

IN LIFE ARE THE FREEZERS

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LIFE IN THE FREEZER

Penguins are a favorite of the flightless birds. Those in Antarctica survive where the ice cap covering the continent is over three miles thick, or as much as 13 Empire State Buildings stacked on top of each other!

A visit to an aquarium or zoo will delight students and motivate them to learn more about the different species. Many realistic-looking penguins are available at nature stores. These are fascinating when displayed on an iceberg made from styrofoam chunks put together with hot glue and carved into an iceberg shape.

"Life in the Freezer" is designed for primary grades and may be adapted for use in the middle grades. Make this unit into a learning center with library books, videos, stuffed penguins and other special features that will inspire your students and give them a broader knowledge of God's creation and love.

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WHAT IS A PENGUIN?

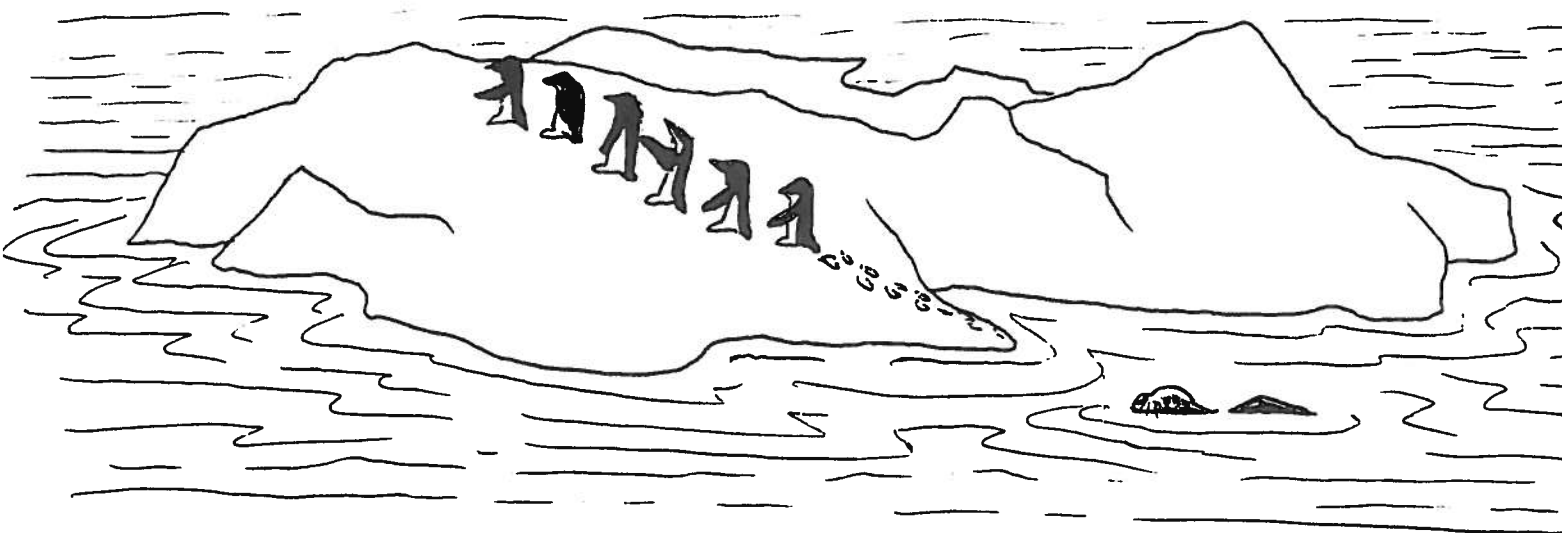
Penguins are a family of special flightless sea birds found only in the Southern Hemisphere. Because they are warm blooded, like mammals, they can be active in almost any climate. Some thrive year round in the depths of the Antarctic; others endure the blazing heat of the tropics. They live clear on the other side of the globe from the polar bears of the Arctic North. Their home stretches from Antarctica to South Africa, South America, Australia, New Zealand and even as far north as the Galapagos Islands. There are no penguins at the South Pole, however, which lies 800 miles from the nearest ocean and a supply of available food.

