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Mobil  Mobil 

July 2020

Week 14 #SolveItWithSTEM@Home

Colouring and Experiment Pack

featuring Eddie the STEM Guru

Oh dear...Eddie has poured hot water on the igloo...and it has melted!

Do you know what temperature water boils at?
And what temperature does water freeze at?

Boils at.....°C

Freezes at.....°C

Hello, we have reached Week 14 everyone! This is our last pack for the summer, we hope you have a lovely break and look forward to seeing you soon!



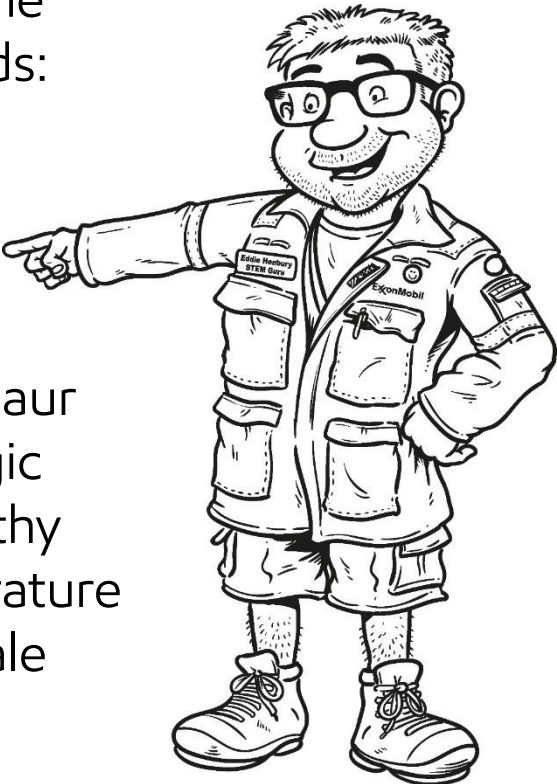
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Q	F	D	I	J	A	Z	P	R	R	I	L	O	Y

Why not give my wordsearch a go...I have included words that have appeared in previous packs!
Good Luck 😊

Can you find the following words:

Helium
Candle
Kitchen
Oxygen
Circuit

Dinosaur
Magic
Healthy
Temperature
Whale



STEM Stars: Stephen Hawking

This week our inspirational STEM star is Stephen Hawking! Take a look below as to why...



Stephen William Hawking (1942 – 2018) published ground-breaking research surrounding **black holes** and the **creation of the universe**. Stephen's research helped guide scientists toward discovering '**the theory of everything**'.

Stephen went to Oxford University to study physics and chemistry. After graduating from Oxford, he went to Cambridge University to further his studies in cosmology (the science of the origin of the universe).

At 21, Stephen was diagnosed with motor neurone disease (MND) and told that he only had two years to live. Stephen used walking sticks and crutches after his diagnosis, but as his illness got worse he had to use an electric wheelchair to get around. He became notorious for driving it a little too fast around the streets of Cambridge and running over other students' toes!

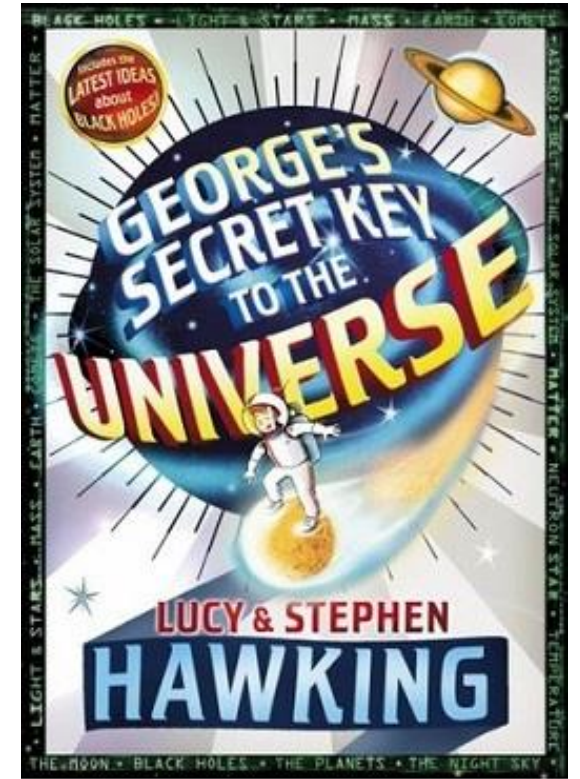
Why is Stephen Hawking a STEM Star?

