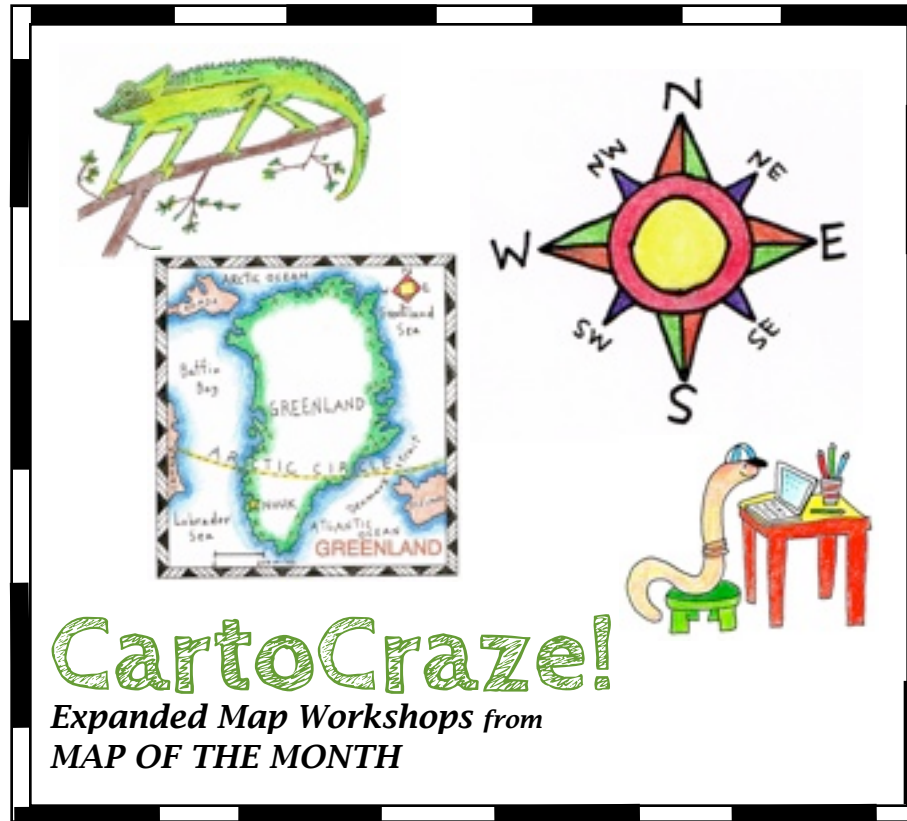


ANTARCTIC DESERT



CartoCraze!

Expanded Map Workshops

This PDF file of the ANTARCTIC DESERT is

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P. O. Box 2484

Providence, RI 02906

888 876 6277

www.mapsfortheclassroom.com

DESERT

The surface of a desert can be formed of sand, ice, small stones or large rocks.

The definition of a desert is that it receives less than 10 inches of precipitation a year: that precipitation can be either rain or snow.

Deserts are the driest places on Earth. Even though we tend to think of deserts as torrid sand covered locations, these geographic areas can also be bitterly cold.

Humans have always found it challenging to live in desert environments, and have lived at the outer edges of many deserts where agriculture and raising of animals is possible. Often people who live in arid areas are forced to be nomads, moving from place to place to take advantage of seasonal weather. A surprising number of plants and animals have adapted to the harsh inhospitable conditions of both hot and cold deserts.

DESERT TERMS AND THEIR DEFINITIONS

These terms and their definitions will help you to understand some of the aspect of desert areas.

DESERT A region that receives very low amounts of precipitation.

HOT DESERT A region with very high temperatures, a great deal of evaporation of moisture, and often high winds, conditions that are inhospitable for life.

