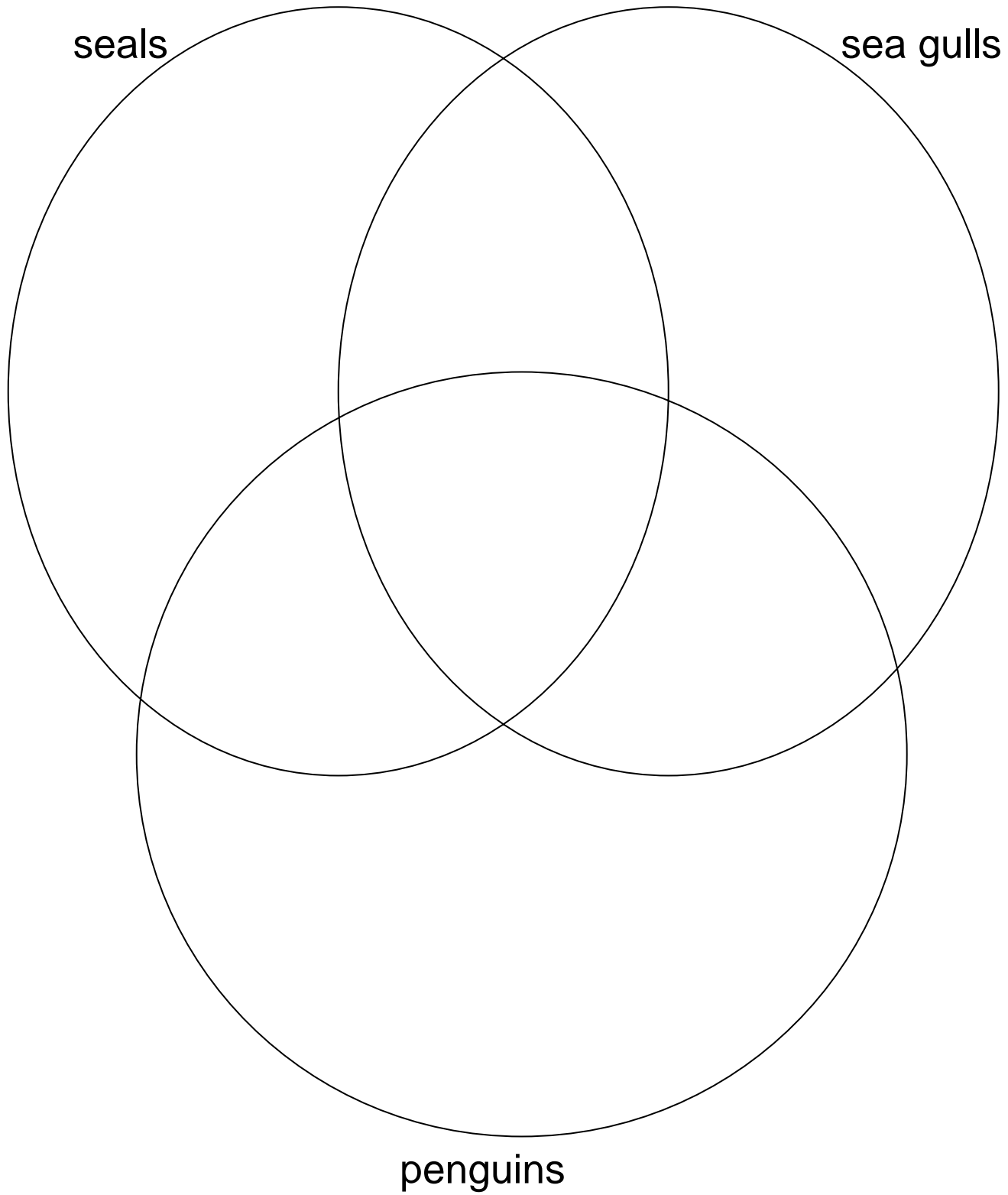


Penguin Adaptations Activity

Animals evolve special adaptations to be successful in their habitat. Many animals have parallel adaptations but are not taxonomically related. If you looked at a picture of a whale, a shark and a camel you might think the whale is more closely related to the shark than the whale. However, scientists have classified the camel and the whale as mammals, and the shark as a fish, two totally different groups.

Penguins are uniquely adapted to the harsh environment they live in and have evolved many unique characteristics. Although birds, they can not fly. Although air breathers, they can swim as well as many fish. When scientists classify animals, they group them with other animals who have similar characteristics. Penguins, seals and sea gulls are three animals adapted to life in the oceans. Below is a table of adaptations these three animals have evolved to be successful in that habitat. Use the Venn diagram to show how these animals are similar and different.

	penguin	seal	sea gull
body covering	feathers	fur	feathers
mode of transportation	swim	swim	fly
main food type	krill (meat)	fish (meat)	fish (meat)
food source	ocean	ocean	ocean
young	egg	alive	egg
body form	fusiform	fusiform	bulky
mouth	beak	teeth	beak
feet	webbed	webbed	webbed
bones	dense	dense	light
front limbs	fused flippers	flippers	wings



After you have completed placing the traits in the proper circles, reflect on which of these animals you think are more closely related to each other. Record your thoughts in your journal, and then share your ideas with the class.

Each of these animals have adapted to their environment, but each has maintained the fundamental characteristics of their taxonomic class. Because both seagulls and penguins lay eggs to reproduce and have feathers, they are both considered birds. Because she bears her young alive and produces milk, seals are considered mammals. Even though all three of these animals have many characteristics in common and share a similar environment, the seal is not closely related to the other two.

Take it further.

- 1) Create a Venn diagram of your own using three other animals that appear to be closely related, but are not.
- 2) Discuss, using evidence, what evolutionary pressure caused the penguins to lose their ability to fly.
- 3) Similar to penguins, the ostrich is a flightless bird and successful in its habitat. However, other flightless birds have become extinct, such as the Great Auk, Moa and Dodo. Research why their lack of ability to fly was a fatal adaptation. Do you think the lack of flight may become a problem for penguin populations? Support your answer.