Activities for young people between 11 – 14 years old

Online links

Youtube channels:
Brainiacs - https://www.youtube.com/channel/UCOyWqUnLknacYeSl4CvG6FA
Asap Science - https://www.youtube.com/user/AsapSCIENCE
Animalogic - https://www.youtube.com/channel/UCwg6_F2hDHYrqbNSGjmar4w
It's ok to be smart - https://www.youtube.com/user/itsokaytobesmart
The King of Random - https://www.youtube.com/user/01032010814
National Geographic -
https://www.youtube.com/playlist?list=PLydZ2Hrp_gPSK4VSpptBsb8hsvFABPO6b
PE with Joe Wicks - https://www.youtube.com/user/thebodycoach1

Websites:
topmarks.co.uk –
website full of educational resources and activities for Years 1 through 12
poetryzone.co.uk –
read, write an analyse poetry

Apps:
duolingo –
learn a new language or practice your skills in a language you are already learning.

Simple Science Experiments

Here are some quick and easy science experiments you can try at home. The scientific explanations are given at the end of this document.

1. What cleans an old copper coin?

What You'll Need

- 3 dull copper coins
- 2 cups
- Vinegar
- Washing up liquid
- Paper towel/ tea towel

Instructions:

1. Predict which liquid will make a copper coin shine
2. Set one coin aside. Put each of the other two other coins into its own paper cup.
3. In one cup, pour enough vinegar to cover the coin.
4. In the other cup, pour enough washing up liquid to cover the coin.
5. Wait at least ten minutes.
6. Remove the coins, rinse them in water and rub them with a paper towel.
7. Compare all three coins.

Extend the fun

Experiment with other liquids to see what else will clean the coins e.g. Coca Cola, lemon juice etc. You'll need to use a different coin for each liquid.

Experiment Notes:

2. Lava in a cup

What You'll Need

- A clear drinking glass
- 1/4 cup vegetable oil
- 1 teaspoon salt
- Water
- Food colouring (optional)

Instructions:

1. Fill the glass with water until it is about 3/4 full
2. Add about 5 drops of food coloring, if using
3. Slowly pour the vegetable oil into the glass. The oil will mix at the beginning and then float to the top.
4. Sprinkle the salt on top of the oil. Watch blobs of "lava" move up and down in your glass. You can add another teaspoon of salt to keep the effect going.

Extend the fun

There are a few ways that you could change the experiment to see if you have different results:

- How long will the effect go on if you keep adding salt?
- Will other solids (sand, sugar. etc.) work the same as salt?
- Does the height or shape of the glass affect the experiment?

Experiment Notes:

3. Tornado in a bottle

What You'll Need:

- Water
- A clear plastic bottle with a lid (that won't leak)
- Glitter (optional)
- Washing up liquid

Instructions:

1. Fill the plastic bottle with water until it reaches around three quarters full
2. Add a few drops of dish washing liquid
3. Sprinkle in a few pinches of glitter, if using (this will make your tornado easier to see)
4. Put the lid on tightly.
5. Turn the bottle upside down and hold it by the neck. Quickly spin the bottle in a circular motion for a few seconds, stop and look inside to see if you can see a mini tornado forming in the water. You might need to try it a few times before you get it working properly.

Extend the fun

When the cap is released the tornado effect will make the water empty out of the bottle quicker than usual. Once you have perfected creating a tornado in a bottle, you could experiment with how quickly you can get all of the water out of the bottle using the tornado. You won’t need the washing up liquid and glitter to do this but will need someone to time each attempt. Make sure you do this over a sink or bucket!

Experiment notes:

4. Eggshell Geode Crystals

Warning:
This experiment is more time consuming than the others and involves using boiling water.