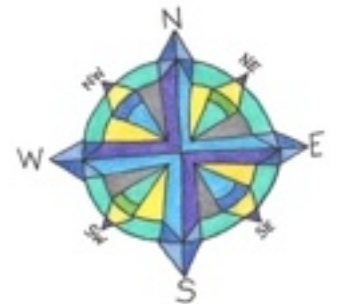
COLD DESERTS

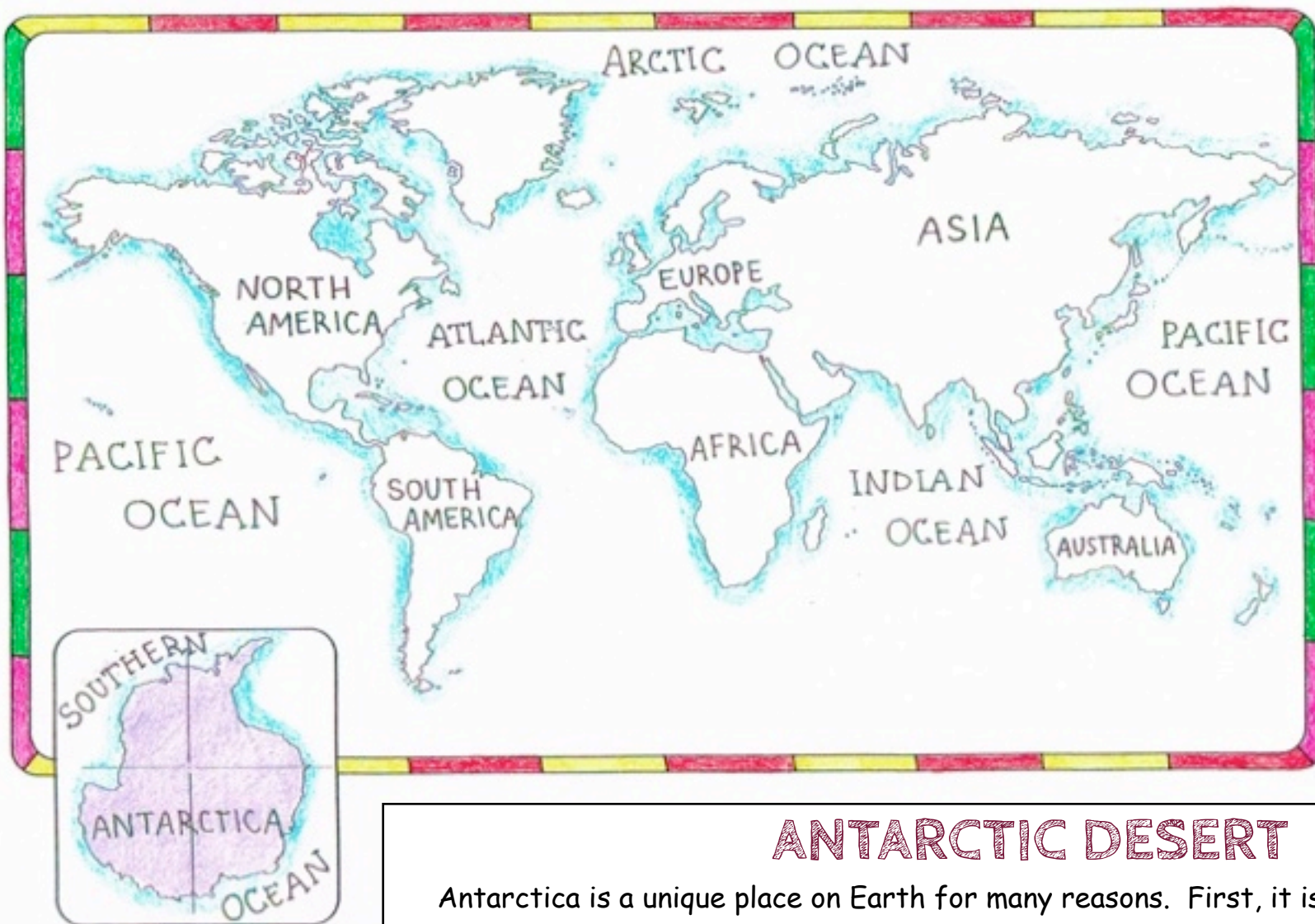
1. A **COLD DESERT** region is often separated from the ocean or body of water by a mountain range which blocks weather systems that produce moisture. The area beyond the mountain range remains very dry. Often this is called a "Rain Shadow" and can affect cold as well as hot deserts.
2. A **POLAR DESERT** has moisture carried away by high winds and there are snow dunes instead of sand dunes.

SAND Small dry particles of minerals and rock that are part of many hot deserts which form dunes.

DUNE Masses of sand or snow that are moved and shaped by weather, wind and gravity.

