# SCIENCE NEWSLETTER

The Ogden Trust | School Partnership

Summer Term 2023 - Issue 4

## THE GREAT SCIENCE SHARE

**Look out for the Great Science Share coming to your school.**

**Children of all ages will be challenged to take part in The Great Science Share which is a campaign to inspire 5-14 year olds to ask, investigate and share their scientific questions with new audiences. The aim is to to raise the profile of science in schools and their communities, encouraging young people to be inspired into science and engineering.**

**Wallasey Ogden Trust partnership schools will be exploring wonderful wind, the Great Glider Challenge and the Great Phizzi share which looks at how we can impact climate change through reflection, transparency and measuring temperature and observing weather patterns. Don't forget to send in your entry into your school for the Great Science Share which is on June 13th 2023.**



## EVENTS NEXT TERM

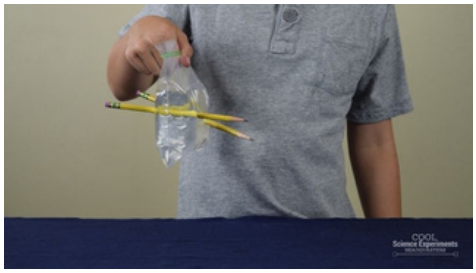
- STEM Clubs
- Mobile Science Library

## Can you explain the science?

## SCIENCE BUSKERS CORNER

### Plastic bag and pencils

Can you stick pencils straight through a bag of water - without it leaking ?



# SCIENCE - DID YOU KNOW...

## Race car drivers tend to blink at the same places in each lap

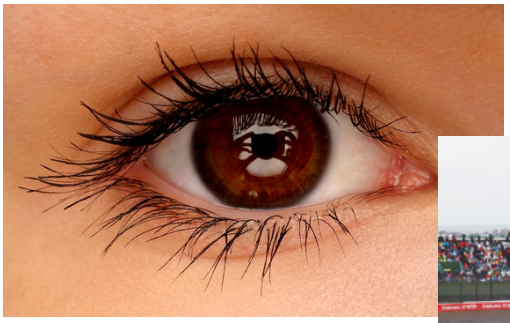
Research shows that the drivers saved their blinks for lower-risk parts of courses! The world goes dark for about one-fifth of a second every time you blink, a fraction of an instant that's hardly noticeable to most people. But for a Formula One race car driver traveling up to 354 kilometers per hour, that one-fifth means almost 20 meters of lost vision.

Considering how often people blink (up to 30 times every minute), a driver could lose as much as 595 meters — over a third of a mile — worth of visual information per minute due to blinking.

People are often thought to blink at random intervals, but researchers found that wasn't the case for three Formula drivers. Instead, the drivers tended to blink at the same parts of the course during each lap.

The drivers had a shared pattern of blinking that had a strong connection with acceleration, such that drivers tended not to blink while changing speed or direction — like while on a curve in the track — but did blink while on relatively safer straightaways.

Have a think about when you blink? Do you blink when you are concentrating? Why not watch people blink? How may times do they blink when they are watching TV, reading a book, risidng a bike? Can you see any patterns?




# "STEM CLUBS STILL GOING STRONG

The success of STEM clubs continues across the partnership with another round of STEM clubs starting this Summer Term. Members of St George's Primary School are working with year 10 students at West Kirby and have already been challenged to make bridges, create fruit batteries and investigated chromatography!

Last term over 75 children achieved a CREST Award with a similar number of children already signed up for the Summer Term. "It has been great to see the confidence of the children grow as they work alongside different people to carry out investigations"

At St Peter's and St Pauls the children in KS1 have loved their STEM Club this term. They have completed lots of CREST Award investigations and activities from Rainbow Collectors to Tea Bag Trouble. Look at our our school twitter page to find out more @SsPeterPaulSch.

**Make sure you don't miss out on all of the fun and sign up to your schools STEM Club!**


"WE LOVE STEM CLUB BECAUSE WE ALWAYS DO SOMETHING FUN AND EXCITING!"

# ENVIRONMENTAL NEWS FLASH

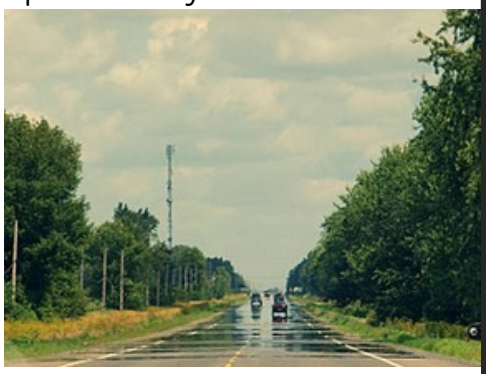
Right now it's the last few days of the "Spring Months" and we are officially heading to summer. We have what most of us might consider lovely forecasts for the next week or so: temperatures around 20-23 o C and light winds. What might the summer months bring? Last year had some days so hot that for the first time I can recall NW schools were shut because of the heatwave.

There are many reasons to be concerned about our weather (the day to day happening) and our climate (the longer-term pattern), and one of them is about living in our towns and cities during heatwaves. It's been known for a long time that towns tend to be warmer than the surrounding countryside –the Urban Heat Island effect. Really helpful in winter, but the opposite in summer. In Merseyside (and the rest of the NW) a heatwave is declared if the night-time temperature stays above 25 o C over three days on the run – meteorologists use night-time for this measure since it's the time of day where temperatures can have the most impact on our well-being. Probably everyone can imagine what it is like trying to sleep when you simply can't cool down in hot humid air. This is hardest of all for the very young and the very old.

