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January 2021 – Spring Term

#SolveItWithSTEM@Home

Secondary Activity Pack

Friday 15th January 2021

Welcome and Happy New Year!

Welcome everyone and Happy New Year to you all. We hope you have had a lovely Christmas and New Year break. With further lockdown restrictions, the Fawley STEM team wanted to restart the weekly #SolveItWithSTEM@Home activity packs as many of you will be learning from home at the moment.

Each week we are going to provide you with fun, educational activities which will be based around a theme. This week's theme surrounds **Recycling, Re-using and Reducing Waste**.

The three Rs play a huge part in our day-to-day lives and there are so many items we can recycle or re-use – check out the Did You Knows below...

Don't forget these packs will be available online at www.fawleyonline.org.uk – please share with family and friends. We hope you enjoy and see you next week,
Alice and Eddie



Did You Know?...If everyone in the UK recycled one toothpaste box, it would save enough energy to run a fridge in over 2,000 homes for a year?

Did You Know?...If everyone in the UK recycled one aluminium deodorant aerosol, enough energy would be saved to run a TV in over 151,000 homes for a year?

Did You Know?...It takes seven days for a recycled newspaper to come back as a newspaper again? More information on recycling can be found at www.recyclenow.com

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Activity: Do you know your recycling symbols?

Match up the sentences listed below with the correct symbol. Answers will be provided in next week's pack.

- This symbol indicates that the item is made from recyclable aluminium.
- In addition to the seedling symbol for industrial composting, you may see this one which means that it is suitable to be home composted.
- This indicates that an object is capable of being recycled, not that the object has been recycled or will be accepted in all recycling collection systems.
- This symbol asks that you recycle the glass container.
- This symbol from Keep Britain Tidy asks you not to litter.
- This symbol explains that you should not place the electrical item in the general waste. Electrical items can be recycled through a number of channels.
- This identifies the type of plastic resin used to make the item by providing a 'Resin Identification Code'. It is represented with a 'chasing arrows' symbol surrounding a number between 1 and 7 that defines the resin used.
- Products certified to be industrially compostable according to the European standard EN 13432/14955 may bear the 'seedling' logo.



More information on recycling can be found at www.recyclenow.com – remember, don't cheat!...



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Experiment: Making your own newspaper seed pots

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

Items Required:

- Newspaper
- Clean, empty glass jar

How to make it:

1. Take your sheet of newspaper and fold it almost in half lengthways, leaving a strip about 3cm in width at the top. Fold that strip down, like folding down the top of an envelope.
2. Place your jar at the bottom of your newspaper with the hole facing up. Make sure the jar is hanging over the paper a bit at the bottom as this will help you to remove it later.
3. Roll your paper nice and snugly around the jar.
4. When you have finished rolling, tuck the paper into the hole at the top of your jar.
5. Flip your jar upside down and press down onto it to create a nice seal for the bottom of your pot. Remove the jar and voilà!
6. Make as many pots as you need and fill them up! Put your pots into a tray before adding compost. The newspaper can get a bit soggy so this will make them easier to move.



These are cheap to make and much better for the environment than plastic!

Why not pass this idea onto a family member?
Or you could create plant pots for a friend?
(subject to COVID restrictions)

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This great idea was taken from the following website:
<https://schoolgardening.rhs.org.uk/resources/sequence-card/how-to-make-newspaper-pots>

Maths: Plastic bag questions

A five pence charge came into effect on single use carrier bags in England on 5 October 2015. The term “single use carrier bag” generally refers to the conventional, lightweight, plastic carrier bags (made from polyethylene) that used to be offered for free to customers in almost all UK supermarkets and other shops. The Department for Environment, Food and Rural Affairs (Defra) has emphasised that the charge is not a tax and (with the exception of any VAT included in the charge) the money from the charge does not go to the government. The charge in England, which is paid by customers to retailers, follows the introduction of similar levies in other parts of the UK. Wales, Northern Ireland and Scotland introduced a 5p levy on single use carrier bags in 2011, 2013 and 2014 respectively. The purpose of each single use carrier bag charge is to reduce the number of bags given out, increase their re-use and reduce litter. **Answer the questions provided below – answers will be provided in next week’s pack.**

1. 'This time last year (2017), Defra's carrier bag statistics revealed the early signs of success for the carrier bag charge, which was introduced in England in October 2015. Single-use carrier bag usage had dropped from seven billion to just over half a billion within six months.' What percentage reduction is this?

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2. 'According to Defra's data, large retailers in England sold 2.1 billion single-use plastic carrier bags during the year from 7 April 2016 to 6 April 2017.' By using the Excel file from the following ONS page - <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/families/adhocs/005374/totalnumberofhouseholdsbyregionandcountryoftheuk1996to2015> Can you find the approximate number of households in England in 2017? Can you then work out the number of bags used per household in that period?

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3. An alternative way to look at this is number of bags used per person. Comparing 'bags per person' or 'bags per household', which one reflects reality the best? Which makes the most sense to use?

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4. Some of the reduction in single-use plastic carrier bags is achieved by people using paper bags instead. What are the pros and cons of paper bags vs single-use plastic bags?

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We hope you enjoyed this week's activities.

Another pack will be on its way to you next week...

Best wishes

The ExxonMobil Fawley #SolveItWithSTEM Team!

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