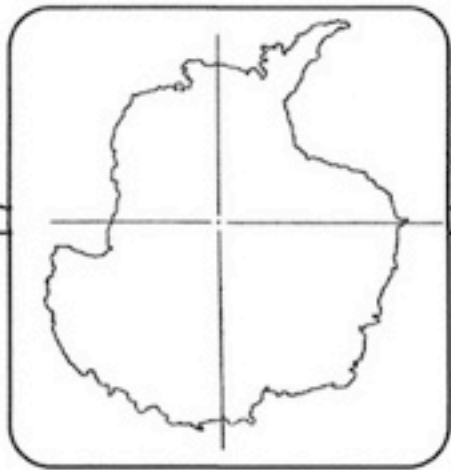
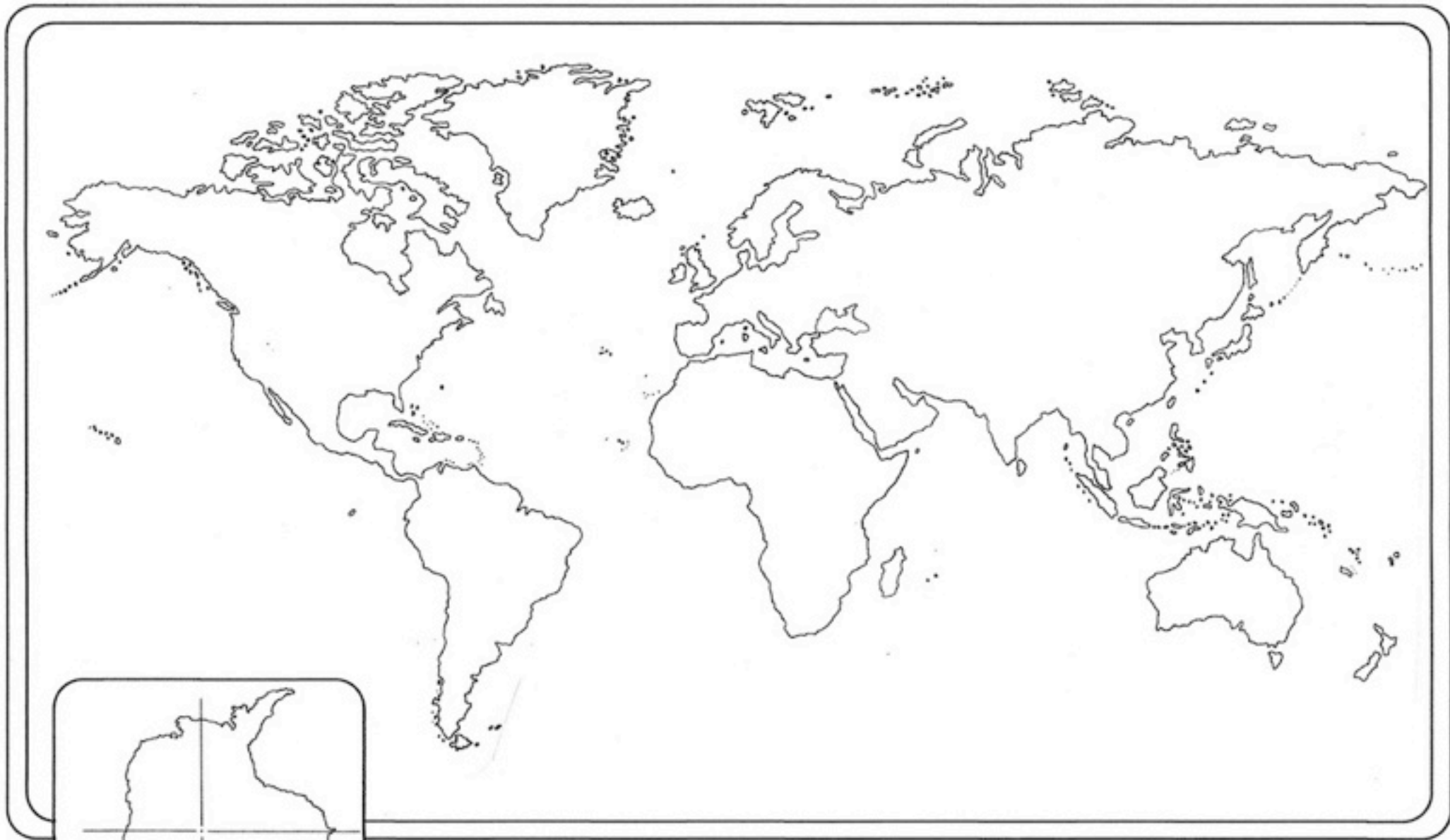
The following presentation is an introduction to the **ANTARCTIC DESERT**, one of Earth's great deserts, with some information about mapping, geography, people and animals of its surrounding area.





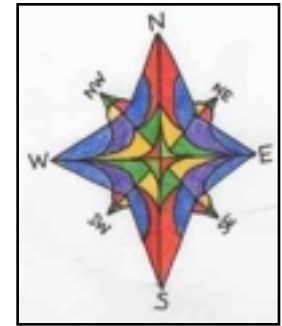
ANTARCTIC DESERT

Antarctica is a unique place on Earth for many reasons. First, it is the coldest continent, and a cold desert: 90% of the ice in the world is located in Antarctica. It is a desert because it is so dry: very little precipitation falls there. This means that there is hardly any rain or snow, and when snow does fall, it never melts. The inner sections of the continent experience 2 inches of snow a year, and the more coastal areas may receive 8 inches. Because Antarctica is a very windy place, huge blizzards can occur. These storms are not from fresh snow, but wind-blown snow that is already on the surface of the land. This can cause large drifts and dunes of snow similar to what happens on sandy, hot deserts.



DESERTS

On The Map!



We can better understand the size of the ANTARCTIC DESERT with the help of this map.

The continental desert of ANTARCTICA is much larger than the United States!

Antarctic Digital Coastline: Antarctic Digital Database, 2000
US Digital Outline: ESRI



Antarctic Fur Seal

These large seals with dense fur are able to stand up to the harsh Antarctic climate. They also have an insulating layer of blubber which provides them with extra warmth. These seals are dark brown in color but when they're born, their fur is almost black. However, one in one thousand pups are born "blond" with pale fur.

The adults are extremely protective of their young. These seals are very aggressive, possessing a very territorial nature. They are known to be very confrontational with each other.

The seals are able to dive in the frigid Antarctic waters, the deepest dive recorded was 590 feet deep. While diving, they are foraging for krill, fish, and squid. On average, a fur seal eats one ton of krill a year!

COUSINS!

Another **PINNIPED** of the Antarctic Desert is the Leopard Seal, which has a spotted underbelly and an oversized head. They eat penguins, krill, fish and other seals.