What You'll Need:

- clean eggshells
- water
- At least one of the following:
  table salt, sugar, baking powder, Epsom salts or sea salt
- small heat proof containers (coffee cups work well)
- spoons
- food coloring
- egg cartons and wax paper or mini-muffin cases

Instructions:

1. Crack the eggs as close to the narrow end as possible and empty the contents.
2. Clean the eggshells using hot water. The hot water cooks the lining and allows you to pull the skin (egg membrane) out of the inside of the egg using your fingers. Make sure to remove all the egg membrane, if any membrane stays inside the shell it is possible that your eggshell will grow mold and your crystals will turn black.
3. Use an egg carton lined with waxed paper or mini-muffin cases to hold the eggs upright.
4. Use a kettle or saucepan to heat the water to boiling
5. Pour half a cup to a cup of water into your heatproof container. If you poured half a cup of water into the container, add about a ¼ cup of solid to the water. Stir it until it dissolves. Likewise if you used a cup of water, add about ½ a cup of solid to the water. When the initial amount of solid is dissolved continue adding small amounts of the solid until the water is super-saturated. Super-saturated simply means the water has absorbed all it is able to absorb and any solid you add will not dissolve.
6. Add food colouring.
7. Carefully pour your solution into the eggshell, filling it as full as possible without over-flowing it or causing it to tip.
8. Find a safe place to put your shells while the water evaporates. Crystals will form inside the eggshells as the water evaporates.

Extend the fun.
You could try using different solids to see if the end product is different.

Experiment Notes:

Why does it work?

1. **What cleans an old copper coin?**
   The vinegar made its penny shiny. Pennies become dull over time as copper on the surface reacts with oxygen from the air. The two elements combine to form dark chemicals called copper oxides. The acetic acid in vinegar dissolves these chemicals and leaves the copper surface of the penny looking shiny. Soap can clean lots of things, but it can't dissolve copper oxides.

2. **Lava in a glass**
   The oil floats on top of the water because it is lighter than the water. Since the salt is heavier than oil, it sinks down into the water and takes some oil with it, but then the salt dissolves and the oil floats back up to the top.

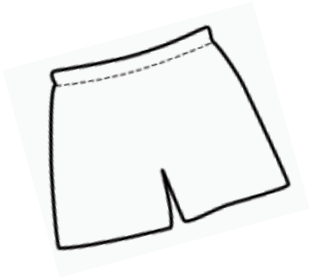
3. **Tornado in a bottle**
   Spinning the bottle in a circular motion creates a water vortex that looks like a mini tornado. The water is rapidly spinning around the center of the vortex due to centripetal force (an inward force directing an object or fluid such as water towards the center of its circular path). Vortexes found in nature include tornadoes, hurricanes and waterspouts (a tornado that forms over water).

4. **Eggshell Geode Crystals**
   Dissolving the crystals in hot water created what is called a "super-saturated solution." This basically means that the salts took advantage of the energy of the hot water to help them dissolve until there was no more space between molecules in the solution. As the solution cooled, the water lost its energy and the crystals are forced from the solution to become a solid again. Since this happens slowly along with the evaporation, the crystals have time to grow larger than they were when the experiment started. Natural geodes in rock are formed in much the same way as mineralized water seeps into air pockets in rock.

5. Homemade tie-dye shirts

Got some boring, plain clothes at home?
Fancy jazzing them up a bit?

Try this homemade tie-dyeing trick to give your clothes some new life!



WHAT YOU WILL NEED!

1. An old item of clothing like a t-shirt or vest (cotton works best)
2. Bucket of water
3. Food colouring
4. Vinegar
5. Old containers or bottles
4. Elastic bands (or bobbles)

WHAT YOU NEED TO DO !!

1. Gather your items

2. Soak the t-shirts in the bucket full of water. (Empty the bucket after you've finished)

3. Pull the t-shirts out and twist and tie bobbles or elastic bands around the shirt in random places (get creative!!)

4. Take your old containers or bottles and half fill with water. Pour in half a cup of vinegar and drops of food colouring and mix! (You will have to use a different container for every colour you want!)

5. Tip/Dip/Pour each colour onto sections of the t-shirt and then leave in the empty bucket overnight! (The longer you leave the t-shirt, the darker the colours will be)

