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Machines and Motion Hi/Lo Curriculum Map

This program was developed to make the basic Physical Science curriculum accessible to all kinds of learners. The clear, straightforward presentation of essential facts, the colorful, highly visual elements, and the hands-on activities will capture the interest of students with a variety of learning styles and skill levels. The content supports the Physical Science curriculum that covers force and motion, simple and compound machines, and the basics of flight presented in grades 4 and up. It is useful as a reinforcement and review tool for older students who need extra help with these concepts.

Each set of facts is presented in several different ways and enhanced with photo images that bring the information to life and visually engages students in the learning process. Students will have many learning opportunities as they work with the binder materials. The short, manageable bits of important information presented in the Fast Facts Folders and Fast Facts Mini-Posters are appealing to struggling learners and pave the way for further instruction.

Teacher Notes

- Introduction
- Words to Know
- Pre/Post-Test

Extras:

- Bingo Game for Machines & Motion
- Photo Activity Cards & Labels
- 14 Mini Posters
- Reading Folders – Layed up to print as booklets

FORCE & MOTION SECTION

Lesson 1: Force & Motion

- Force Fast Facts Mini-Poster
- Motion Fast Facts Mini-Poster
- Force & Motion Activity Page
- Force & Motion Facts Sheet #1: Force & Motion
- Force & Motion Facts Sheet #2: Force & Motion Terms
- Force & Motion Facts Sheet #1 & 2 Activity Page
- Force & Motion Facts Sheet #3: Types of Movement
- Force & Motion Facts Sheet #4: Normal & Applied Force
- Force & Motion Facts Sheet #3 & 4 Activity Page

Lesson 2: Friction

- Friction Fast Facts Mini-Poster
- Force & Motion Facts Sheet #5: Frictional Force
- Force & Motion Facts Sheet #5 Activity Page
- Force & Motion Facts Sheet #6: Resisting Forces
- Force & Motion Facts Sheet #6 Activity Page

Lesson 3: Buoyancy

- Buoyancy Fast Facts Mini-Poster
- Force & Motion Facts Sheet #7: Upward Forces
- Force & Motion Facts Sheet #7 Activity Page

Lesson 4: Gravity

- Gravity Fast Facts Mini-Poster
- Force & Motion Facts Sheet #8: Gravitational Force
- Force & Motion Facts Sheet #8 Activity Page

Lesson 5: Magnetic

- Magnetic Fast Facts Mini-Poster
- Force & Motion Facts Sheet #9: Magnetic Force
- Force & Motion Facts Sheet #9 Activity Page

Lesson 6: Centripetal Force

- Centripetal Fast Facts Mini-Poster
- Force & Motion Facts Sheet #10: Centripetal, Tension, & Spring Force .
- Force & Motion Facts Sheet #10 Activity Page

Force & Motion Review Activities

- Force & Motion Review Activity 1
- Force & Motion Review Activity 2
- Force & Motion Review Activity 3

MACHINES SECTION

Lesson 1: Simple Machines

- Machines Facts Sheet #1: Simple Machines
- Machines Facts Sheet #1 Activity Page

Lesson 2: Inclined Planes

- Inclined Planes Fast Facts Mini-Poster
- Machines Facts Sheet #2: Inclined Planes
- Machines Facts Sheet #2 Activity Page

Lesson 3: Wedges

- Wedges Fast Facts Mini-Poster
- Machines Facts Sheet #3: Wedges
- Machines Facts Sheet #3 Activity Page

Lesson 4: Screws

- Screws Fast Facts Mini-Poster
- Machines Facts Sheet #4: Screws
- Machines Facts Sheet #4 Activity 1
- Machines Facts Sheet #4 Activity 2

Lesson 5: Levers

- Levers Fast Facts Mini-Poster
- Machines Facts Sheet #5: Levers
- Machines Facts Sheet #5 Activity 1
- Machines Facts Sheet #5 Activity 2

Lesson 6: Pulleys

- Pulleys Fast Facts Mini-Poster
- Machines Facts Sheet #6: Pulleys
- Machines Facts Sheet #6 Activity

Lesson 7: Wheels & Axles

- Wheels & Axles Fast Facts Mini-Poster
- Gears Fast Facts Mini-Poster
- Machines Facts Sheet #7: Wheels & Axles
- Machines Facts Sheet #7 Activity Page

Lesson 8: Compound Machines

- Fast Facts Folder: Compound Machines
- Machines Facts Sheet #8: Compound Machines
- Machines Facts Sheet #8 Activity 1
- Machines Facts Sheet #8 Activity 2

Machines Review Activities

- Machines Review Activity 1
- Machines Review Activity 2
- Machines Review Activity 3
- Machines Review Activity 4