Photo: Jeff Keller, National Science Foundation

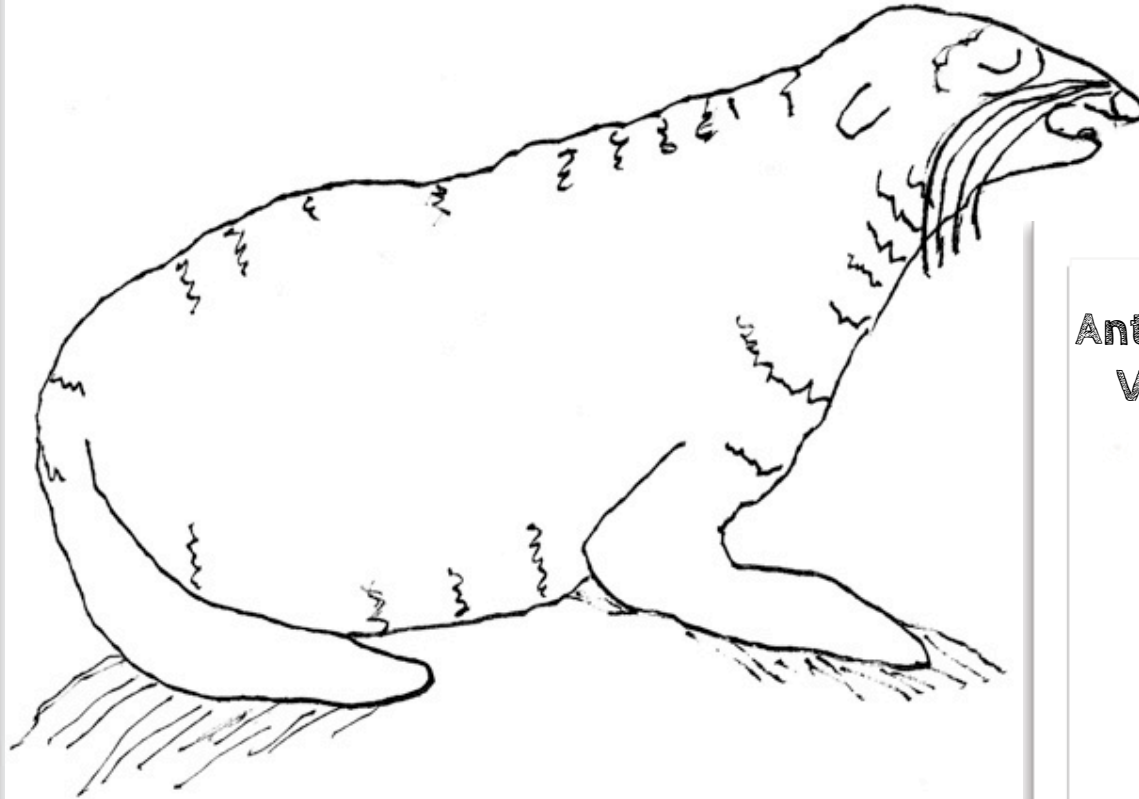


What exactly is a PINNIPED?
What does this word mean?
What does a pinniped need to live?
Where on Earth do pinnipeds live?

Antarctic Fur Seal

SPELLING

snout
pups
undersides
coloring
dense
molting
hunt
blubber
insulate
aggressive
defensive
protective
breeding
population
dive
pelt
underfur
mane

