3rd Grade Science NEWSLETTER

FORCE & MOTION

DEAR FAMILIES,

During the next few weeks, we will be getting quite a "workout" in science. That's because the topic of our next science unit is work. In *Force and Motion*, students will learn that work happens when a force moves an object a certain distance. We will investigate how, when, and why work occurs. We will study gravity and speed. We will use push-pull meters to measure the amount of force a given task requires. And we will explore how simple machines reduce the amount of force needed to do work.

Studies show that children learn science best by firsthand exploration. The hands-on activities in this unit will bring science alive! In addition, a *Force and Motion* reader will build communication and vocabulary skills, vital parts of science education.

Many of the activities we perform each day involve moving things. For an object to move, a force—a push or a pull—must act on it. Whenever an applied force moves an object, work is done. Machines are tools that help us work by moving objects easier, faster, or farther. Some machines are quite simple, having just one moving part and requiring only the force provided by a human or an animal. It is these simple machines, and how they change the nature of work, that students will build and operate as they investigate force and motion.

When I say, "Great work!" at the end of the unit, I will really mean it.

CLASSROOM ACTIVITIES

- It's An Uphill Battle
- Gravity Jumpers
- Classifying Forces
- Is Work Being Done?
- Stop That Marble!
- Balloon Blastoff
- Lift the Load
- Forces Change the Direction of Motion
- Roller Coaster!
- Speed Challenge

SCIENCE & POETRY

Gravity
by Londis Carpenter

If gravity were turned around
We'd all fall up instead of down.
If I fell up I'd laugh out loud
To bump my head into a cloud.
There'd be no skinnrd elbows or knees,
Picking up clothes or raking leaves.
And planes would need more sky to share
For cars would soar into the air.
I probably would never cry
If I slipped and fell up in the sky.
But how would we stay on the ground
If gravity was turnd around?

FORCE & MOTION
BEYOND THE CLASSROOM

HOW YOU CAN HELP

You can help reinforce the concepts of *Force and Motion* at home by being alert to all the "work" your child accomplishes each day. Point out instances of pushing, pulling, lifting, dragging, twisting, pressing, opening, closing, and so on. What moved? How far? What force was applied? Be on Machine Patrol, looking for examples of the six simple machines, powered only by human effort.

You can also help your child study the key vocabulary terms below

Effort — the place where force is exerted
Energy — the ability to do work
Force — a push or a pull
Friction — a force that slows down or stops objects in motion
Lever — a simple machine that has a bar resting on a turning point
Load — the object that is being lifted or moved
Pulley — a simple machine that has a wheel with a rope moving around it
Work — when a force moves an object through a distance
Gravity — the force that pulls things to the Earth
Velocity — the equation to calculate speed
Motion — when an object's position is changing
Speed — the distance an object travels over a given time

SUGGESTED BOOKS AND WEBSITES

Move It!: Motion, Forces and You (Primary Physical Science) Adrienne Mason (Author), Claudia Davila (Illustrator)
Forces and Motion (Hands-on Science) John Graham (Author), David Le Jars (Illustrator)
Forces and Motion: A Question and Answer Book (Questions and Answers: Physical Science) Welch (Author), Catherine A. (Author)

http://pbskids.org/zoom/activities/sci/
http://www.firstschoolyears.com/science/forces/forces.html
http://www.barnesandnoble.com/s/force-makes-things-move
http://www.nsta.org/pdfs/2011OSTBListLowresWithPressReleaseLink.pdf

FIELD TRIP

March 20, 2012
9:30 AM – 2:30 PM.
Additional information will be sent home with your child.

Cranbrook Institute of Science
Michigan's Museum of Natural History