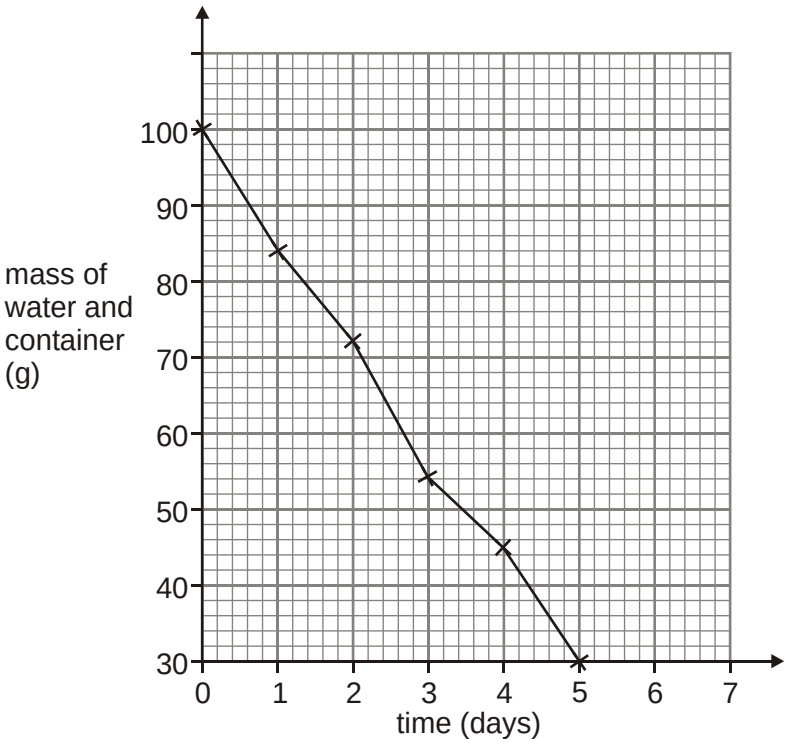
6. After you're happy with the colours of the t-shirt, pull the elastic bands or bobbles off and wash the t-shirt in the washing machine on cold!

7. Once it's washed and dried, you can wear your amazing new t-shirt!!

6. Numeracy

Graphs show data. They can tell us information and can also be used to find out information.

Graph 1.



What does this graph tell you?

_____

_____

_____

_____

Activity for you!

What you will need: An old plastic container, pen, water

Step 1: Fill an old plastic container (jug or a cup) with water. Draw a line at the top of the waterline.

Step 2: Place in a cool, dry, safe place (maybe a windowsill) and wait 24 hours.

Step 3: After 24 hours, see how much water has evaporated from the container and draw another line!

How long do you think will it take for all the water to evaporate?

7. Art is Hard

Painting's really difficult,
With pencils I'm not fussed.
Charcoal just gets everywhere,
And crayons are a bust.

Pastels are too tricky,
And pens, they lead to splodge.
Gluing's just too sticky,
Papier-mâché I just dodge.

Art is really taxing,
This creating tires me out.
And I'm really far too messy,
Of that I have no doubt.

So there's paint upon the ceiling,
And pencil on the chair.
There's pastel and chalk dust just everywhere,
Mum's shrieking with despair.

Our dog's stuck to his basket,
Crayon scrawled across the door.
I think it will be quite a while,
'till I create once more!

- Read the poem.

- Identify all the different art materials in the poem

- Draw a picture of what you think the room looks like by using lines from the poem.

Use this box to draw your image

8.Leaflet or Poster

Advertise what things you can do and cannot do during the Coronavirus Pandemic

What you will need …

1. Pens/pencils
2. Paper

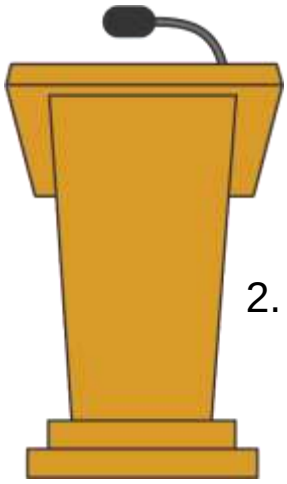
Make notes on things you can and cannot do before creating your poster/leaflet!

Notes on what to do at home:

Notes on what you cannot do:

9. Time to Debate!!

Boris Johnson has released the following 2 statements:



1. TikTok is a terrible app for young people. It is distracting them from doing other things like school work and exercising.

2. Youtube and Netflix have ruined the film industry. If people want to watch films, they should go to the cinema and buy them on DVD or wait until they're shown on normal TV channels.

Task:

Pick one of the statements and write a response to Boris Johnson.

Include:

- If you agree or disagree with the statements and why?
- What advantages/ disadvantages are there to these things?
- Do you yourself use them and why?
- Is there an alternative people could use?
- Any other comments you want to make.