Penguins are pelagic, meaning that they spend most of their lives at sea, rarely coming ashore except to breed.

Penguins vary greatly in size. The Emperor penguin is the tallest—standing more than three feet tall, while the Little Blue is the smallest. Standing only 15 or 16 inches tall, the Little Blue is incredibly swift underwater.

The 17 recognized species of penguins are very much alike. They only differ in size, bill shape and in minor details of their external (outside) markings. All are round, compact birds, with large heads perched on short necks. Their feather coats almost look like fur because the feathers are short-vaaned and dense.

Few creatures have captured the hearts and imaginations of adults and children alike as have penguins. These waddling, flightless seabirds are fascinating to observe as they teeter around in their black-tie plumage!



NORTH AMERICAN DIVISION

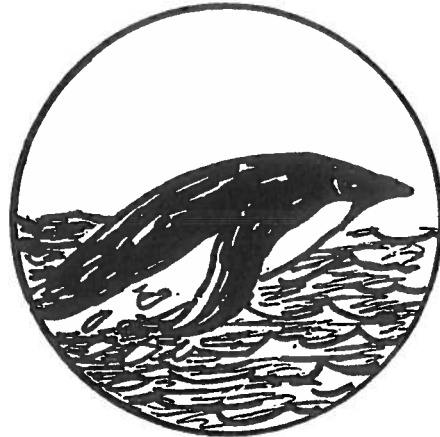
SALES AND MARKETING



ALL THE RIGHT MOVES

Penguins have some of the coolest moves in the animal kingdom. They waddle, hop and do belly flops. Their submarine shaped bodies are best suited to the place where they spend the most time: the sea. Penguins are super swimmers. They propel themselves with powerful flippers and steer with their feet and tail.

PORPOISING...almost like flying—penguins like Adélie can do a pretty good imitation of flying! While swimming at top speed underwater, they use their flippers to launch themselves above the surface. Then they grab a breath of air and dive back in.



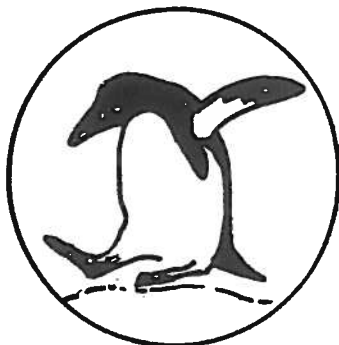
QUICK ESCAPE...this cool move gets the Adélie penguin out of the water in a flash. Jumping onto the ice, it escapes the hungry leopard seals and other predators looking for a quick lunch.



BELLY TOBOGGANING...its how penguins travel on snow and ice when they are in a big hurry. They become feathered sleds, sliding on their smooth, fat stomachs. They power themselves by pushes from their strong feet and flippers.



A SHORT HOP...traveling across snow and ice is done by hopping. The birds' sharp claws help them grip the ice during take off and landing.





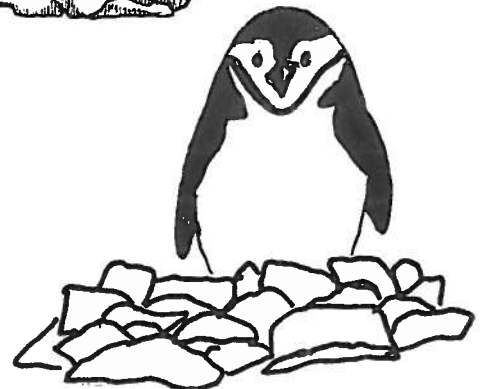
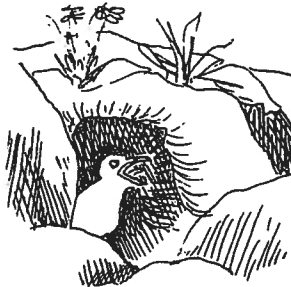
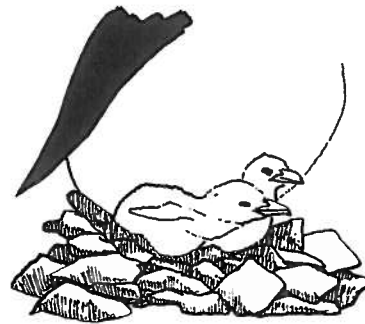
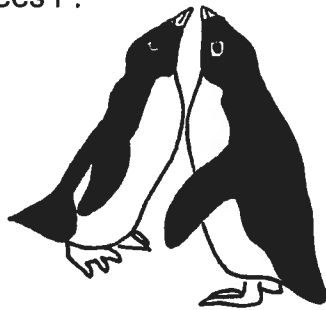
NESTING HABITS

