

Grade 3 Science

Lesson: 2-1

Unit: Forces Causing Movement

Topic: Introduction to Forces

Lesson

- Explain to students that we will study forces, and learn that forces cause movement. We will also learn more about energy.
- Hand out pictures page, read information at top of page
 - * Inform students that paper is not for them, need to be careful with it so other classes may use it.
- Discuss a few examples of the effects of forces
 - Baseball flying through the air
 - Sled moving down the hill
 - Kite in the air
 - Leaves falling to the ground.
- Have students examine the pictures and think about what forces are.
- Hand out worksheet → students think of questions they have about forces, then record answers throughout unit

Reminders

None

Supplies Needed

- Pictures page
- Forces Questions worksheet.

Homework

Notes

Grade 3 Science

Lesson: 2-2

Unit: Forces Causing Movement

Topic: What is a Force?

Lesson

- Place a block on a desk and ask "How can we move this without it leaving the surface of the desk?" → push or pull
- Read the information about "What is a Force?", show pictures to students
- Ask students if they have experienced this (pulling or pushing, but not being able to move something).
- Hand out worksheet and picture page from previous class
- Students work with a partner to find Examples of push and pull forces.
- Discuss findings at end of class.

Reminders

None

Supplies Needed

- What is a force info
- Block
- Worksheet
- Push/Pull pictures
- Pictures page from previous class

Homework

- Back of worksheet not used today

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Lesson: 2-3

Unit: Forces Causing Movement

Topic: Types of Forces

Lesson

- Hand out the "types of forces" information.
- Have student volunteers read each section, pausing to discuss and take ideas of more examples.
- Have students take out worksheet from previous class
- Have students ~~copy~~ write definitions for "force" and "movement" on the back of the page
→ dictate definitions to them from answer key
- On the front of the page have students label their examples as "G" - gravity, "M" - muscular, "B" - buoyancy or "F" - friction
- When complete students are to discuss the questions found on the back page of the "types of forces" page
- Discuss answers (see answer key)

Reminders

Supplies Needed

- Worksheets from last class
- "Types of Forces" info pages
- Definitions
- Answers to questions

Homework

Notes

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Lesson: 2-4

Unit: Forces Causing Movement

Topic: Examples of Forces

Lesson

- Review Gravity, Buoyancy, Muscular force and Friction
- Hand out worksheet and explain activity
 - We will take a walk around the school
 - We will look for Forces, and categorize them
 - Forces will be written on ~~in~~ the worksheet.
- Take students on a walk around the school, stopping ~~at areas~~ every once and a while to allow them to write information on their worksheets.
- Return to room and discuss findings.

Reminders

None

Supplies Needed

- Worksheets.

Homework

Notes

Grade 3 Science

Lesson: 2-5

Unit: Forces Causing Movement

Topic: Push or Pull Forces

Lesson

- Review: Force is a push or pull that can cause motion
- Put T-chart (empty) up
 - review that force
- Ask students to name a force we have studied
 - put force on proper spot of T-chart (see answer)
- Show paper with "Static Electric Force"
 - discuss static electricity as charged matter, having a positive or negative charge. Opposite charges attract, like charges repel.
 - ask which side of chart it goes on → middle
- Ask students if they can think of something else that has two different sides that can either attract or repel → magnets
 - magnets have poles. Similar poles repel, opposite poles attract
 - add paper to T-chart
- Hand out worksheet and ~~read~~ read through front page
- Explain back of sheet is a review sheet for quiz in a few classes
- Teach students how to study by quizzing their friends
- Students complete sheet, then study * Verify answers first

Reminders

Supplies Needed

- T-chart
- Papers with names of forces
- Sticky Tack
- Worksheets
- Answers

Homework

Notes

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Lesson: Z-6

Unit: Forces Causing Movement

Topic: Magnetism Lab

Lesson

- As a class, orally review questions from last class (without looking at paper)
- Remind students that they will write a quiz on this information next class.
- Explain to students that today they will perform an experiment.
- Review expectations → behave, listen, keep area clean, safe, don't damage equipment, stay on task etc.
- Explain experiment to students (see worksheet)
- Students work with a partner on experiment.
- Hand out worksheet
- Allow for clean up time at end of class
→ All supplies should be returned exactly as received

Reminders

- | | |
|---|---|
| <ul style="list-style-type: none">- 10 containers with paperclips and other items- 10 (or more) magnets- Worksheets | <ul style="list-style-type: none">- Review questions- Experiment expectations (not done yet) |
|---|---|

Homework

Notes

* Demo in individual groups

- ① Show "U" magnet works on both sides (use paper clip)
- ② Have student grab "S" side of bar in "S" side of "U"
- ③ Flip and show how it works
- ④ "Walk" bar around table in "U"
- ⑤ Hold two bars close, "S+N" try not to let touch
- ⑥ Hold two bars close, "S+S" try to touch
- ⑦ Hover "U" magnet on top of other "U"

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Lesson: 2-7

Unit: Forces Causing Movement

Topic: Quiz / Experiment Write-up

Lesson

- Remind students of test writing expectations
- Hand out types of forces quiz
- When finished quiz students may pull out lab paper and continue working on write up.
- If students still need ~~or~~ supplies remind them of rules
- Students should finish write-up today.

Reminders

3/20

Supplies Needed

- Experiment supplies (from last class)
- Quizzes

Homework

Notes

Combine
W 2-9

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- ③ have student push against my hand 1st resist ask them to do same 2nd don't resist = same force did not, then did cause

Lesson: 2-8

Unit: Forces Causing Movement

Topic: The Affects of Forces magnet

2 Periods

Lesson

- Review "What is a Force?" → Push or pull that can cause motion (3)
"What is movement?" → when part of an object changes position
- Explain that forces can do other things as well
- Drop a basketball, watch it fall, compare to pushing a basketball to the floor - "What happens to the speed of the ball?" → fast
- Talk about breaks on a bike → bike slows down
- Talk about baseball, hitting ball with bat - "What happens to ball?" → it changes direction (1)
- Hand a student a piece of clay and ask them to squeeze it.
- "What happens to clay?" → it changes shape (2)
- "In these examples, what did we do with forces?" → change speed, direction and shape.
- Show worksheet and explain - group, play with clay, figure out ways to change shape. Play with cars ... → *
- Hand out worksheets and clay
- Remind students to keep good care of clay - IT IS MINE

Reminders

- ① Have student pass ball to me, hit back w hand
② Stand on desk, drop clay → changes shape, Throw grand

Supplies Needed

- Basketball
- Clay (play doh)
- toy cars

Homework

Notes

- * Play w cars → faster + slower
→ direction

→ Need 2 classes

combine
W 2-9

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Lesson: 2-9

Unit: Force Causing Movement

Topic: Gravity / Muscular Force

Lesson

- Ask students "What is a prediction?" → guess at what will happen
- Explain that in science we call it a hypothesis
- Explain activities to students
 - Drop balls from height, guess which falls fastest / slowest
 - Throw balls, guess which will go furthest
- Explain that students will first hypothesize, then test
- ~~Hand out sheet~~ Hand out sheet for students to hypothesize - collect sheets
- Take students outside
 - Drop balls from playground → one at time, take guesses
 - Drop balls from playground → two at time to show they are same
 - Allow students to throw balls (from holla hoop) → measure distance → write #
 - Back inside to discuss.

Reminders

- 3 balls, various size/weight (basketball, tennis ball, med utility ball) ← lots of each
- Measuring tapes
- Clip boards
- holla hoops
- work sheets
- pegs

Supplies Needed

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Homework

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Notes

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Next class
class activity

instead, finish up last
class activity