Towns and cities get hotter than the country because building materials "soak up the heat of the sun" – they absorb the sun's radiation by day. Buildings and roads often have dark surfaces – so they do this even more. The materials become hot, they store o thermal energy and in turn heat the surrounding air, especially noticeable at night. There's also less of the "green and the blue" – vegetation and open water - that can help to cool us down.

Young people in the Wallasey Partnership Schools are taking a look at this effect for the Great Science Share. In schools they might be testing different surfaces that are placed in the sun and taking a measure of the temperature. You might not have a suitable thermometer at home, but there are things they can do:

- in a park or a garden on a sunny day, where are the places that feel hottest and coolest? Notice as much as possible about the surroundings there.
- if you are somewhere with paving of different colours, (or on a beach with pebbles) compare them? Which feels hottest and which coolest? (Be careful – it was reported last year that some surfaces became uncomfortably hot)
- you might notice a shimmer above roads and cars on sunny days. Warm air is rising and as it loves the path of the light bends and "jiggles". Look for effects like the one in the photo here. Does this happen with pavements too?
- in a sunny car park, look carefully just above the roof of cars for a shimmer. Does this happen equally with all colours?



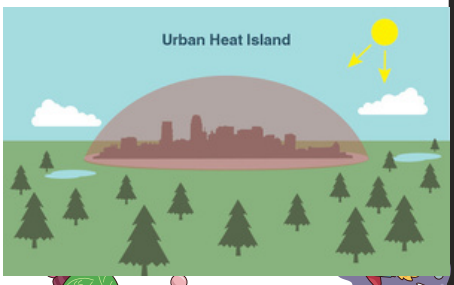
The heating of our towns is a problem; but ideas from physics (and other STEM subjects) can help: what colours and materials should be used? How can the buildings allow gentle cooling air flow between them? Are there trees and vegetation ?– important for biodiversity as well.

In Wallasey schools right now there could well be tomorrow's architects, climate scientists, landscape architects, engineers, builders and urban designers inspired to make the resilient, healthy and beautiful towns of the future.

Article written by Melissa Lord
Ogden Trust NW Regional Representative

## What is an Urban Heat Island?

THE SHORT ANSWER:
AN URBAN HEAT ISLAND OCCURS WHEN A CITY EXPERIENCES MUCH WARMER TEMPERATURES THAN NEARBY RURAL AREAS. THE DIFFERENCE IN TEMPERATURE BETWEEN URBAN AND LESS-DEVELOPED RURAL AREAS HAS TO DO WITH HOW WELL THE SURFACES IN EACH ENVIRONMENT ABSORB AND HOLD HEAT.



# SCIENCE IN THE NEWS - JUPITER'S MOONS

Astronomers have discovered 12 additional moons orbiting Jupiter. That means Jupiter now has a total of 92 moons, more than any other planet in our solar system.

The moons were discovered using NASA's James Webb Space Telescope which captured new images of Jupiter show casing the moons auroras and hazes. Webb sees Jupiter with its faint rings, which are a million times fainter than the planet, and two tiny moons called Amalthea and Adrastea.

The latest moons are between one and three kilometers in size, leading astronomer Scott Shepperd said. "I hope we can image one of these outer moons close-up in the near future to better determine their origins,


## CAN YOU CARRY OUT YOUR OWN SCIENTIFIC RESEARCH FIND OUT ABOUT MOONS FROM OTHER PLANETS IN OUR SOLAR SYSTEM?

# SENSATIONAL SCIENTIST

## How to be an astronaut - Dr Shelia Kanini

**Click on the link above and Meet Dr Shelia Kanini who is a space scientist. She has been awarded an MBE for her services in astronomy and diversity in physics. "Don't be put off by thinking space exploration is only for certain kinds of people – anyone can do it if they work hard. Just have a go, and be proactive."**

**Dr Sheila Kanani is a space cadet, with her head high up in the clouds, even though her feet are firmly on planet Earth. Sheila became interested in space and astronomy at the age of 13 and her passion sky-rocketed from there. She has a PhD in planetary science and her favourite planet is Saturn. Her favourite "work" interests are teaching GCSE astronomy and giving public talks to audiences of all ages and sizes, while representing her place of work, the Royal Astronomical Society, which she adores.**

**Outside of astronomy, Sheila loves to play hockey and the saxophone, enjoys listening to records and dancing like no one is watching with her husband and young son, and curling up on the sofa with an excellent book and her six-fingered cat. Sheila's love of writing began when she was nine and she started a daily journal, which she has kept (mostly) up to date ever since!**

# KITCHEN SCIENCE

ACTIVITY 8


**NEWSFLASH: WATCH OUT FOR NEWS ON THE SPACE CAMPS AND THE SPACE WALK COMING SOON!**

## Book Corner

This book has been written by our featured scientist in this half-terms newsletter – Dr Shelia Kanani .

Do you have what it takes to become an astronaut, a spaceship engineer or to work at Mission Control? Find out all about space and all the incredible space jobs you could do, from training to be a space chef or designing spacesuits to searching for new planets we could live on, or even blasting into space and living in the International Space Station. This book will inspire anyone with an interest in science and space exploration.