Science
Week 3, Term 4

FORCES

Science Lesson - Week 3

Focus Question
What makes things move?

For this lesson you will need: - paper, pencil
- laptop or tablet to research
- a marble or ball or bat/ball

Understand how **force** can change the distances which objects move.

•Undergo an investigation to predict and explain how distance of objects are affected by force
•Research and understand more about balanced forces

•Forces happen around us on a daily basis, and it's important to understand how we function in our world with the use of forces

Let's **label the forces happening in each image**, add arrows to show the direction of the force. There may be more than one arrow. Arrows can be straight or curved.

Look at the images below and try to answer the questions with a partner.

What forces are happening?

Are they all contact (touch) forces?

Possible Responses / answers

1.Visit the web link
2.Read the information ‘What is a force?’
3. Answer these true/false questions
4. On the lines provided add detail or examples where possible

https://www.dkfindout.com/us/science/forces-and-motion/what-is-force/

Open the weblink and read the information page *What is a Force?*

Read the statements. Circle whether they are true or false. For a bonus point, if you think the answer is false, write the correct statement below the question.

1. A push is the only way things move. True False

2. Gravity is a type of force. True False

3. A force can't change the shape of something. True False

4. Forces can only act when objects touch. True False

5. The ground can't push objects back up. True False

6. A magnet can pull an object without touching it. True False

Check your score with your teacher.

My score: _____ / 6 **Bonus points:** _____

1. A push is the only way things move. True False

False, a pull can also move things.

2. Gravity is a type of force. True False

True

3. A force can't change the shape of something. True False

False, a push or pull can change something's shape.

4. Forces can only act when objects touch. True False

False, some forces work from a distance.

5. The ground can't push objects back up. True False

False, the ground does push objects back up.

6. A magnet can pull an object without touching it. True False

True

Check your score with your teacher.

My score: _____ / 6 **Bonus points:** _____

Balancing Forces

https://www.inquisitive.com/guided-research/1422-balanced-forces

Use these websites and library books to investigate balanced forces.

Find examples of balanced forces around us then illustrate and label them. Remember to use arrows to show the direction of the forces.

For something to start moving, one force is stronger than the other. When two forces are the same strength but act in an opposite direction, they are called **balanced forces**. When an object is still, or moving at the same speed, the forces acting on it are balanced.

Use these websites and library books to investigate balanced forces.

Find examples of balanced forces around us then illustrate and label them.
Remember to use arrows to show the direction of the forces.

Example:

a bird flying

a boat floating

standing

tug of war

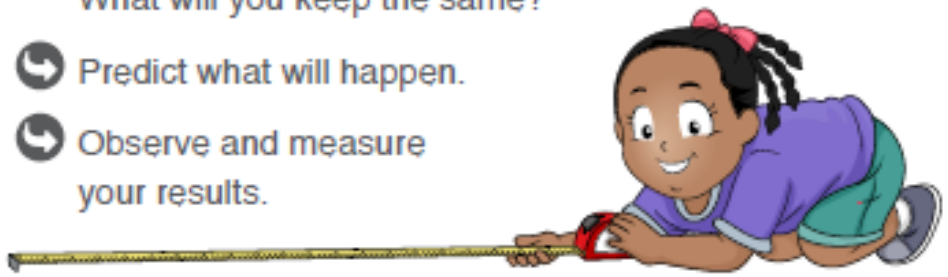
Try it! With a partner or small group, investigate how the strength of a force affects the distance an object moves. Choose an action below to investigate and follow the steps below.

Flick a marble | Kick a soccer ball | Bat a ball

Plan your experiment

Question: How can I change the distance an object moves?

- What will you change?
  What will you keep the same?
- Predict what will happen.
- Observe and measure your results.



Answer: Work out an answer to your question.

Mrs Hamson has completed the experiment on the next slide

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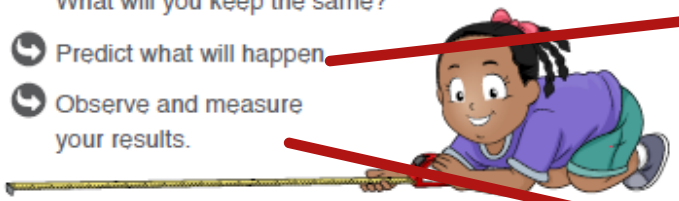

Answer: Work out an answer to your question.

How will I change the distance an object moves?

I will strike the ball harder if I want it to go a further distance, and I will strike the ball softer if I want the ball to travel a less distance.

Force of my swing

Bat, tee, swinging arm, ball

I predict that …
*the harder I swing/strike the more the ball will travel
*the softer I swing/strike the less the ball will travel

See video on next slide

Optional / Extension Task

Forces are in action all around, constantly pushing, pulling and twisting. How can a force make us feel?

How can a force be fun, terrifying, make us feel like a superhero?

Draw and explain some interesting examples. Include the labelling of the forces at work in each one.

End of Science
Week 3