

Types of Forces

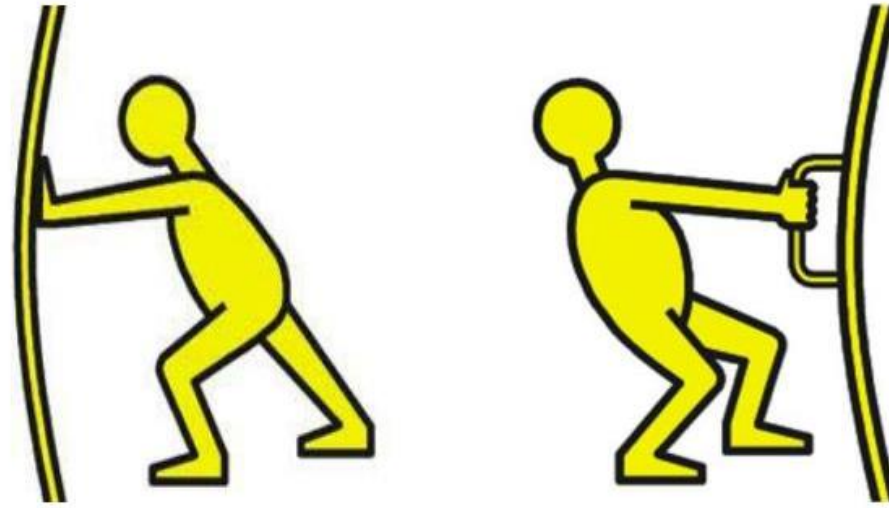


Thursday 9th December 2021

WALT: To understand forces through
a variety of objects.

What is a force?

A Force is a **PUSH** or **PULL**.



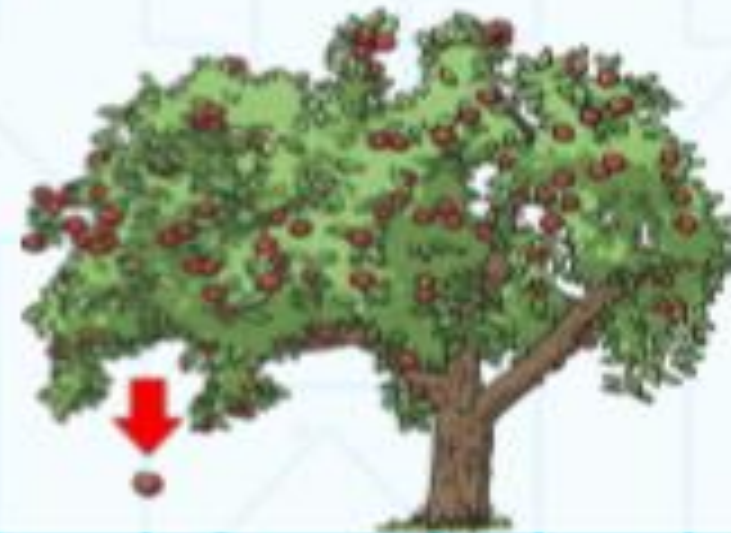
<https://www.bbc.co.uk/bitesize/topics/zvpp34j/articles/zywcrdm>

'Forces' – bbcbitesize


Gravity

<https://www.bbc.co.uk/bitesize/topics/zf66fg8/articles/zqbm3k7>

What is gravity? bbcbitesize



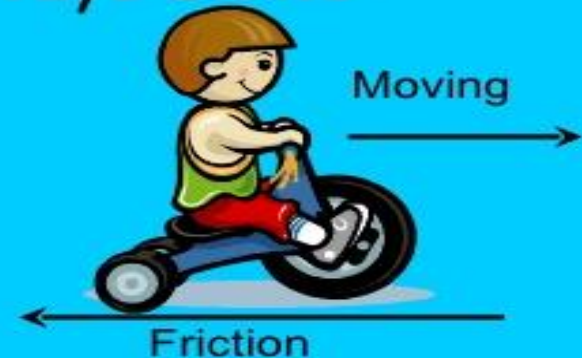
Have a go activity

- Groups of 4,
 - Number yourselves 1-4,
 - Number 1's only to go and collect a ball
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- The illustration shows a girl with brown hair and a blue headband, wearing a blue t-shirt with 'APS physics' written on it and blue pants. She is holding a small yellow ball in her right hand and a large orange basketball in her left hand. The background is a light blue wall with a brown floor line at the bottom.
- Have a go at holding the ball in your fingers, number 1's starting first. You are going to let go of the ball gently towards the floor and then discuss the impact of gravity and forces involved.

Friction

What is Friction?

- Friction is a force between two surfaces that are sliding, or trying to slide across one another, for example when you try to push a toy car along the floor.
- Friction always works in the direction opposite from the direction the object is moving, or trying to move. It always slows a moving object down.



Have a go activity

- Number 4's to go and collect a toy car,

One at a time in your groups, have a go at pushing the toy car to each other



- Discuss what is going on. Talk about the forces and friction

Air resistance



Have a go activity

- Number 2's to collect a flying feather
- One at a time, hold this above your head and gently let go



Discuss what is going on. What causes this to slow down / stop spinning?

EXPERIMENT TIME!!



WALT: To investigate whether different numbers of paperclips change the drag force on a paper aeroplane

But first, we must write down a



You have 3 minutes from now to write this down. We cannot start this experiment until everybody has finished.

In groups of 4, you will now be :

1) Making a paper aeroplane with the instruction sheet provided

-You only have 10 minutes to make this.



-If your group have finished, write down a team name on your aeroplane and then go and help others.

