

Grade 3 Science

Lesson: 2-10

Unit: Forces Causing Movement

Topic: Balanced/Unbalanced

Lesson

- Review concept of multiple forces acting on an object
 - Talk about dropping ball last activity (Gravity, Friction, Buoyancy)
- Discuss concept of balanced → all things equal
vs unbalanced → not equal
 - Demonstrate with a student
 - hand to hand, push equally, then do again not equal
 - Discuss
- Explain game, then play → stand across from partner, try to make partner move by pushing hands
- Hand out worksheet to partners
 - explain
 - keep to self (pairs)
 - answer questions without telling others
 - see who gets closest to true answer
- Read worksheet
- students work
- Take up → students read answers

Reminders

Supplies Needed

Worksheet

Homework

Notes

Grade 3 Science

Lesson: 2-12

Unit: Forces Causing Movement

Topic: Using a Balance

Lesson

- Review → balanced vs unbalanced forces
 - types of forces — classify each as a force needing contact or not needing contact
- Show class a balance
 - explain how it works (gravity on objects on both sides)
 - show comparing 1 object to another
 - show balancing # of objects = 1 of another object
- Show and explain worksheets
- Students do experiment

Reminders

Supplies Needed

- | | | | |
|------------|----------------|------------------|--------------------------------------|
| - Balances | - Blocks | - Marbles | - Water (in bottles) |
| - Cards | - Toy Pinesaws | - Sand (in bags) | - Worksheets (handed out last class) |

Homework

Notes

Grade 3 Science

Lesson: 2-13

Unit: Forces Causing Movement

Topic: Speed and Direction
Contact vs No Contact

Lesson

- Start class by playing "Simon Says" → use instructions ~~are~~ with speed and direction words
- Ask class "What does direction mean?" - which way an object is moving
"What does speed mean?" - how fast an object is moving
- Have groups of 4 make lists of speed and direction words (2 lists)
→ could make it a competition to have the most words
- Take up lists
- Read through back of worksheet
- Hand out worksheet
- Students work for remainder of period.

Reminders

Supplies Needed

- Worksheets

Homework

Notes

Grade 3 Science

Lesson: 2-14

Unit: Forces Causing Movement

Topic: Slowing Movement
- explain + initial/tkt

Lesson

- Explain that starting today students will be using what they know to design and build something to slow the affects of a force
- Explain activity → We will first drop a small sponge ball and time ~~the~~ how long it takes to drop
 - Pairs will design something to slow the drop down
 - Pairs will build their design
 - We will drop the balls again with your designs and time how long they take to drop
- Show and explain worksheets
- Demonstrate how to time ball drop → Safety of standing on desk
→ How to time
- Students perform initial timing activity.

Reminders

Supplies Needed

- Sponge balls
- Worksheets
- Timers

Homework

Notes

Grade 3 Science

Lesson: 2-15

Unit: Forces Causing Movement

Topic: Slowing ~~Staying~~ Movement - Design

Lesson

- Review concept of experiment
 - slow the speed with which the ball falls
 - remind students that they are not to change the experiment (i.e., do not throw ball, do not hold onto something attached to ball etc)
- Tell students that today is used to design something they can use to slow the fall speed
 - ~~Design~~ Think of ideas (talk with partner)
 - Draw design, make ~~exp~~ supplies list
 - Talk to me
 - Think of back-up / extra ideas
- Remind students that they need to bring "extra" supplies (not on list)

Reminders

- * Make a list of supplies to be supplied (on past it → stick it to bucket)

Supplies Needed

Homework

- Bring "extra" supplies next class

Notes

Grade 3 Science

Lesson: 2-16

Unit: Forces Causing Movement

Topic: Slowing ~~stopping~~ Movement - ~~Build~~ Build

Lesson

- Remind students of rules
 - do not damage ball
 - ~~drop~~ ball must fall to ground
- Today is used to build design
- Once built students may practise with their design and make alterations as needed
- Encourage students to test throughout build (if multiple aspects to design)
- Designs need to be removed from ball at end of class... unless no other Gr 3 needs them before next class

Test period

Reminders

Supplies Needed

- Sponge Balls
- Popsicle sticks etc
- Timers
- Straws
- String
- Play Clay

Homework

Notes

Grade 3 Science

Lesson: 2-17

Unit: Forces Causing Movement

Topic: slowing ~~stopping~~ Motion - ~~Book~~ Test/Questions

Lesson

- Students take the first few minutes to re-attach their design to the ball
- ~~stop~~ Review safety and procedure for experiment (see 2-14)
- Students perform experiment
- Help with calculations
- Students individually answer questions at back of booklet.

Questions
only

Reminders

Supplies Needed

- Sponge Balls
- Timers

Homework

Notes

Grade 3 Science

Friction

Lesson: 2-18

Unit: Forces Causing Movement

Topic: ~~Slipping~~ ~~Friction~~ ~~Static~~

Lesson

- Review the concept of Friction - surfaces rub together
 - causes a force between them
- Discuss the concept that the amount of Friction depends on the surfaces in contact
 - rough surfaces cause more friction
 - smooth surfaces cause less friction
 - ex. rubbing sandpaper on wood vs rubbing two pieces of wood together.
- Show class a variety of objects
 - as a class, sort into "rough" and "smooth"
- Send groups to table with sample of each and magnifying glasses
 - *cheap microscopes if possible
- Groups examine surfaces - discuss
- Hand out question sheet → groups discuss questions
- Ask each group to present their answer to one question

Just let them explore surfaces w magnifying glass

Reminders

Supplies Needed

- Sand paper
- 2x4 (piece)
- Cloth
- Flexi glass
- Plastic
- Cardboard

Homework

Notes

Teach how to use a magnifying glass

- Pull out 3 grits of sand paper → compare
- Rub in sand pencil in lowest grit (lots removed) show surface
- Compare to highest grit → little removed
- Sand using all 3 → compare original (low grit only) to all 3 (smooth)

Grade 3 Science

Lesson: 2-19

Unit: Forces Causing Movement

Topic: Increasing/Decreasing Friction

Lesson

- Hand out worksheet
- Read through information → Discuss
- Explain task at end and do an example of each
 - increase = tire tread
 - decrease = oil on bike chain
- When students finish they use their remaining time to work on other incomplete work.

Reminders

Supplies Needed

- Worksheet

Homework

Notes

Fin worksheet "thins" = things
period at end

Grade 3 Science

Lesson: 2-20

Unit: Forces Causing Movement

Topic: Safety Devices

Lesson

- Place toy "man" on toy car
- Push car across floor
- Stop car suddenly → man goes flying off
- Discuss "Objects in motion stay in motion unless acted on by an unbalanced force"
 - explain man is moving with car, but force ~~of hand~~ only stopped car
 - how do we make sure person stops? - seatbelt
- Discuss engineers designing things to slow or stop the affects of forces.
 - ask students for examples (brakes, hockey pads, helmets etc)
- Hand out work sheet
- Students work, then finish other work
- Take up at end of class

Reminders

Supplies Needed

- Toy Car
- Toy man

- Worksheets

Homework

Notes