

Research on the *EDGE*

POLAR REGIONS

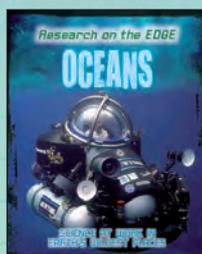
Teachers' Notes

Synopsis

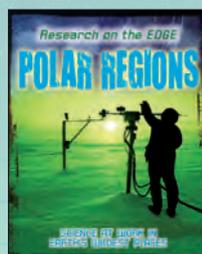
This book explains what scientific research is taking place in polar regions and how the results are changing the world. It looks at animals that live in polar places, why and how they are under threat, how scientists carry out their experiments, the equipment they use, the laboratories they work in while stationed 'on the edge', and how they share their scientific discoveries with the rest of the world. The book explores the threats to polar regions because of global climate change and examines what can and is being done to protect these rich wildernesses.

Points for Discussion

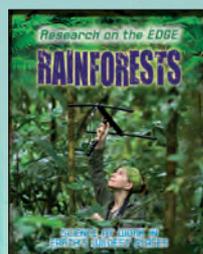
- Why is scientific research in polar regions so challenging?
- What dangers do scientists face while carrying out their work and how do they deal with them?
- How is climate change affecting polar regions and why are these areas so vulnerable to climate change?
- Why should polar regions and the wildlife that live there be protected?
- How can scientific discoveries made in polar regions benefit people everywhere?
- What do you think you can do to help protect polar regions?



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Activities

Write to Your MP

Write a persuasive letter to your MP explaining why funding for research in polar regions is so important and asking for more protection for these vulnerable places and their wildlife. Below are some points to consider when structuring your letter. Read the book again to find other points that can support your argument:

- Polar regions are home to some species of animal found nowhere else on Earth, such as the polar bear. If polar regions continue to be affected by climate change, the polar bear might die out.
- Krill live in polar regions, and are an important source of food in many food webs. Krill numbers are falling, due to global warming and overfishing. If krill die out, many animals that depend on this food could disappear too.
- Unusual animals, such as polar fish that can survive in icy waters, live in polar regions. Scientists are studying these creatures to see what lessons we can learn from them. If polar regions are not protected, these creatures may not survive and their secrets of survival in the cold may disappear with them.
- Polar regions may contain rich oil reserves, but should these reserves be explored? Many scientists feel that the value of polar regions lies in their wildlife and unspoiled wilderness, and argue that this should be protected over drilling for oil.



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Activities

Design Your Own Polar Lab

Design a picture of a polar lab that you think would be perfect for research and life on the edge of Earth. Annotate your drawing to explain the features you have chosen and why they would help you survive in the polar regions and carry out your scientific research.

Consider the below features when thinking about your design:

Living space: how will your design incorporate a kitchen, bathroom, bedrooms and general living/relaxing areas. What will the living space look like? How would you design it to make scientists feel relaxed when away from family for long periods of time?

Storage: consider storage space for essential supplies such as food, drink and equipment.

Work space: think about how best to design working areas. Will you have open-plan laboratory spaces where scientists can share ideas and discuss their work? Do you think it is more important to have quiet rooms, where research can be carried out silently?

Communications: consider the communications network your lab will need. How will scientists communicate with the outside world? Where will you place telephone stations and Internet connections so people can speak both privately and publically?

Transportation: where will you store your transport vehicles so they can easily be accessed when leaving and returning to the lab?

Outside the polar lab: think about the exterior of your lab and the message you want to send to anyone visiting it. The exterior of the lab will be the first thing that visitors see. What impression do you want to give them? Also consider the landscape your lab will be situated in – how best can you design it to blend in with and suit the polar environment?

