the rollercoaster if their Science Journals.

Experiment 4:
“Cupful of Gravity”
Students will have a Styrofoam cup with a whole in the bottom of it. The student will hold the cup up high and pour water in it. The student will then record their observations in their Science Journal. Next, the student will do it again but this time they are going to let go of the cup with the water. The students should notice that the cup will not leak water because gravity pulls both the cup and water equally at the same speed. The students will write their final observations in their Science Journal.

EVALUATION/ASSESSMENT
Students will be graded on participation, their Science Journal and Gravity Writing.

MATERIALS
• Book “Gravity is a Mystery” by Franklin M. Branley
• Styrofoam cups
• Bucket of water
• Pen
• Paper/pencil
• United Streaming Video “Ping and Pong Learn about Space”
• Pipe insulation
• Marbles
• Masking Tape

SUNSHINE STATE STANDARDS
SC.1.E.5.2 The students will explore the law of gravity by demonstrating that Earth’s gravity pulls any object near or on Earth without touching it.
SC.1.E.5b The students will observe and recognize that an object will fall if dropped.
SC.1.P.12.1 The student will describe various ways objects move
SC.1.N.1.1 The student will raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.
SC.1.N.1.2 The student will use the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations will others.

SUBJECTS COVERED
Science

GRADES
First Grade, but easily adapted to primary grades

OBJECTIVES
Students will...
...be able to explain the effect gravity has on objects.
...identify how gravity is used in everyday life.
...write to explain what the world would be like if there was no gravity.

VOCABULARY
Gravity

DIRECTIONS
Begin with Whole Group Instruction. Start off by reading the book, “Gravity is a Mystery” by Franklyn M. Branley. Discuss what gravity is and the effect gravity has on objects. Teach students the “Gravity Chant.” Demonstrate Gravity by the teacher holding up two objects up high. Have the students observe how they fall. Then ask them “Why do you think this happened?” Discuss Gravity some more then tell students that they are going to become scientists again just like the week before and explore gravity by using hands-on experiences within small groups. There will be a total of 4 experiments. Each group will start at a different station. Each station will take approximately 20 to 25 minutes to complete. The students are responsible for writing in their Science Journal after each station. After four days every station will be completed, so students will have to turn in the Science Journal on what they have learned. On the fifth day, the students will watch the video, “Ping and Pong Learn about Space.” After the video the students will write to explain what the world would be like without Gravity.

Experiment 1:
“How Things Fall”
Students will have different size objects. Some objects will be heavy. Some objects will be light. They will hold up two different size objects and drop them at the same time. The students will then record their observations in their Science Journal. Students will need to determine if objects fall the same way and what objects land on the ground first or exactly at the same time.

MATERIALS
• Book “Gravity is a Mystery” by Franklin M. Branley
• Styrofoam cups
• Bucket of water
• Pen
• Paper/pencil
• United Streaming Video “Ping and Pong Learn about Space”
• Pipe insulation
• Marbles
• Masking Tape

SUNSHINE STATE STANDARDS
SC.1.E.5.2 The students will explore the law of gravity by demonstrating that Earth’s gravity pulls any object near or on Earth without touching it.
SC.1.E.5b The students will observe and recognize that an object will fall if dropped.
SC.1.P.12.1 The student will describe various ways objects move
SC.1.N.1.1 The student will raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.
SC.1.N.1.2 The student will use the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations will others.

EVALUATION/ASSESSMENT
Students will be graded on participation, their Science Journal and Gravity Writing.

2011 - 2012 IDEA CATALOG OF EXCELLENCE
“MOVING to the Good Times” Krista Wright

Lesson Plan No 3: Magnets

**SUBJECTS COVERED**
Science

**GRADES**
First Grade, but easily adapted to primary grades

**OBJECTIVES**
Students will...
...identify objects that magnets attract.
...identify how people use magnets in the real world.
...write to explain what happens when two magnets are put together with the same pole and when two magnets are put together with different poles.

**MATERIALS**
- Magnets
- Screws
- Paperclips
- Magnet Kit
- Magnetic Marbles
- Pole Magnet
- Wand Magnet
- Science Journal
- Pencils
- Book “What Makes a Magnet” by Franklyn M. Branley
- Video “First Look at Magnets”
- Buttons

**SUNSHINE STATE STANDARDS**
SC.1.P.12.1 The student will describe various ways objects move
SC.1.N.1.1 The student will raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.
SC.1.N.1.2 The student will use the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.

**VOCABULARY**
- Magnet
- Attract
- Magnetic force
- Pole
- Repel

**DIRECTIONS**
Begin with Whole Group Instruction. Start off by creating a KWL chart to see what students know about magnets and what they want to learn. Then read the book, “What Makes a Magnet” by Franklyn M. Branley. Discuss magnets then tell students that they are going to become scientists again just like the week before and explore magnets by using hands-on experiences within small groups. There will be a total of 4 experiments. Each group will start at a different station. Each station will take approximately 20 to 25 minutes to complete. The students are responsible for writing in their Science Journal after each station. After four days every station will be completed, so students will have to turn in the Science Journal on what they have learned. On the fifth day, the students will watch the video, “A First Look at Magnets.” After the video the students will write to explain how people use magnets in everyday life.