FLIGHT SECTION

Lesson 1: Early Flight

- Fast Facts Folder: Early Flight
- Early Flight Folder Activity Page

Lesson 2: Modern Flight

- Fast Facts Folder: Modern Flight
- Modern Flight Folder Activity Page

Lesson 3: Pioneers of Flight

- Flight Facts Sheet #1: Pioneers of Flight
- Flight Facts Sheet #2: Early Airplane Manufacturers
- Flight Facts Sheet #3: Early Aviators
- Flight Facts Sheet #1, 2, 3 Activity 1
- Flight Facts Sheet #1, 2, 3 Activity 2
- Flight Facts Sheet #1, 2, 3 Activity 3

Lesson 4: Air Travel

- Flight Facts Sheet #4: Air Travel
- Flight Facts Sheet #4 Activity Page

Lesson 5: Parts of an Airplane Print & Google Slides

- Flight Facts Sheet #5: Parts of an Airplane
- Flight Facts Sheet #5 Activity Page
- *PDF with a link to Google Slides

Lesson 6: How Airplanes Fly

- Flight Facts Sheet #6: How Airplanes Fly
- Flight Facts Sheet #6 Activity Page

Lesson 7: Gliders

- Flight Facts Sheet #7: Gliders
- Flight Facts Sheet #7 Activity

Lesson 8: Helicopters

- Flight Facts Sheet #8: Helicopters
- Flight Facts Sheet #8 Activity Page

Flight Review Activities

- Flight Review Activity 1
- Flight Review Activity 2
- Flight Review Activity 3
- Flight Review Activity 4

Gravity *Fast Facts*

Gravity is a force that **pulls** any object that has **mass**. It pulls objects toward each other. Earth's gravity keeps all objects from flying off its surface. Objects don't have to be close for gravity to work. Earth's gravity even works on objects in space. Gravity is the force that keeps the moon in orbit around Earth.



GRAVITY IN ACTION



Gravity pulls the parachute from the sky to the ground.



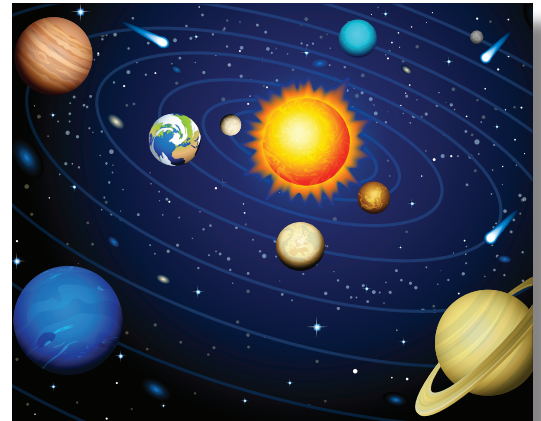
Gravity causes the apples to fall from the tree.



Gravity pulls the jumping boy back to the ground.

Gravitational Forces

Gravity is a force that pulls any object that has mass. It is the force that keeps the stars and planets in orbit. Earth's gravitational force is what keeps people, animals, and objects from flying off its surface. Earth's gravity is so strong that it reaches out into space and pulls the moon into its orbit.



Gravitational Force



Gravity's Pull

Gravity causes leaves to fall from trees. It keeps your computer on your desk. It even makes rain fall from the clouds. Gravity is the force that pulls a ball back down to the ground when it is thrown into the air.

Gravity is the force that powers a roller coaster. Roller coaster cars are clamped securely to the rails of the track by three sets of wheels. The cars don't have motors. They are pulled to the top of the first hill (the lift hill) by a chain that is connected to a motor at the top. The cars are building up energy as they go up the hill. The track acts as a channel for gravity. Once the cars reach the top of the first hill, the force of gravity takes over and the cars go zooming down the hill building up a tremendous amount of speed. The momentum of this speed keeps the cars looping around and going up and down the rest of the hills until the ride is over.



Gravity's Power

Name _____

FORCE & MOTION
GRAVITY MINI-POSTER/
FACTS SHEET #8
ACTIVITY

Gravitational Forces

1. Write a brief description of gravity.

True or False

Write T for true or F for false after each statement.

2. Earth's gravity is weak.

3. Gravity makes rain fall from the clouds.

4. Gravity keeps the stars and planets in orbit.

5. Gravity moves in a circular motion.

6. Objects have to be close for gravity to work.

7. Gravity is the force that powers roller coasters.

8. Gravity causes apples to fall from trees.

9. Circle the picture that best shows gravity in action.



Answer Key

Page 2

1) Gravity is a force that pulls any object that has mass.

2) F 3) T 4) T 5) F 6) F 7) T 8) T 9) last picture