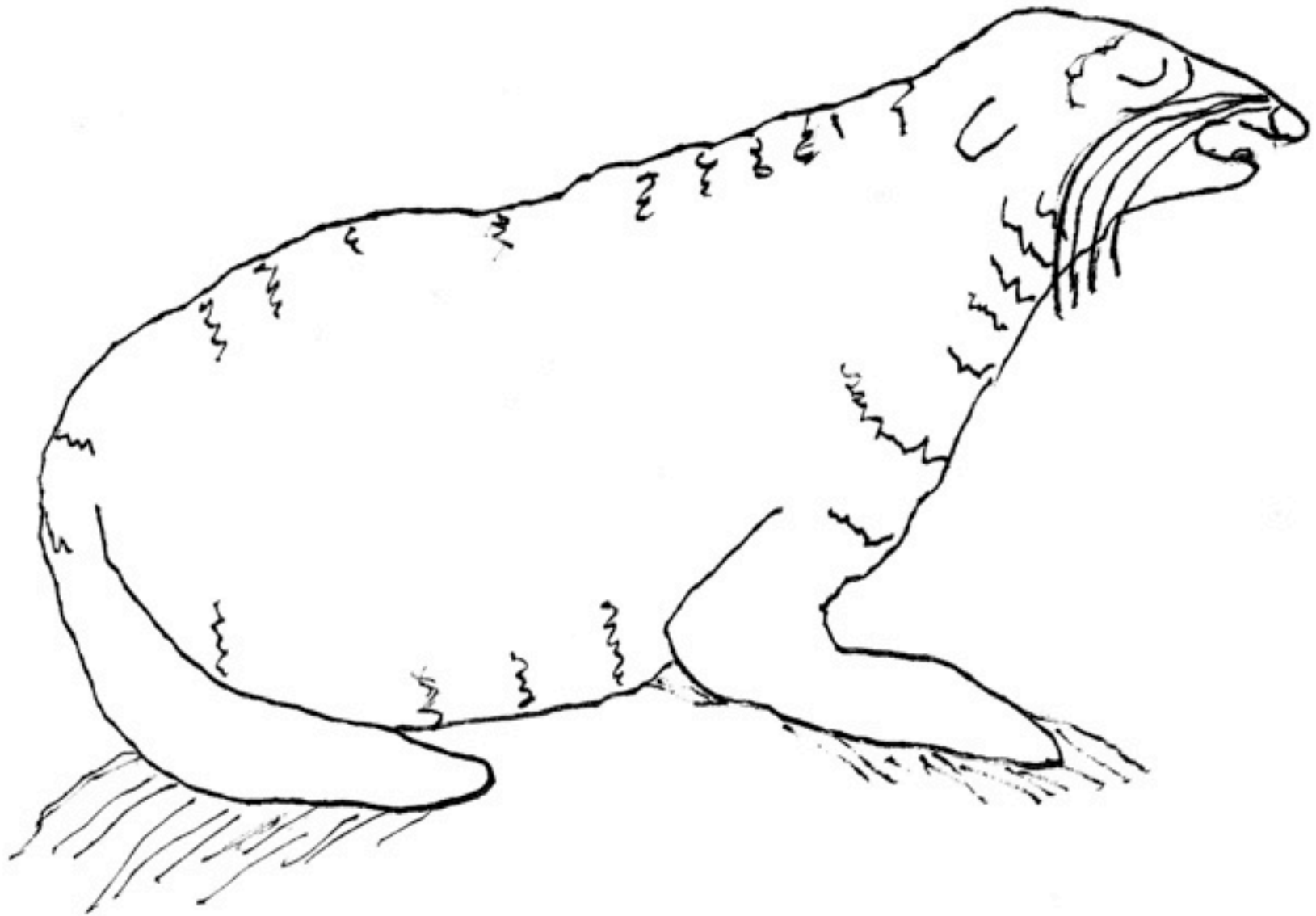


Antarctic Fur Seal

Antarctic Fur Seal

VOCABULARY

hardy
charismatic
blubber
insulation
dense
fur
underfur
muzzle
beaches
flippers
mane
aggressive
pups
territorial
fierce
foraging
colony
protected (legally)
krill



Antarctic Fur Seal



PENGUINS IN THE DESERT!

There are eight different species of penguins that live in the Antarctica and the islands that surround it.

To the left are EMPEROR PENGUINS!

Below are GENTOO PENGUINS on

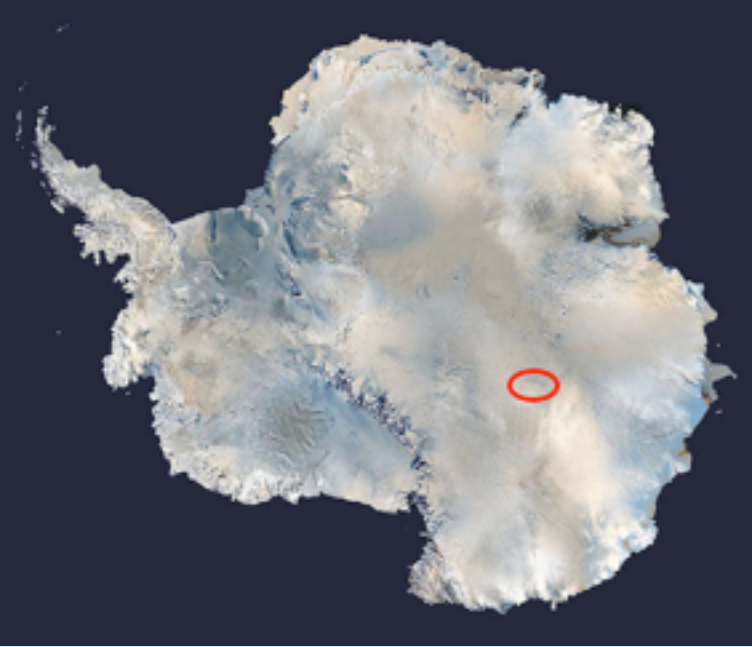


Research to make a list of all eight penguin species, with their identifying characteristics!

Choose one species and write an essay about it. What is its locale, its size and appearance, how does it lives in the desert cold?

What is the community of penguins like? What do they eat to survive and how do they raise their young?





COLD HARD FACTS!



"Omond House", the first permanent base, built in 1903 by an expedition from Scotland.

The coldest temperature recorded on Earth was in taken at the Vostok Station (shown above): MINUS 128.9 degrees F!

The location of this Soviet station is marked on the map at upper left.

Over 30 countries maintain stations in Antarctica where research is done. Many researchers, some with their families, live year round in the harsh climate of this cold desert!



