

Year 7 Science: Home Learning Week 12

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

Take care & 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												
2	<p>Biology</p> <p>a) Visit BBC Bitesize and read the information on the seven life processes (page 1): https://www.bbc.co.uk/bitesize/guides/z9hyvcw/revision/1</p> <p>b) Watch this Amoeba Sisters video: https://www.youtube.com/watch?v=cQPvXrVOGNA&v=en</p> <p>c) What does the acronym MRS GREN stand for?</p> <p>d) It could be said that a car meets some of the MRS GREN criteria. Write a short paragraph explaining why people might say this and how we can prove that they aren't alive. Use the vocabulary bank to help your explanation and award yourself points for each term that you use:</p> <table><tr><td><u>1 point vocabulary</u></td><td><u>2 points vocabulary</u></td><td><u>3 points vocabulary</u></td></tr><tr><td>Cells</td><td>Nutrition</td><td>Sensitivity</td></tr><tr><td>Reproduce</td><td>Growth</td><td>Respiration</td></tr><tr><td>Move / movement</td><td>Compared to...</td><td>Excrete</td></tr></table>	<u>1 point vocabulary</u>	<u>2 points vocabulary</u>	<u>3 points vocabulary</u>	Cells	Nutrition	Sensitivity	Reproduce	Growth	Respiration	Move / movement	Compared to...	Excrete
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3	<p>Chemistry</p> <p>a) Visit BBC Bitesize and read the information on the properties of gases (page 3): https://www.bbc.co.uk/bitesize/guides/z2wmxnb/revision/3</p> <p>b) It might help to watch this video on states of matter too (cheesy dance alert!): https://www.youtube.com/watch?v=3zbg1CFBEjY</p> <p>c) Watch this video on diffusion in gases: https://www.youtube.com/watch?v=KRLNDTmBFZY</p> <p>d) Imagine if a smelly PE sock was left in the changing rooms over the weekend. Use your knowledge about gases to explain why the smell stays in the room if the door is closed but then makes the whole corridor smell bad once the door is opened.</p>												
4	<p>Physics</p> <p>a) Visit BBC Bitesize and read the information about the solar system (page 2): https://www.bbc.co.uk/bitesize/guides/z8wx6sg/revision/2 Next, watch this video from the Royal Observatory, Greenwich about how the solar system was formed: https://vimeo.com/259687037</p> <p>b) Can you name the planets in our solar system? Think back to year 5 and have go! Clue: My Very Easy Method Just Speeds Up Naming (Planets).</p> <p>c) Use the word bank to complete the sentences. You might need to use some words more than once:</p> <p>Our solar system has _____ planets, and thousands of _____, which are small lumps of rock found between _____ and Jupiter. All the planets and asteroids _____ around the Sun.</p> <p>The Sun is a _____. It produces its own _____ and _____. Planets do not make their own _____ or _____. We can only see other planets when they _____ light from the sun.</p> <p>asteroids heat light mars eight orbit reflect star</p>												

Practical details:

Straw Rockets

Why do this?

Do you want to launch a rocket and investigate flight?

Safety

- Ensure the bottle and rocket are pointed away from your face and other people when shooting.

Equipment & materials

- 1 clean, dry, empty 2L fizzy drink bottle
- 1 narrow straw
- 1 wider straw (e.g. milkshake straw)
- 1 pencil
- 1 ball of blu-tack, plasticine or play dough
- Sticky tape
- Scissors
- Paper to make wings / fins

Method

1. Put some plasticine into the opening of the bottle and mould it around the edges to make a good seal.
2. Using a sharp pencil, push it through the plasticine and remove it to leave a hole through the plasticine into the bottle.
3. Carefully push the narrow straw into the hole and mould the plasticine around the straw to ensure a good air tight seal. Be careful not to block the end of the straw with plasticine.
4. Take the wider straw and pinch one end together. Stick a small amount of tape over the pinched end to make it airtight.
5. Check for leaks by blowing into the wider straw. Re-tape the end if there is a leak.
6. Slide the wider straw over the narrow straw sticking out of the bottle.
7. Point the bottle / rocket away from people and give the bottle a hard squeeze.

Expected observations and results

Pressure from the bottle as the air inside is compressed causes the rocket to fly through the air.

Background notes

- 2L lemonade bottles work well. Lids are not required.
- If air is escaping from the top of the bottle, an extra piece of tape wrapped around the neck could help improve the seal.
- Use the least amount of tape possible to seal the wider straw, otherwise it may nose dive.
- Use enough play dough to totally cover the opening of the bottle and the edges.
- An alternative to a wider straw is to make a tube out of a piece of paper. Wrap the paper around a pencil (bigger than the narrow straw) and tape along the seam.

Questions and possible further investigations

- Does changing the launch angle affect the distance travelled?
- Does changing the amount of force applied to the bottle affect the distance travelled?
- Does the length of the wider straw affect how far it will fly?
- Does adding fins or wings to the wider straw make it fly further?