

APES: Competition on Sable Island

What is competition and what things would organisms compete for?

1. Go to the National Geographic's Expedition Atlas
<http://www.nationalgeographic.com/xpeditions/atlas/>
2. Look at the map of Canada (drop down menu) and click on Nova Scotia (or use drop down menu).
3. Find **Sable Island**, how far (estimate in miles) do you think it is from Nova Scotia: _____
4. Sable Island is a habitat for different species of seals. *Google* questions a and b below:
 - a. How far away is Sable Island from Nova Scotia? _____
 - b. Why is Sable Island referred to as the "*graveyard of the Atlantic*"?
5. Read the paragraph below and answer questions:

- Gray seals are doing very well on Sable Island. Harbor seals, however, are not doing as well. They seem to be having trouble reproducing and keeping their young pups alive. Only two to ten harbor seal pups are born on the island each year.
- Sharks, including the great white shark, like to eat both species of seal. Harbor seal pups and adults are smaller than gray seal pups and adults and are therefore easier for the sharks to catch and eat.
- Gray seals and harbor seals both eat sand lances, tiny fish that live just off the shores of Sable Island. To catch these fish, gray seals swim close to the ocean floor and dig their snouts into the sand to find hiding fish. Harbor seals, on the other hand, follow schools of sand lances and catch fish that wander from the school.

- a. Which seals are thriving, and which are having trouble?
- b. Where do gray and harbor seals mate and give birth?
- c. How does the presence of sharks affect competition between the seals?
- d. How are the seals competing for food? Which food-seeking strategy seems to be the most effective?

6. Go to the following website: http://education.nationalgeographic.com/education/media/crittercam-grey-seals/?ar_a=1

Watch the video and **describe the competition** between the two species of seals.

How are crittercams used to study this competition?

7. Competition is everywhere not only on Sable Island. Go to the following website where you will find some pictures of animals. In the space below, please identify what those organisms are competing for. <http://www.biotopics.co.uk/newgcse/Competition.html>

| Organism | Competing |
|-----------------|------------------|
| Zebra | |
| Penguin | |
| Cacti | |
| Bumblebee | |
| Monkey | |

Now go to the following website: <http://www.uic.edu/classes/bios/bios101/interactio/tsld010.htm>

- What is the **competitive exclusion principle**?
- What was some evidence for competitive exclusion?
- In your own words, explain **resource partitioning**.

