



WEEK 2: FORCES



Science in the News



A depiction of Isaac Newton when he was isolating, due to the plague, at his family farm in 1665. Photo credit: The Royal Institution



Try it at home - Do a friction experiment

What do you need?

- A toy that has wheels e.g a toy car
- A ramp - you may have a ramp as part of a toy set, otherwise use a large book, chopping board or other flat object
- A ruler or tape measure
- A few books to rest your ramp on
- A few different materials e.g a towel, a t-shirt, a bobbly jumper, crinkled tin foil

What am I learning?

Friction is a force between two surfaces that are trying to slide across each other. When the toy travels the furthest, it has the least friction with the material on the ramp. The rougher the surface, the more friction is produced. If you want to learn more about the science behind this, check out our lesson on our website - [Science Creates Outreach](https://www.sciencecreatesoutreach.com)



Parents:

For primary learners, work through our full 'Forces' lesson plan with your child. It is based around the national curriculum learning objectives found in the year 5 'Forces' topic. Download here - [Science Creates Outreach](https://www.sciencecreatesoutreach.com)

For secondary learners, the contents can be discussed in more depth using the original online article. **

NEWTON DISCOVERED GRAVITY WHILST SELF ISOLATING!

It is said that Issac Newton was sitting under a tree when an apple fell out and landed straight on his head. This made him realise that there must be a force causing the apple to fall down to earth. He called that force gravity. Gravity is the attractive force that causes all objects to fall towards Earth. It is the reason we don't all float off into space. He described his theory using mathematics that had never been done before. History tells us that Newton made his initial studies of gravity during quarantine from the plague all the way back in 1665. He left his university, his friends and his life in Cambridge and spent a whole year in isolation, during which time he developed his theory on one of the most groundbreaking scientific discoveries of his time; gravity.

Instructions:

1. First, put a pile of books on the floor and place your ramp from the books to the floor. Avoid carpet if possible. Top tip - Don't make the ramp too steep. You want your cars to glide off it at the bottom if possible.



2. Next, put one of your chosen materials on the ramp e.g lay a towel over it or cover it in bumpy tin foil.

3. After that, hold your toy vehicle at the top of the ramp and gently let go Top tip - Do not push the vehicle down the ramp.

4. Then, measure the distance between the bottom of the ramp and the back wheels of the car. Write this down. 5. Repeat steps 2, 3 and 4 but with a different material on the ramp each time.



WEEK 2: FORCES

Across:

1. Type of texture of a surface that increases friction
3. This weeks theme
5. A place where there is no gravity
6. A type of design that decreases water resistances
7. An object that increases air resistance so that a person can move slowly through air
10. A fair test designed to discover how something works, or test a theory
11. The person who discovered gravity

Down:

2. A force that causes objects to fall towards Earth
4. A type of friction that slows down objects moving through the water - "Water _____"
8. Type of texture of a surface that reduces friction
9. The force between two objects sliding across one another

Answers
 1. Rough 2. Gravity 3. Forces 4. Resistance 5. Space 6. Streamline 7. Parachute 8. Rough 9. Friction 10. Experiment 11. Newton



Read, Watch, Ask



Have a read of our [lesson](#) to learn more about nutrition.



Friction can create heat. Watch [here](#) to find out.



Got any questions about today's topic? Email us at info@sciencecreates-outreach.co.uk and we'll answer them!



Did you know?

The force of gravity is less on the Moon than Earth because the Moon is smaller than Earth. This is why astronauts on the Moon can jump really high. Something that weighs 100 kg here on Earth only weighs only 16.5 kg on the Moon.

Competition Time!



For this week's competition, get creative and write the opening paragraph to a short story. Think about the forces that are mentioned in this week's issue (and lesson). What would happen if one of those forces didn't exist or if there was no friction or gravity? Maybe objects can travel really fast through the air or water, or can the main character turn off gravity when they want to?

Your competition entry should:

- be no more than around 150 words
- include your first name and age e.g. Patrick, age 12.

Finally, type your story starter up, or take a photo of your writing, and send it to juniors@unitdx.com.

The deadline for this issues competition is Thursday 7th May 2020.

Last week's winner!

We had some fantastic entries from last week's invention competition. Congratulations to our winner, Albert Riddell, age 7, for your clever and creative entry. We love the 'Relax Jimmy 2000'!



COMPETITION NOW CLOSED