Baby penguins hatch from eggs like all other birds. Adult penguins must come ashore each year to lay their eggs and hatch their babies. Most penguins come back to the same place every year—even if they have to swim thousands of miles to get there. Most breed in colonies, some as large as a million pairs.

The male usually gets to the nest area first. Then when the female arrives, they greet each other with a little ceremony.

Nests are built in many different ways. Some penguins that live in warmer places like to make their nests in holes in the ground where the chicks will be very safe. It all depends on where the penguins are and what materials are available. In the coldest places, there are no plants so penguins gather some rocks together to make a nest. If their neighbor isn't looking, they may steal additional rocks.

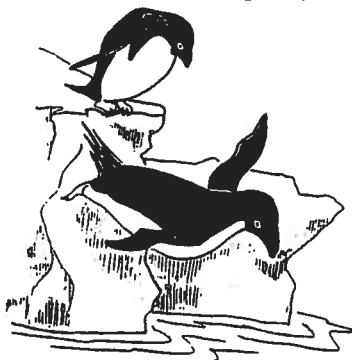
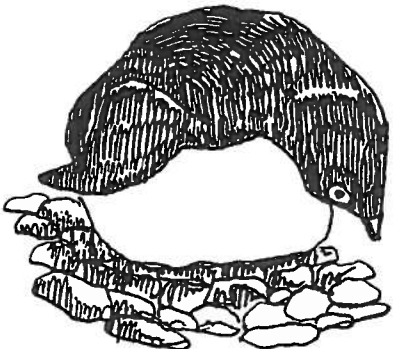
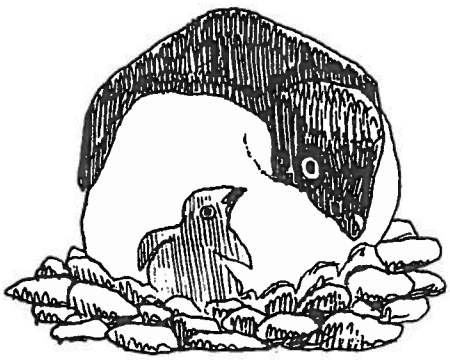
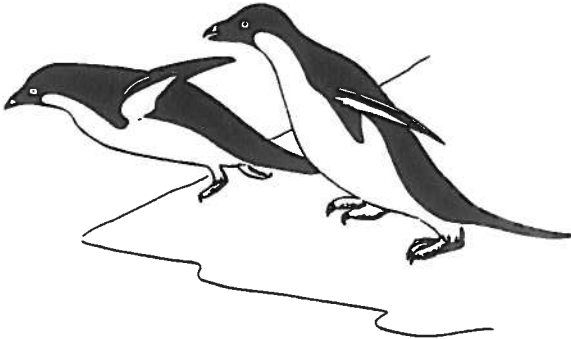
King penguins and Emperor penguins do things a little differently. They carry their eggs around on their feet. After the eggs hatch, the parents take turns carrying the baby penguins on their feet. When it's really cold, both eggs and chicks can be covered with a special flap of skin that keeps them warm. The babies of Emperor penguins are hatched in the most severe weather on earth. Females lay the eggs and the males balance the eggs on their feet and keep them warm for six freezing weeks. Blizzards of 120 miles per hour winds may blow and they all huddle together for warmth in temperatures that can drop below -70 degrees F.