Stephen is remembered as an inspiration to many people. He had an amazing mind, incredible determination and didn't let his illness stand in his way.

STEM Stars: Stephen Hawking

Stephen made many important contributions to the world of science. Stephen was always keen for everyone to be able to access his work. He wrote books that explained his theories in terms for everyone to understand, including children's books...

Like this one!



What is a galaxy?

We live on a planet called Earth that is part of our solar system. But where is our solar system? It's a small part of the **Milky Way Galaxy**. And our galaxy is just one of millions and millions.

What is a black hole?

A black hole is an area of such immense gravity that nothing – not even light, can escape from it!

Constellations



This is the Orion constellation!



'**Constellation**' is the name we give to patterns of stars in the night sky. Why don't you create our own constellations with the stars...what does your Universe look like? Maybe your favourite food or hobby?

Experiment #15: Erupting black holes

(Make sure you have an adult help you with this experiment)

Items Required:

- Baking soda (500g)
- Black food colouring
- ¼ cup of water
- Silicone mould (preferably donut shaped)
- Glitter and stars (optional)
- Vinegar
- Washing up liquid
- Pipette or syringe
- Disposable gloves
- Large deep sided tray or dish
- Large mixing bowl
- Small cup or dish

This recipe will make six black holes.

















Instructions

- In a large mixing bowl, add a box of baking soda (500g). Add a teaspoon of black food colouring.
- Mix it together with a spoon or gloved hands. A tablespoon at a time, add water and mix it together. Stop when it forms a thick paste, almost like wet sand (in total approximately ¼ a cup).
- If necessary, add more food colouring to ensure you have a nice dark colour and not grey.
- Mix in some glitter if you wish!
- Pack the mixture into the silicone donut mould, filling them to about the halfway point.
- Place the tray in the freezer until frozen solid.
- Once frozen solid – carefully pop out the black holes from the silicone mould into the large deep sided tray.
- Sprinkle washing up liquid around the deep sided tray as this will help create more bubble action when the reaction starts!
- **Ensure an adult takes control with this part of the experiment.** Fill a small cup with vinegar – fill up the pipettes with vinegar and squirt over the top of the black holes.
- Enjoy the erupting, bubbly reaction!



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Week 14 – Maths brain teaser!

				= 19
				= 18
				= 14
				= 24
= 20	= 18	= 18	= 19	

Can you find the value of each planet?

Answers Page for Week 13 Infant/Primary Pack

Mendel's pea plants slide (Page 5)

1. 19th Century
2. Dominant
3. Recessive
4. Punnett

Maths Brain Teasers Slide (Page 8)

$$\begin{array}{r} 3.5 \\ + \\ 9.5 \\ = \\ 13 \end{array} + \begin{array}{r} 4.5 \\ + \\ 3.5 \\ = \\ 8 \end{array} = 8 = 6$$

Here are the answers for Week 13
we will include the answers for Week 14
on a separate sheet as it is the last week!
Keep up the good work 😊



We hope you enjoyed the Week 14 activities.

Just to let you know, Week 14 is our last #SolveItWithSTEM week as we take a break during the Summer Holidays – we hope you have found the packs fun and educational! Keep an eye out for new packs next term!

Best wishes

The ExxonMobil Fawley #SolveItWithSTEM Team!