10. Write a blog on a topic of your choice!

Use different writing techniques to create a blog.

Pick a topic:

- music you're listening to
- videos you're watching online
- films/series you're watching
- books/magazines you've read
- Video games you've played
- Makeup/hair styles you've tried

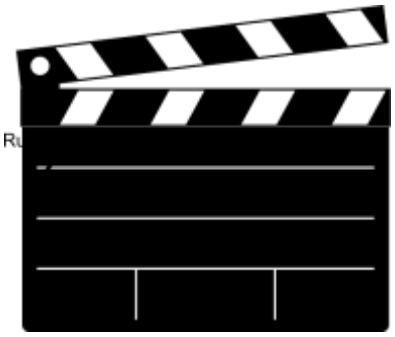
or anything else you want and write about it!!

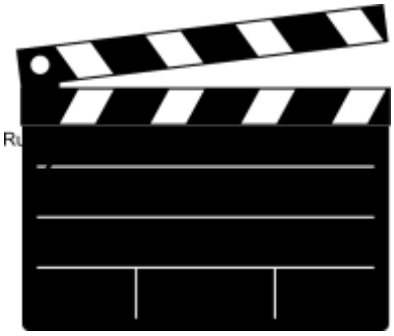
You can make it as long or as short as you want, but make it fun!

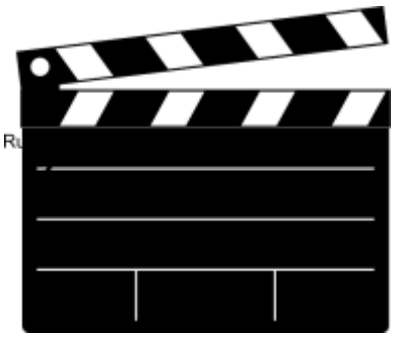
Include fun facts, descriptions, opinions, good points, bad points etc !

<u>Extend the fun</u>

Once you've written your blog, try reading your blog in front of a mirror or record yourself and turn it into a vlog!







11. Chwedl Branwen

Os nad ydych yn gyfarwydd â chwedl Branwen, gallech gwblhau'r gweithgaredd gan feddwl am chwedl neu stori arall.

Bydd angen:

- Play Doh neu glai
- Hambwrdd neu bapur
- Camera e.e. ar ffôn symudol

Cyfarwyddiadau:

1. Defnyddiwch y Play Doh/clai i greu'r cymeriadau yn chwedl Branwen. Gallech hefyd greu pethau eraill sy'n bwysig yn y stori e.e. llongau, mynydd, pair hud
2. Cymerwch luniau llonydd ar gyfer pob rhan o'r stori, un ar y tro, gan gymryd llun o bob un.
3. Gallech ychwanegu testun i'r lluniau er mwyn esbonio beth sy'n digwydd ym mhob un.

Parhau â'r hwyl:

Gallech wneud yr un peth am chwedlau neu straeon eraill sy'n gyfarwydd i chi.

12.Cwricwlwm i Gymru

Cyfarwyddiadau:
Ar hyn o bryd mae Llywodraeth Cymru yn gweithio i newid y Cwricwlwm yng Nghymru.

Cynlluniwch ganllaw (*guidance*) i'r Llywodraeth ar gyfer rhywbeth rydych chi'n meddwl dylai fod yn rhan o'r Cwricwlwm Newydd. Gallech ddefnyddio unrhyw gyfrwng er mwyn cyflwyno'ch syniad e.e. Poster, llyfryn gwybodaeth, fideo ayyb.

Mae angen i chi:

- gyflwyno'ch syniad, unrhyw beth sy'n bwysig neu o ddiddordeb i chi ac rydych chi'n meddwl dylai fod yn rhan o'r cwricwlwm. e.e. gwau, pêl fasged, blogio, cymorth cyntaf, hanes y Rhufeiniaid……
- greu canllaw deniadol sy'n rhoi manylion am eich syniad gan gynnwys cyfarwyddiadau os oed angen
- esbonio pam dylai'r syniad yma fod yn rhan o'r cwricwlwm newydd.

Parhau â'r hwyl:
Beth am ysgrifennu llythyr at y Llywodraeth yn cyflwyno'ch syniad?