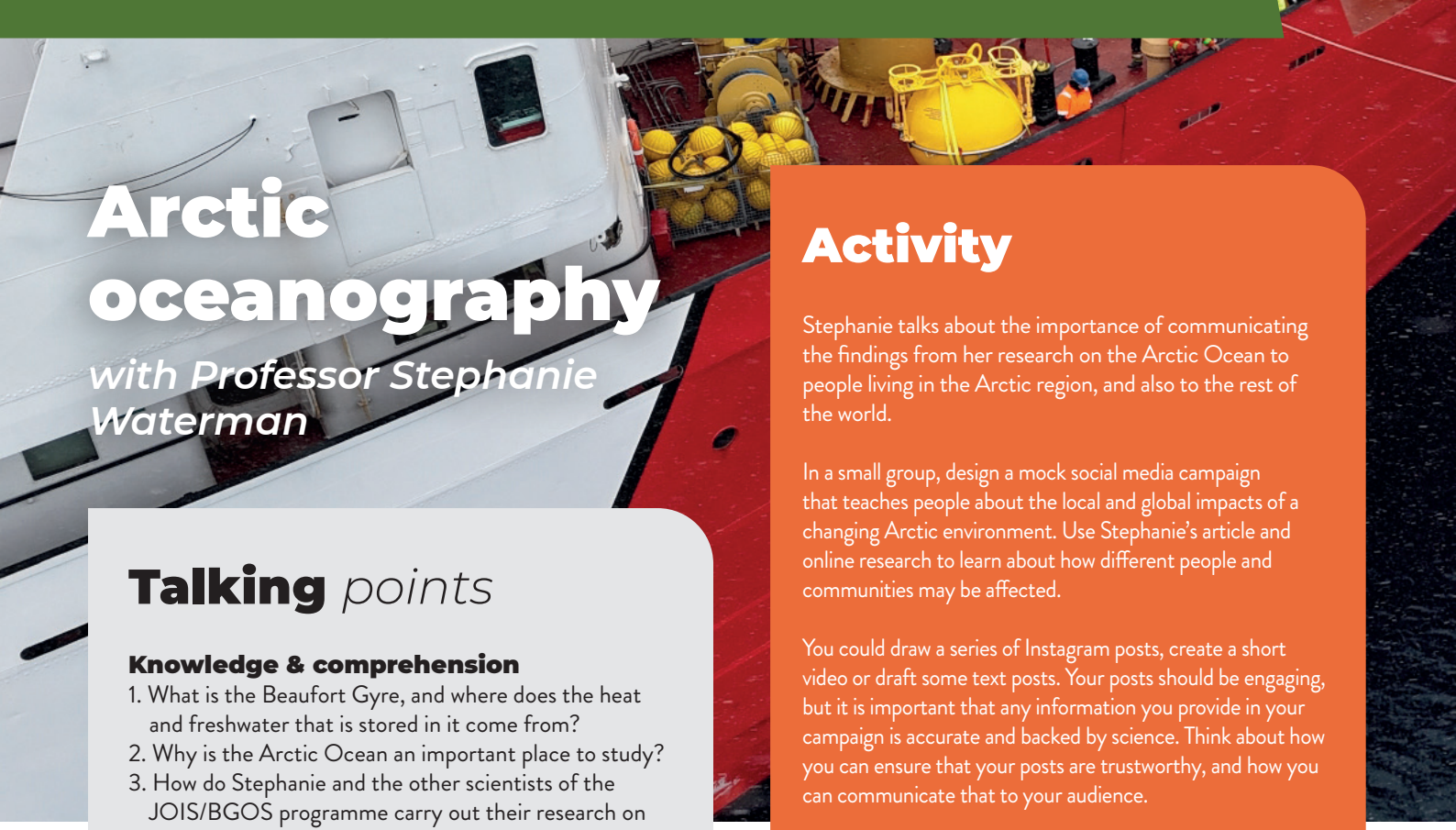

Arctic oceanography

with Professor Stephanie Waterman

Talking *points*

Knowledge & comprehension

1. What is the Beaufort Gyre, and where does the heat and freshwater that is stored in it come from?
2. Why is the Arctic Ocean an important place to study?
3. How do Stephanie and the other scientists of the JOIS/BGOS programme carry out their research on the changing Beaufort Gyre? What features of the ocean do they study, and what data do they collect?
4. How do ocean gliders work, and why are they particularly useful for studying ocean turbulence?

Application

5. There are a wide variety of roles and careers in Arctic oceanography. Which do you think best match your skills and interests?
6. What questions could you ask Stephanie to learn more about her research methods?

Analysis

7. Why is it important for scientists to be able to travel to the Beaufort Gyre to conduct their research?
8. What are the challenges of studying the oceans, and the Arctic Ocean in particular?

Evaluation

9. To what extent do you think you would enjoy working on a research vessel?
10. Why it is important to do sustained, long-term research in the Arctic Ocean? Why is it relevant to understanding climate change on a global scale?

Activity

Stephanie talks about the importance of communicating the findings from her research on the Arctic Ocean to people living in the Arctic region, and also to the rest of the world.

In a small group, design a mock social media campaign that teaches people about the local and global impacts of a changing Arctic environment. Use Stephanie's article and online research to learn about how different people and communities may be affected.

You could draw a series of Instagram posts, create a short video or draft some text posts. Your posts should be engaging, but it is important that any information you provide in your campaign is accurate and backed by science. Think about how you can ensure that your posts are trustworthy, and how you can communicate that to your audience.

Think about the information that you want to include in your campaign. What type of information will capture people's attention? How could providing information about Stephanie's research techniques and equipment improve the credibility of your posts? What age range are you targeting with your posts, and how will this affect the information that you use?

Once you have finished, share your mock social media campaign with your classmates, your teacher and your family, and reflect on the following:

- What did your audience learn from your campaign? Did they ask you any questions? How could you address these questions in future campaigns?
- How did your audience react to your campaign? Were they shocked, interested, sad, inspired? Was this reaction what you expected?
- To what extent did your audience trust the information you gave them, and why? How could you take more care to ensure your information is accurate and trustworthy?
- How did different people react to your campaign? How could you adapt your campaign to target a specific audience?

More *resources*

- The Meet the Ocean podcast (**www.meettheocean.org/podcast.html**) and the official Ocean Podcast of the National Oceanic and Atmospheric Administration (**oceanservice.noaa.gov/podcast**) both share stories from scientists and explorers, covering topics including ocean currents, coral reefs, navigation and underwater wildlife.
- These TED talks cover different aspects of conducting research in the Arctic, exploring the skeletons of marine creatures (**www.youtube.com/watch?v=yoZjTKAKsXM**) and the impact of sea ice loss (**www.youtube.com/watch?v=ofaoiHYKtlc**)
- This Futurum article explores how a circulation system in the Southern Ocean helps to protect the planet from climate change: **futurumcareers.com/how-does-the-southern-ocean-help-protect-our-planet**