Two British men, Ben Saunders and Tarka L'Herpinier, finished the whole route that polar explorer Captain Robert Scott and his men tried, and failed, to complete over a century ago.

This 1800 mile route extended from the coast of Antarctica to the South Pole and back.

For food supplies, the two men hauled freeze-dried food including cereal and energy and protein bars. They drank carbohydrate and electrolyte drinks. Sometimes a freeze dried meal even included chicken curry!



Read more about this expedition. Write about how long the trip took, what kind of equipment the adventurers needed, and how their food differed from the food carried and eaten by Captain Scott's men.

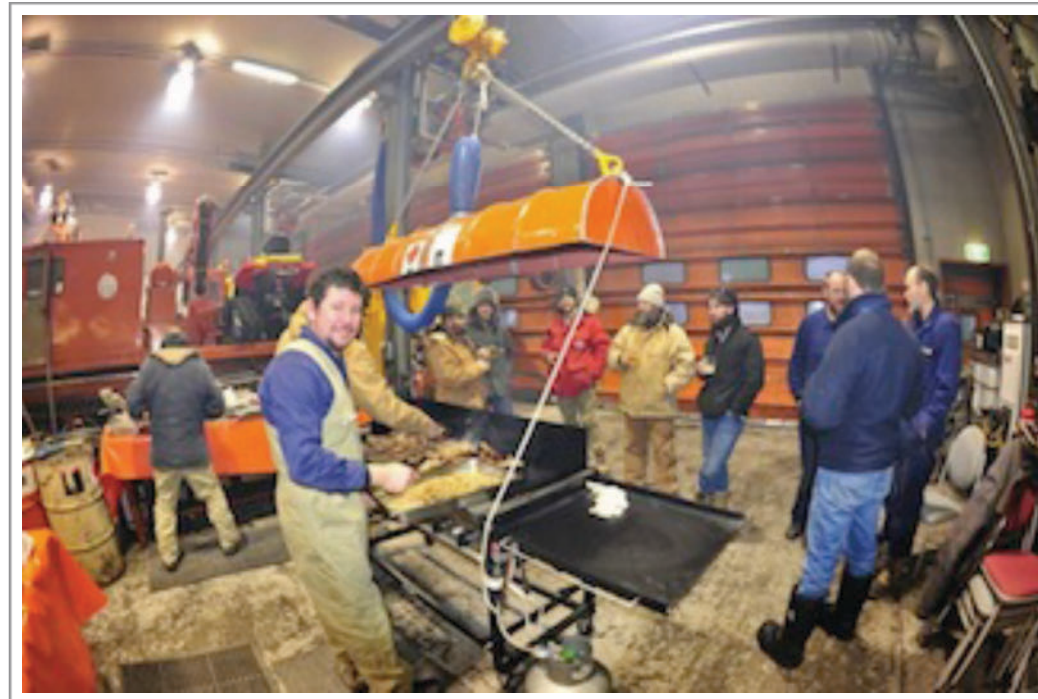
CAN'T LIVE WITHOUT FOOD!!!

Throughout Antarctica, there are many international research stations where scientists live and work in remote areas. Food and supplies must be brought in, often just once a year.

Food is a very important part of life where winters are long, dark and cold. Variety is a priority, to give pleasure and diversion as well as nutrition to the workers.

Meals and snacks must be carefully planned and stored so that there is no spoiled food, and that there will be enough to last for a long time. Perishable items, like fresh fruit and eggs that cannot be frozen, must be eaten first. Much anticipated celebrations, like birthdays and holidays, are a chance to have special food and share some fun with co-workers.

Photo: T Iolovski, The Australian Antarctic Division



At the station run by Australia, a barbecue is a way to make variety at meal times. If the weather is mild they can be held outdoors, and they are held in the workshops.

Humpback whale



Photo: Jeff Keller, National Science Foundation

Although not living on the desert itself, the huge humpback whale is a close neighbor in the waters surrounding Antarctica.

Humpback whales normally breed every two years. Gestation takes a whole year. Newborns weigh more than 2500 pounds! Humpbacks will dive underwater for 15 to 20 minutes, feeding mostly on krill.