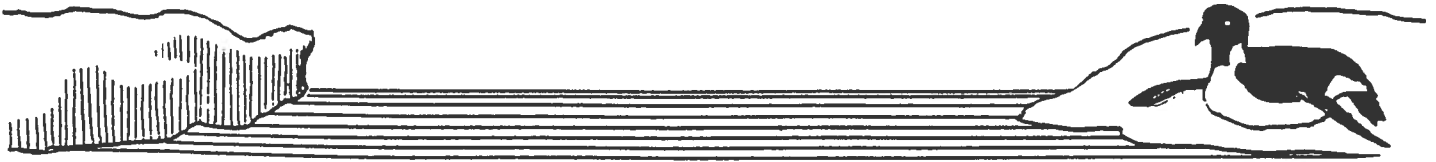




A YEAR IN THE LIFE OF AN ADÉLIE

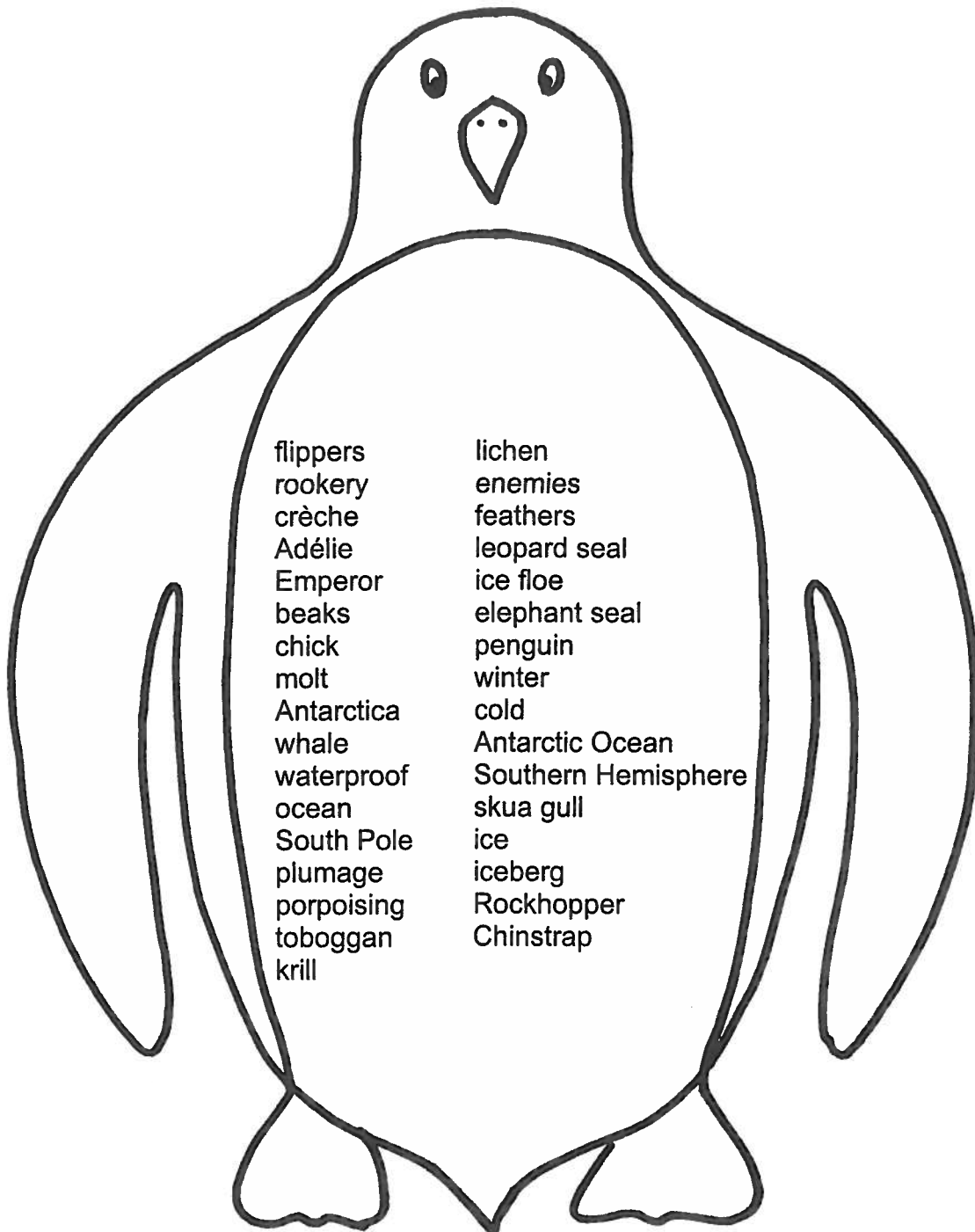
Using four large sections of mural paper, draw and color illustrations to show what the Adélie penguins are doing during each season in the Southern Hemisphere. (Remember, the seasons are reversed). Write a detailed description to accompany each season, like the samples given here. Then put the sections together for a mural.

