Year 8 Science: Home Learning Week 7

Hello Year 8, more from the BBC Bitesize lessons this week and an optional practical to make a compass. 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	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 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!
2	**Biology** a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on the menstrual cycle: https://www.bbc.co.uk/bitesize/topics/zpffr82/articles/z6s26yc b) Go back and do a). Stop giggling. c) Yes, even the boys. d) Yes, that does mean you.
3	**Chemistry** a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on diffusion: https://www.bbc.co.uk/bitesize/topics/z9r4jxs/articles/znqbcj6 b) Draw particle models of a solid, a liquid and a gas c) Answer the following questions: i. How does diffusion take place? It might help to think about the smell of burned toast spreading through a house. ii. How does temperature affect diffusion? Try to relate this to the movement of particles. d) Draw a cartoon strip to show the diffusion of orange squash into a glass of water. Can you write a short explanation for each stage in your cartoon strip?
4	**Physics** a) Visit BBC Bitesize, revise your knowledge and complete the quizzes on magnetic fields and compasses: https://www.bbc.co.uk/bitesize/guides/zyx38mn/revision/1 Next, watch this video: https://www.youtube.com/watch?v=Aq8s2SF17zY b) Answer the following questions: i. What does "attract" mean? Give an example of what this means in terms of magnets. ii. What does "repel" mean? Give an example of what this means in terms of magnets. iii. What type of force is magnetism? iv. Scrap yard owners use huge electromagnets to move cars around. Some modern cars are made of Aluminium. What problems will this cause for scrap yard owners? Explain why. c) How does a compass work? Can you draw diagrams to explain how a compass works in relation to Earth's magnetic field?

Practical details

Making a Compass

About this activity

Every magnet has a north pole and a south pole, just like the Earth. If two magnets are brought together, the north pole of one will attract the south pole of the other. This is why compasses work on the Earth. The Earth's magnetic field is strong enough to make the north pole of a very light compass needle align with the magnetic south pole of the planet. If you're confused (don't compasses point north???), you may not realize that the Earth's geographic North Pole is the opposite of its magnetic north pole! In other words, the planet's geographic North Pole is its magnetic south pole, and vice versa!

In this activity, you will make a magnet and see it respond to the bigger magnet that is our planet. We show you two ways to do this. Either way, it's important that there be no friction on the needle, so that it can respond to the slight tug of the Earth magnet.

Equipment & materials:

- A bowl of water
- A paper clip or sewing needle
- A magnet (any type will work for the floating compass)
- A bar magnet
- String
- A drawing pin

Method

To make a floating compass:

1. Magnetize your paper clip or sewing needle by placing one end against the end of your magnet.
2. Float the magnetized needle very carefully on the surface of the water. The end that you magnetized will point north or south, depending on how you magnetized it.
3. If you are having a hard time doing this, try placing the needle inside of a drinking straw, on a piece of cork, or on anything that will help it float.

To make a bar magnet compass:

1. Use a drawing pin to hang a length of string from the top of a doorway
2. Tie a bar magnet to the string so it is evenly balanced.
3. Let go of the magnet. As it turns, it will settle and point north-south.

Did you know?

- A compass responds to the Earth's magnetic field. Scientists believe that field is generated by the churning of very hot liquid iron at the planet's core.
- The Earth's magnetic field does not run exactly from the North Pole to the South Pole, but is a little skewed. That's called the declination, and its effects, which vary depending on where you are on the planet, can be seen on compasses.