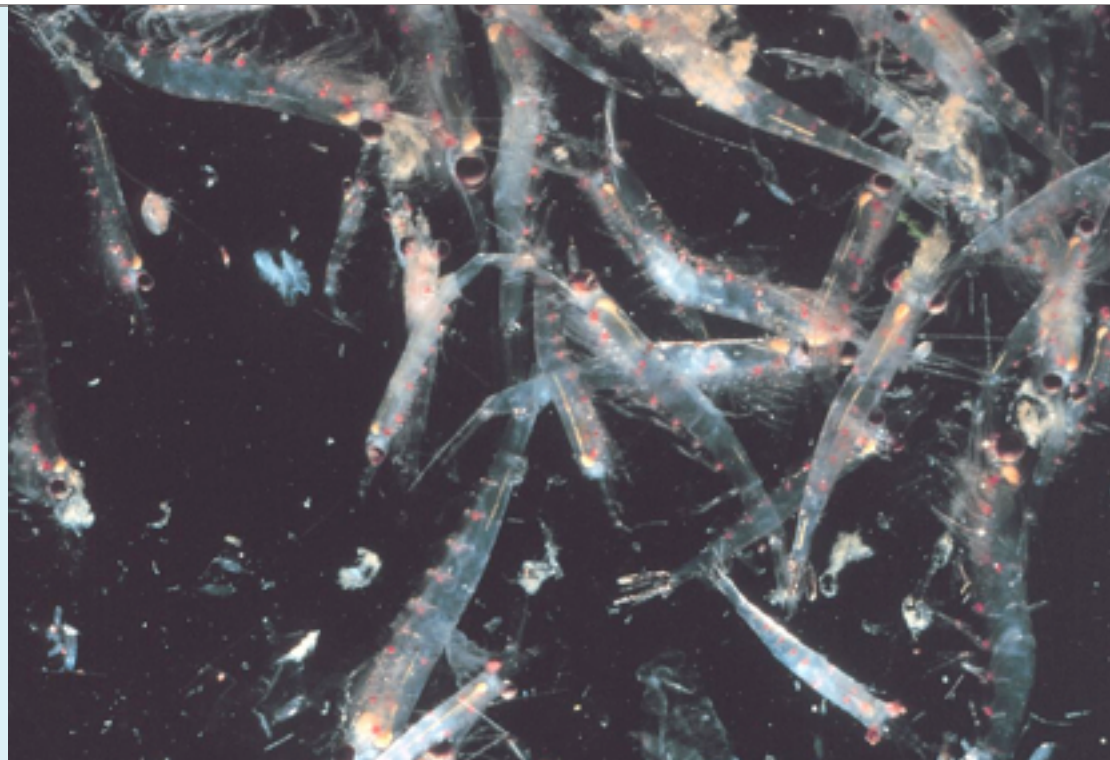
NEIGHBORS OF THE COLDEST DESERT!

Antarctic krill are small crustaceans, shown at right, and a major food source for all kinds of animal life in the waters surrounding this continental desert.

Whales, all kinds of seals, penguins, and many species of birds depend on krill for food. Krill swim in dense swarms. One swarm covered an area of 170 square miles of ocean, to a depth of 660 feet. It is believed that this swarm contained at least 2 million tons of krill.



Krill is a species that can emit light! How does this happen? Can you draw a full picture of a humpback whale?





Photograph By: Melissa Li, National Science Foundation

This photo from the United States Antarctic Program shows how parts of the continental desert are not snow covered year round. They report:

“Wright Upper Glacier spills into a feature of the Wright Valley called the Labyrinth. The McMurdo Dry Valleys is a polar desert ecosystem that has been the site of intensive research for more than 50 years.”

The **Antarctic Peninsula** is a very interesting area. This long arm extends towards the southernmost tip of the South American continent. It is very mountainous, and has a wide range of geographic features: islands, glaciers, ice sheets, and some land that is free of ice at certain times of year.



Welcome to the southernmost land on Earth: **ANTARCTICA**. The **South Pole** is located here on this very snowy, cold and windy continent. A huge ice sheet covers most of the land. In the winter, the ocean around it freezes to make the surface almost double in size. Many of the highest mountains in the world are here. Because conditions are so severe, Antarctica does not have any permanent human residents, but many scientists visit to study this most unique continent and its features.

MAP ACTIVITIES

Label the following features of the continent of Antarctica. Shade along the coastlines with blue. For more detail, you can label other features.

- BODIES OF WATER**
- | | |
|--------------------|----------------------|
| Southern Ocean | Ross Sea |
| Weddell Sea | Amundsen Sea |
| Lutz-Holm Bay | Bellinghousen Sea |
| Kong Hakon VII Sea | Davis Sea |
| Mackenzie Bay | Dumont D'Urville Sea |
| Porpoise Bay | George VI Sound |

- ISLANDS**
- | | |
|----------------------|------------------------|
| Alexander Island | South Shetland Islands |
| South Orkney Islands | Roosevelt Island |

- LAND AREAS**
- | | |
|---------------------|-----------------|
| East Antarctica | West Antarctica |
| Antarctic Peninsula | Palmer Land |
| Queen Mary Land | Queen Maud Land |
| Wilkes Land | Graham Land |
| Enderby Land | Kemp Land |
| Coats Land | Ellsworth Land |

- ICE SHELVES**
- | | |
|------------------|----------------------|
| Ross Ice Shelf | Amery Ice Shelf |
| Ronne Ice Shelf | Shackleton Ice Shelf |
| Larsen Ice Shelf | West Ice Shelf |

Label the **SOUTH POLE**

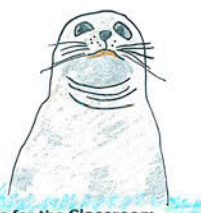
HIGHEST PEAK
Using the triangular peak symbol on the map, draw in and label **Mount Vinson**, which is the highest peak at 16,050 ft.

MOUNTAINS
Some of the **Transantarctic Mountains** have been drawn in. Using the triangular peak symbols, complete this range. Add these other ranges:
Queen Maud Mountains
Ellsworth Mountains
Shackleton Range
Pensacola Mountains

Label the **ANTARCTIC CIRCLE**

DECORATION
Color the **ANTARCTICA** title and the illustrations.

