

Year 7 Science: Home Learning Week 6

Hello Year 7, more from the BBC Bitesize lessons this week and an optional practical to make bath bombs. As always, follow the instructions carefully, get permission from an adult before doing anything and clean up after yourself when you're finished!

Stay at home & stay safe

Miss Johnston ☺

Task	Description
1	<p>Watch the BBC Bitesize lessons on Tuesday (biology), Wednesday (chemistry) and Thursday (physics). Here's a link to the daily lessons page: https://www.bbc.co.uk/bitesize/tags/zf9yy9q/year-7-lessons/1</p> <p>If you have trouble watching online, you can access the Bitesize lessons via the red button on your TV remote. Just switch the TV to BBC1, press the red button and the Bitesize options should come up... It can take a minute or two to load so be patient!</p>
2	<p>Biology</p> <p>a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on reproductive organs: https://www.bbc.co.uk/bitesize/guides/z9fgr82/revision/1</p> <p>b) Go back and actually do a), stop giggling!</p>
3	<p>Chemistry</p> <p>a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on acids, alkalis and bases: https://www.bbc.co.uk/bitesize/guides/zyn3b9q/revision/1</p> <p>b) Give a definition and an example for each of the following:</p> <ol style="list-style-type: none">AcidAlkaliBase <p>c) The 'H' in pH stands for hydrogen. pH is a measure of how many hydrogen ions (H^+) there are in a substance, compared to pure water, which has a pH of 7 and 1 H^+.</p> <p>Look at the table of common substances on this page: https://bit.ly/2WuppFr</p> <p>Can you write a sentence or two to explain the pattern (correlation) linking pH and H^+?</p>
4	<p>Physics</p> <p>a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on days, months, seasons and years: https://www.bbc.co.uk/bitesize/topics/z8c9q6f/articles/zmhw7p3</p> <p>b) Answer the following questions:</p> <ol style="list-style-type: none">If it is summer in Europe, what season is it in South Africa?How does the Earth's axis cause different seasons?Why do the polar regions experience periods 24 hours of daylight during the summer and 24 hours of darkness during the winter? <p>c) Create a leaflet, PowerPoint presentation or (if possible) video clip, aimed at a pupil in year 5, explaining why we have:</p> <ol style="list-style-type: none">Day and nightMonthsSeasonsYears

Practical details

Making Bath Bombs

Why do this?

Making bath bombs is a great activity for observing a neutralisation reaction between citric acid and bicarbonate of soda... and they're also a lovely gift for friends and family! Experiment with colours, add flowers from your garden and use different shapes. Once you have the main ingredients, it's really easy to adapt this recipe to what you already have at home.

Safety

- Do not try this activity if you have sensitive skin or are allergic to bath bombs or any of the ingredients.
- These ingredients are safe to use in the bath, but it's important to note that bath bombs are inedible.
- You must wash your hands with soap and water after the activity
- As with all science activities, **do not** eat any of the substances that you are using, even if they are foods!

Equipment & materials

- 100g bicarbonate of soda
- 50g citric acid
- 25g cornflour
- 25g Epsom salt (optional)
- 2 tbsp oil – such as sunflower, coconut or olive oil
- ¼ tsp essential oil, such as orange, lavender or chamomile (optional but this is what makes your bath bomb smell nice)
- a few drops of liquid food colouring
- orange peel, lavender or rose petals, to decorate (optional)
- mixing bowl
- whisk
- flexible moulds – I recommend using egg boxes or yoghurt pots for this. Do not use ice cube trays or silicone baking moulds because they can't be used for food again afterwards.

Method

1. Put the bicarbonate of soda, citric acid, cornflour and Epsom salt into a bowl. Whisk until all the ingredients are combined.
2. Pour the base oil, essential oil and food colouring in a small bowl. Mix together well, combining the oil with the colouring as much as possible.
3. Very slowly add the oil mixture into the dry ingredients a little at a time, whisking between each addition. When all the oil is added, add a few tiny drops of water and whisk again (it will fizz when you add the water, so mix it in quickly). You're looking for the mixture to slightly clump together when pressed in your hand and keep its shape – it shouldn't be too wet. Once you've added the liquid to the mixture, you need to work quickly to mix everything together and push it into the mould as soon as you can.
4. If you're adding peel or flower petals to decorate, drop them into the bottom of your chosen mould. Pack your mixture tightly on top, pressing down and smoothing out the top with a teaspoon.
5. Leave your bath bombs in the mould to dry for 2-4 hrs, uncovered in a cool, dry place (away from taps and humidity). They will take longer to set in humid weather. When they're dry, carefully remove them from the moulds. They're now ready to drop into the bath – watch it fizz away!

Expected observations and results

Citric acid is often used in homemade cordials and winemaking – you'll find it as an ingredient in shop-bought bath bombs. The reaction with the bicarbonate of soda is what makes your bath bomb fizzy. You can buy citric acid online, shops that sell brewing equipment (e.g Wilko) and some larger pharmacies.

Possible further investigations

If you've got more than one colour, why not make a rainbow bath bomb? Layer up the different colours and they will blend together beautifully.

Background notes

- Be sure to use liquid food colouring, not gels. Gels will clump together when you add them to the bicarbonate and it's hard to mix them in.