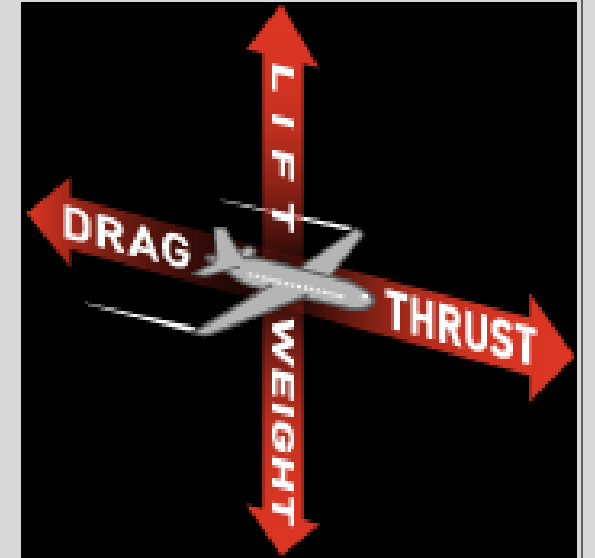
Remember, we are a team.

Testing time!!

- Choose a different member of your time for each aeroplane flight.
- Each team member will be throwing these at the same time so listen to the teacher very carefully.
- We will be recording the results at the same time
- **Golden rule:** Any children throwing these at the wrong times, will be removed from the rest of this experiment

Four Forces Affect Things That Fly:

1. **Weight** is the force of gravity. It acts in a downward direction—toward the centre of the Earth.

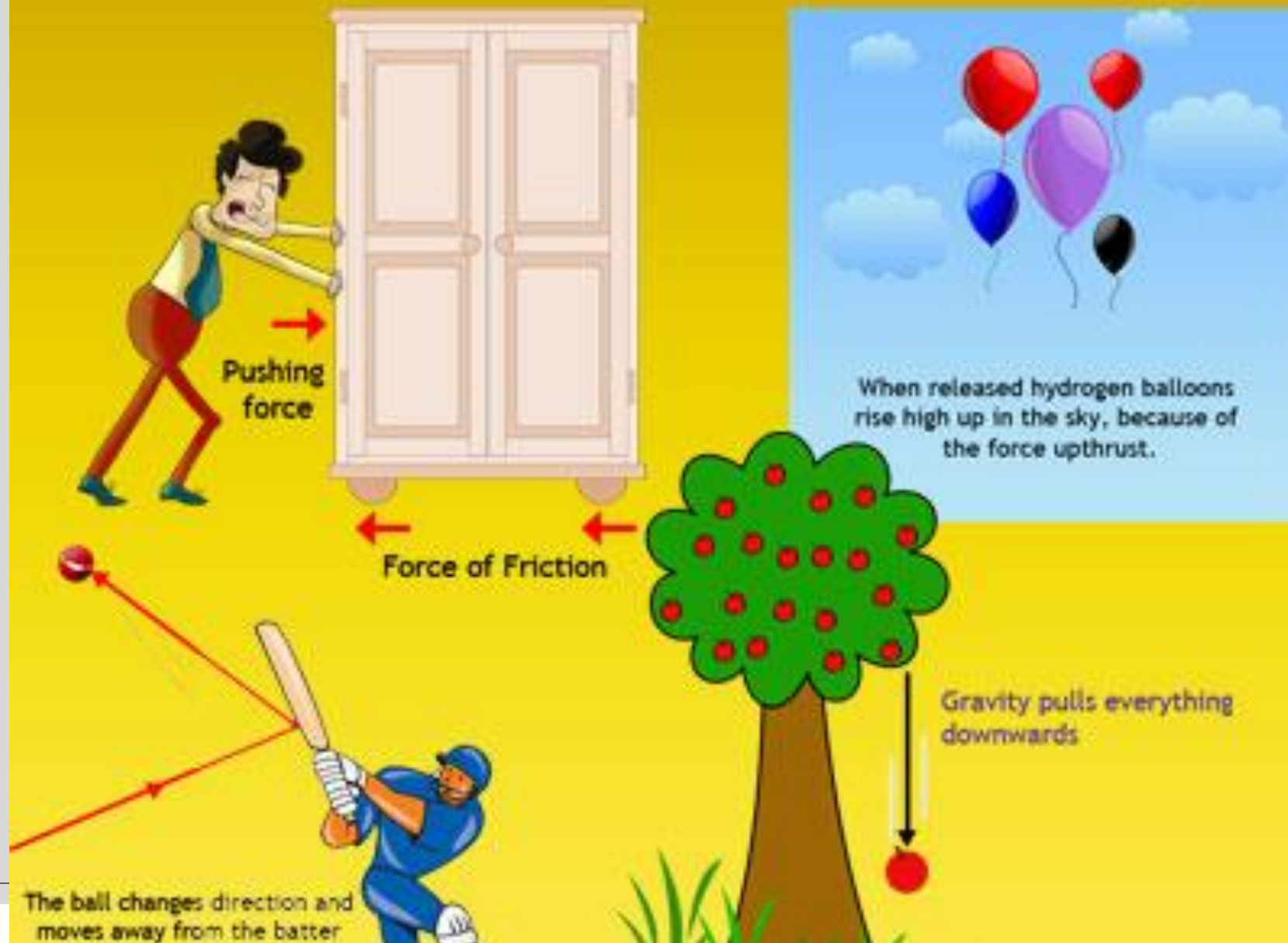


2. **Lift** is the force that acts at a right angle to the direction of motion through the air. Lift is created by differences in air pressure.

3. **Thrust** is the force that propels a flying machine in the direction of motion. Engines produce thrust.

4. **Drag** is the force that acts opposite to the direction of motion. Drag is caused by friction and differences in air pressure.

Forces and Motion



Plenary