March 2021 – Spring Term

#SolveItWithSTEM@Home Infant and Primary Activity Pack

Friday 5th March 2021

Hey everybody and welcome to our last week!...

Hello everyone and welcome to the last week of #SolveItWithSTEM@Home activity packs. Alice and I hope you have enjoyed the past eight weeks but it is time for us to go so you can enjoy school!

Although we are saying goodbye, this doesn't mean you have to stop exploring STEM...did you know it is British Science Week this week? From 5th March right up to 14th March...they even have their own activity packs – check them out here:
https://www.britishscienceweek.org/plan-your-activities/activity-packs/

In this pack we wanted to show you all what ExxonMobil Fawley has been busy doing during the COVID-19 pandemic...as well as a fun experiment and maths questions!
With sunnier and warmer days approaching, we will soon be in Spring and hopefully exploring the outdoors as restrictions change.
Remember to visit www.fawleyonline.org.uk so all your friends and family can take part in the activity packs.
See you soon, Alice and Eddie!

Fawley and the COVID-19 pandemic: What have we been up to?

ExxonMobil has been working to help meet the needs of communities and health care professionals fighting this pandemic on the frontlines while we remain focused on meeting energy demand. At Fawley, as well as producing fuel for the emergency services such as ambulances and police cars, we produce chemical products which go into the production of many essential items. Below, Eddie and Alice have listed them!

Our Butyl Polymer is used:

To make stoppers for medical purposes – we know it's currently being used for COVID-19 vaccines

Our Higher Olefin chemicals are used in the production of:

Medical face masks

PPE-grade gloves

Cleaning products used in hospitals

Vinyl flooring which is used to convert public halls into temporary hospitals

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Experiment: Blow up a balloon with yeast
(Make sure you have an adult help you with this activity)

Supplies Needed:
- A packet of yeast (available online or a grocery store)
- A small, clean, clear plastic bottle (500ml or smaller)
- 1 teaspoon of sugar
- Warm water
- A small balloon

What to Do:
- Fill the bottle up with about one inch of warm water.
- Add all of the yeast packet and gently swirl the bottle a few seconds.
- Add the sugar and swirl it around some more.
- Blow up the balloon a few times to stretch it out then place the neck of the balloon over the neck of the bottle.
- Let the bottle sit in a warm place for about 20 minutes. If all goes well, the balloon will begin to inflate!

How does it work?

As the yeast eats the sugar, it releases a gas called **carbon dioxide**. The gas fills the bottle and then fills the balloon as more gas is created. We all know that there are "holes" in bread, but how are they made? Most breads are made using YEAST. Believe it or not, yeast is actually living microorganisms! When bread is made, the yeast becomes spread out in flour. Each bit of yeast makes tiny gas bubbles and that puts millions of bubbles (holes) in our bread before it gets baked. When the bread gets baked in the oven, the yeast dies and leaves all those bubbles (holes) in the bread.

This experiment was taken from Sciencebob.com...why not take a look!

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Maths time: Fractions

Question:

Tallulah plants 60 tulip bulbs. When they flower, she notes the following:
- Half the tulips are yellow
- One third of those which are not yellow are red
- One quarter of those which are neither red nor yellow are pink
- The remainder are white

What fraction of the tulips are white?

Question:

Yesterday, Granny had 12 cups and 10 matching saucers, but this morning she dropped a tray holding one third of the cups and half the saucers, breaking all of those on the tray.

How many of her cups are now without saucers?

Answers: w/e 26th February 2021 STEM Pack

Quiz time: Sound waves! (Slide 5)

1. Which unit is sound frequency measured in?
- ☐ Amps
- ☐ Joules
- ☐ **Hertz**
- ☐ Heinz

2. Which unit is the intensity (loudness) of a sound measured in?
- ☐ **Decibels**
- ☐ Crucibles
- ☐ Multiples
- ☐ Degrees

3. When a sound wave hits your ear, it makes the air in your ear vibrate. These vibrations cause what part of your body to vibrate?
- ☐ Your auditory nerve
- ☐ **Your ear drum**
- ☐ Your aorta
- ☐ Your retina

4. Which travels fastest, light or sound?
- ☐ **Light travels faster than sound**
- ☐ Light and sound travel at the same speed
- ☐ Sounds always travels faster than light
- ☐ Sound sometimes travels faster than light

5. Why does a guitar produce a lower pitch when you do not press any fingers against a string while plucking it?
- ☐ A shorter string produces a lower pitch
- ☐ A shorter string produces a louder sound
- ☐ A longer string produces a higher pitch
- ☐ **A longer string produces a lower pitch**

6. What can sound travel through?
- ☐ Air
- ☐ Water
- ☐ Walls
- ☐ **All of the above**

7. When something vibrates quickly, it makes high frequency waves. You hear this as what kind of sound?
- ☐ **A high pitch**
- ☐ A low pitch
- ☐ A medium pitch
- ☐ A G sharp

8. Sound waves can be reflected, transmitted or what else?
- ☐ Bounced
- ☐ Deflected
- ☐ Transcribed
- ☐ **Absorbed**

9. Which musical instruments produce lower pitches?
- ☐ Shorter or thinner instruments
- ☐ **Larger or thicker instruments**
- ☐ Brass instruments
- ☐ Woodwind instruments

10. Sound waves can be reflected off solid objects. When this happens, what do we hear?
- ☐ Music
- ☐ **An echo**
- ☐ Thunder
- ☐ No sound

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Answers: w/e 5th March 2021 STEM Pack

Maths time: Fractions (Slide 5):

Tallulah plants 60 tulip bulbs. When they flower, she notes the following:
Half the tulips are yellow
One third of those which are not yellow are red
One quarter of those which are neither red nor yellow are pink
The remainder are white
What fraction of the tulips are white?

Answer:- a quarter (¼) of the tulips are white

Half of the tulips are yellow, so..
½ of 60 = 30 (30 are yellow, 30 are unknown)

A $^1/_3$ of the remaining unknown are red.
$^1/_3$ of 30 = 10 (10 are red, leaving 20 unknown)

A ¼ of remaining unknown are pink
¼ of 20 = 5 (5 are pink)

So the remainder of the tulips must be white, which is 15.
The fraction of white tulips to the 60 original tulips is …
$^{15}/_{60}$ which is **¼**

Yesterday, Granny had 12 cups and 10 matching saucers, but this morning she dropped a tray holding one third of the cups and half the saucers, breaking all of those on the tray.

How many of her cups are now without saucers?

Answer: 3

12 cups → lose one third = 4 → So 8 left

10 saucers → lose half = 5 → So 5 left

8 – 5 = 3 therefore **3 cups do not have matching saucers**

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We hope you enjoyed the last week of activities.

Enjoy your time back at school and remember to stay safe. Who knows...you may see Eddie and Alice in the near future!

Best wishes
The ExxonMobil Fawley #SolveItWithSTEM Team!

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