

CHEMISTRY WITH DR JULIE PELLER

TALKING POINTS

KNOWLEDGE

1. What are microplastics and where do they come from?
2. What are synthetic microfibres and where do they come from?

COMPREHENSION

3. How do microplastics end up in the ocean?
4. Can you explain how microplastics can be dangerous to aquatic species?

ANALYSIS

5. Julie's results showed no significant differences between the two types of locations analysed: one above a wastewater treatment plant (not affected by the discharge) and one downstream from the WWTP discharge. Did you find these results surprising? Why or why not?

EVALUATION

6. Can you suggest a few practical ways that everybody can help to reduce plastic pollution?
7. To what extent do you think a ban on single-use plastic items, such as the plastic straw ban, will help reduce plastic pollution?

CREATIVITY

8. What other legislation to control pollution would you suggest?

MORE RESOURCES

GENERAL CHEMISTRY

There is so much to learn about chemistry. Here are two useful websites for you to find out more:

- Royal Society of chemistry: <https://www.rsc.org/>
- ACS Chemistry for life: <https://www.acs.org/content/acs/en.html>

PLASTIC POLLUTION

Find out about brilliant organisations raising awareness of this global issue:

- Kids Against Plastic: <https://www.kidsagainstplastic.co.uk/>
- Surfers Against Sewage: <https://www.sas.org.uk/our-work/plastic-pollution/plastic-pollution-facts-figures/>
- Plastic Pollution Coalition: www.plasticpollutioncoalition.org

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

ACTIVITY 1 - SPOTTING MICROPLASTICS

In a similar way to what Julie and her team did, collect samples from a local beach or river. Sadly, most beaches around the world are already contaminated, so there is a high probability that you are going to find at least some microplastics.

- Analyse the sample with the naked eye and then using magnifying lenses.
- Make a note of what you can find.
- Think about what and where these specific fragments may have originated from.
- Discuss and reflect on the hazards of microplastics and the importance of preventing water pollution.

ACTIVITY 2 – PLASTIC-FREE DAY

Can you challenge yourself to be 100% plastic-free for one day? You can't buy anything wrapped in plastic – that means no packets of crisps, no chocolate bars and no bottles of fizzy drinks!

- What items would you normally use?
- How difficult was it to avoid these items? (Or how difficult do you think it's going to be?)
- Is there plastic-free shopping you will continue doing?
- Discuss how you and your family/school/community can reduce single-use plastic.