On the reverse side of this map, list the animals found on the continent of Antarctica. Some animals are drawn on the map: draw and color others!



ANTARCTICA

HERO AT THE OTHER POLE



Matthew Alexander Henson, a black American, was a member of the first expedition to reach the North Pole on April 6, 1909, now over a hundred years ago. Henson was forty-three years old at the time, and he accompanied fellow explorer Robert Peary and four Eskimos. Peary and Henson had failed to reach the pole on seven previous attempts because of severe ice and below zero temperatures. On the final leg of the successful journey, Peary sent Henson ahead on the lead sledge because he felt Henson could handle a sledge better than any living man except some of the best Eskimo hunters.

Henson was born in the more temperate area of Maryland in 1866. As a very young man he traveled the oceans of the world on a merchant ship. He visited China. He sailed around the tip of South America. During these years he met Robert Peary who was planning a surveying expedition in Nicaragua.

Matt Henson had many wonderful qualities, including his seafaring skills, that Peary found invaluable. The men traveled together for the next 23 years. Henson was known for his courage and strength. In the Arctic, he was popular with the Eskimos because he learned their language fluently. He built all the sledges which were the means of transportation on the famous expedition. He was considered by all to be one of the best sledge drivers in the far north. He could also build igloos and stoves!

Matthew Henson received many honors in his lifetime. The U. S. Navy awarded him a Silver Medal. Although he had little formal education, he was awarded honorary degrees from Howard University and Morgan College for his experiences. After his death in 1955, Henson was honored by a plaque at the Maryland State House in Annapolis, the first such award for a black man in the South. In 1988, the United States bestowed a great honor on this American by burying his remains in Arlington National Cemetery.



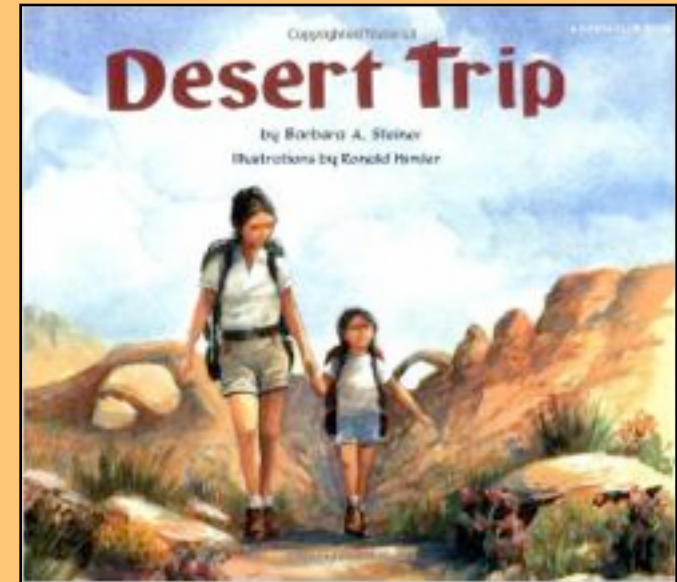
ANSWER THESE QUESTIONS!

Is the North Pole considered to be a
desert too?

Who was the first explorer to reach the
SOUTH POLE?



DESERT READING!



A girl and her mother plan a walking trip through the southwestern desert of the United States.

Lloyd Alexander

The Golden Dream of Carlo Chuchio

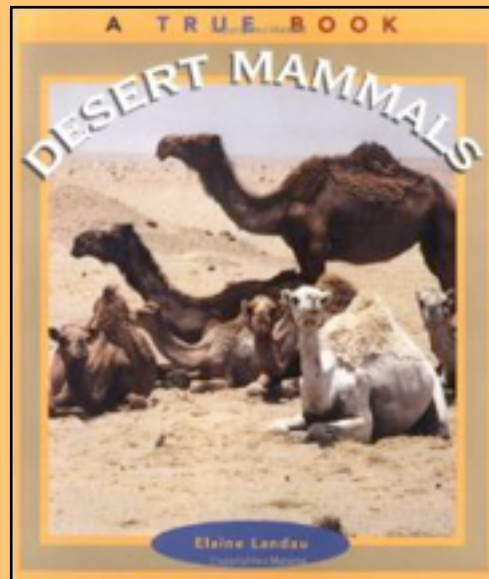
BY THE AUTHOR OF THE CHRONICLES OF PRYDAIN

The Golden Dream of Carlo Chuchio

by Lloyd Alexander

The young adventurer Carlo Chuchio encounters many curious people while seeking hidden treasure on the Road of Golden Dreams in the desert.

With Baksheesh, the world's worst camel-puller, Carlo leads a caravan through the realm of Keshavar and risks his life for a prize that may not even exist.



DESERT MAMMALS

by Elaine Landau

Students can learn more about all the animals that thrive in desert environments.

THE DESERT IS THEIRS

by Byrd Baylor

A prize-winner that describes the flora and fauna of the southwestern American desert.