**Experiment 1:**
“What Are Magnets Attracted To”
Students will have different objects such as screws, buttons, paperclips, metal spoons, plastic spoon, and more. Student will use a magnet to test each object. Students will then sort the objects into two groups, attract and not attract. After the students finish sorting the objects they will write a summary into their Science Journal explaining what magnets attract.
Experiment 2:  
"Push/Pull"  
Students will have free play with the magnets and cart magnets. Students will recognize that magnets can move objects using force by pushing or pulling an object without even touching them. Student will also notice a magnet’s magnetic force by pulling objects by placing the magnet under the table and pulling objects. Students will write in their Science Journal observations they have made during this station.

Experiment 3:  
"Strong Magnets"  
Students will have different types of magnets, paper clips and magnetic balls. Students will use each magnet to see how strong it is by picking up different objects and recording how many can each magnet can hold. After this experiment the students will be able to identify which magnet is stronger. Students will then write a reflection in their Science Journal.

Experiment 4:  
"Poles"  
Students will have two pole magnets. The students will observe what will happen if they try to put magnets together with the same poles. Then the students will observe what will happen if they put magnets together with different poles. The students will write to explain their observations in their Science Journal.

EVALUATION/ASSESSMENT  
Students will be graded on participation, their Science Journal and Writing.
“What Are Magnets Attracted To”

<table>
<thead>
<tr>
<th>Attract</th>
<th>Not Attract</th>
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In your own words explain what magnets are attracted to.

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### “Force and Motion”

<table>
<thead>
<tr>
<th>Pull</th>
<th>Push</th>
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In your own words explain how objects are moved by force.

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“Which Magnet is Stronger”

<table>
<thead>
<tr>
<th>Magnet</th>
<th>Horseshoe Magnet</th>
<th>Bar Magnet</th>
<th>Round Magnet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw each magnet under their name</td>
<td></td>
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</tr>
</tbody>
</table>

How many can each magnet hold?

<table>
<thead>
<tr>
<th></th>
<th>Paperclips</th>
<th>Magnet Balls</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

In your own words which magnet is stronger and why?

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**“Magnet Poles”**

<table>
<thead>
<tr>
<th>Same Poles</th>
<th>Opposite Poles</th>
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<tbody>
<tr>
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</table>

In your own words explain what happens when a magnet with the same poles are put together and then explain what happens when opposite poles are put together.

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### “How Things Move”

<table>
<thead>
<tr>
<th>Straight Path</th>
<th>Curved Path</th>
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<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Circle</td>
<td>ZigZag</td>
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</tbody>
</table>

In your own words explain how different objects move?

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In your own words write to explain how objects can change direction by force. (illustrate)
In your own words write to explain how angles can make a difference in the speed of an object. (illustrate)
# Materials Budget

<table>
<thead>
<tr>
<th>SUPPLIER</th>
<th>ITEM DESCRIPTION</th>
<th>COST</th>
<th>QUANTITY</th>
<th>TOTAL COST</th>
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<tbody>
<tr>
<td>Amazon</td>
<td><em>Forces Make Things Move</em> by Kimberly Brubaker Bradley</td>
<td>5.99</td>
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<td></td>
<td><em>Gravity is a Mystery</em> by Franklyn M. Branley</td>
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<td><em>What Makes a Magnet</em> by Franklyn M. Branley</td>
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<td><em>Move-It: Motion, Forces and You</em> by Adrienne Mason</td>
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<td><em>Pin Will (3 pack)</em></td>
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<table>
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<td>Tax if applicable</td>
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<td>Shipping if applicable</td>
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<td><strong>TOTAL BUDGET AMOUNT</strong></td>
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</table>

**Teacher’s Name**: Krista Wright  
**School**: Caldwell Elementary
<table>
<thead>
<tr>
<th>Participation in Whole Group Experiment</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not Participate</td>
<td>Did not Participate</td>
<td>Partial Participation</td>
<td>Full Participation</td>
<td></td>
</tr>
<tr>
<td>Participation in Group Experiment</td>
<td>Did not Participate</td>
<td>Partial Participation</td>
<td>Full Participation</td>
<td></td>
</tr>
<tr>
<td>Follows Directions</td>
<td>Did not follow directions</td>
<td>Partially followed directions</td>
<td>Followed directions</td>
<td></td>
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<tr>
<td>Science Journal</td>
<td>Barely Participated (0-1 page complete)</td>
<td>Partial Participation (2-3 pages completed)</td>
<td>Full Participation (Completed Journal)</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td>Off Topic</td>
<td>2 to 3 sentences on topic</td>
<td>4 or more sentences on topic</td>
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</tbody>
</table>

| Overall Total | /10 |