British Science Week is 17th – 16th March

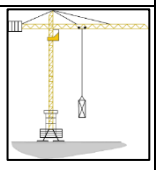
Funded by IOP Institute of Physics

LET'S CELEBRATE PHYSICS

Fair Futures is running some physics activity days in the Easter holidays on 7th and 8th April. We will be finding out about magnets and how important they are in our lives. You can sign up here: https://www.fairfuturescic.org/about-4-2. It is a free event with lunch, snacks and drinks provided.

Before then, why not try these fun activities about physics and speed. The answers are on our website. Use the link above or this QR code:

WHAT DO YOU KNOW?

Physics is the study of… Put a tick ✓ in the correct boxes			
plants  x *This is biology*	chemical processes  x *This is chemistry*	space  ✓	electronics  ✓
magnetism  ✓	energy  ✓	animals x *This is biology*  https://commons.wikimedia.org/wiki/File:Animal_diversity.jpg	forces  ✓

WHAT MAKES A GOOD PHYSICIST?

I think a physicist needs to be good at – *as well as understanding basic physics and having a strong foundation in maths, physicists must have a curious mind, good communication skills, the ability to work in a team and excellent problem-solving and design skills.*

I think their work is about – *physicists may study climate, space, renewable energy, lasers or engineering. They may help design video games or develop digital healthcare or be a teacher in a school.*

and I think they normally work in – *you may think that physicists are always based in a university or a laboratory, but they could be based in a factory or a game studio or in a hospital or school.*

WHAT DO YOU KNOW ABOUT SPEED?

What is speed? *Speed is the time it takes for an object to cover a distance.*

What two measurements do we need for speed? *Distance and time.*

What is kinetic energy and what is elastic potential energy? *Kinetic energy is energy stored in a **moving object.** Elastic potential energy is energy stored in an object that has been stretched or squashed. It is **potential energy** because the stored energy is released when the object returns to its original shape.*

PUT THESE IN ORDER FROM SLOWEST TO FASTEST

cheetah 5

Usain Bolt 2

https://commons.wikimedia.org/wiki/File:Usain_Bolt_Rio_100m_final_2016k.jpg

car 6

cat 3

horse 4

Formula 1 car 7

aeroplane 8

Lockheed Blackbird 9

snail 1

DO YOU USE THESE TO MEASURE DISTANCE OR TIME?

a ruler — D T

stopwatch on a mobile phone — D T

a tape measure — D T

a stopclock — D T

a trundle wheel — D T

a stopwatch — D T

CAN YOU THINK OF SOME UNITS TO MEASURE SPEED?

You need a measurement for distance and one for speed. Add your own ideas to the answers below

Distance	**Time**	**Speed**
metres / kilometres / miles	seconds / minutes / days	metres per second (m/s)
millimetres / centimetres	***hours / weeks / years***	***kilometres per hour (km/h)***

All the answers can be found on our website along with additional physics activities where you can learn how to build a windmill that can lift a marble! Resources are also available in Chinese, Urdu, Arabic and Ukrainian.

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https://www.fairfuturescic.org/about-4-2

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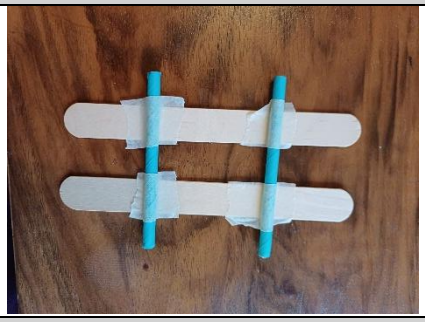
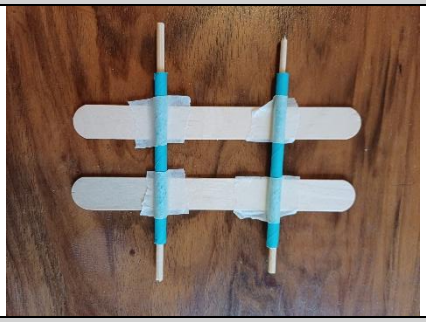
MAKE A BALLOON CAR AND MEASURE ITS SPEED

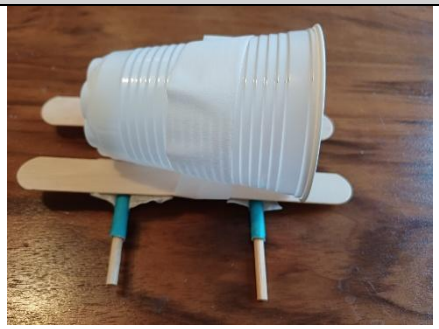
1.



2.



3.

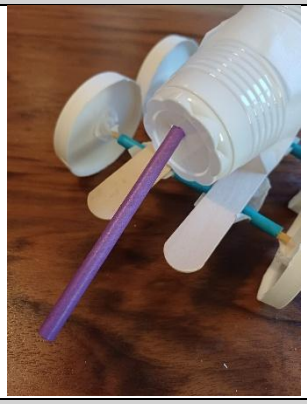


4.

5.

6.

7.



8.

When you blow up the balloon, it stores **elastic potential energy**. This energy is ready to be used. When you let the air go out of the balloon, the **elastic potential energy is transferred to kinetic energy**. Kinetic energy is movement. So, your car moves along the floor.

Can you measure how fast your car goes? You need to measure **how far it travels** and the time it takes to do this. You can use **a ruler** or **a tape measure** for the distance, and the **stopwatch** on a phone for the time. Use this **equation** to calculate the speed – **speed = distance ÷ time.**

What units have you used? The speed could be measured as cm/s or m/s.

Can you make it go faster? Try changing the surface. Does it go faster on a rough or a smooth floor?

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