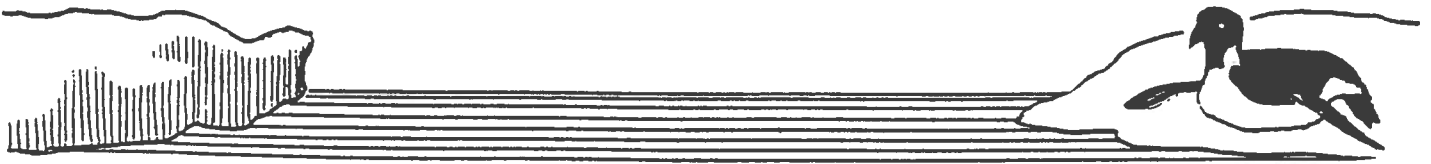
<p>Winter (June, July, August)</p>  <p>Adélies swim, play, and dive in the sea. They eat many krill to add a layer of fat.</p>	<p>Spring (September, October, November)</p>  <p>Penguins march to the rookery, choose mates, build nests and lay eggs. Females go back to the sea.</p>
<p>Summer (December, January, February)</p>  <p>Females return to the nests and males go to sea for food. Sun shines all the time. Eggs hatch. Chicks get waterproof feathers. They also join others at day nursery.</p>	<p>Fall (March, April, May)</p>  <p>Adult penguins return to sea to fatten up on krill. They wait on ice floes for their feathers to molt. They play in water, keeping watch for leopard seals. They float on ice floes.</p>



CHILLY VOCABULARY

Using an overhead projector, enlarge the penguin pattern to fit on a large-sized poster board. Cut out. Print the vocabulary words on the shape as they are used during the unit. These words may also be used as a spelling list.





PENQUIN DIAMANTE

A diamante poem has seven lines and does not rhyme. It is shaped like a diamond. Use the directions and example below to create a penguin diamante. Select a type of penguin to make your diamante more challenging. Consult a thesaurus to find descriptive words. Do your work on practice paper first, then copy on a large construction paper diamond. Carefully draw an illustration of your subject. Have the class guess which kind of penguin your diamante illustrates. Post your diamond and picture on the bulletin board.

Line 1 - one word - noun

Line 2 - two words - adjectives

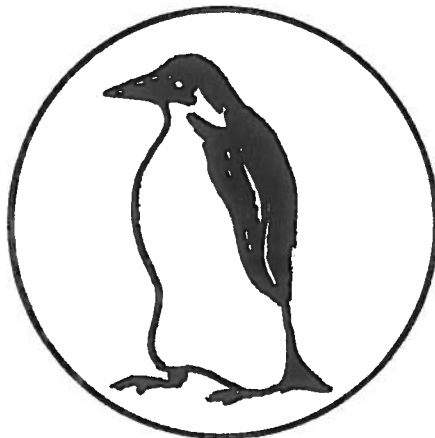
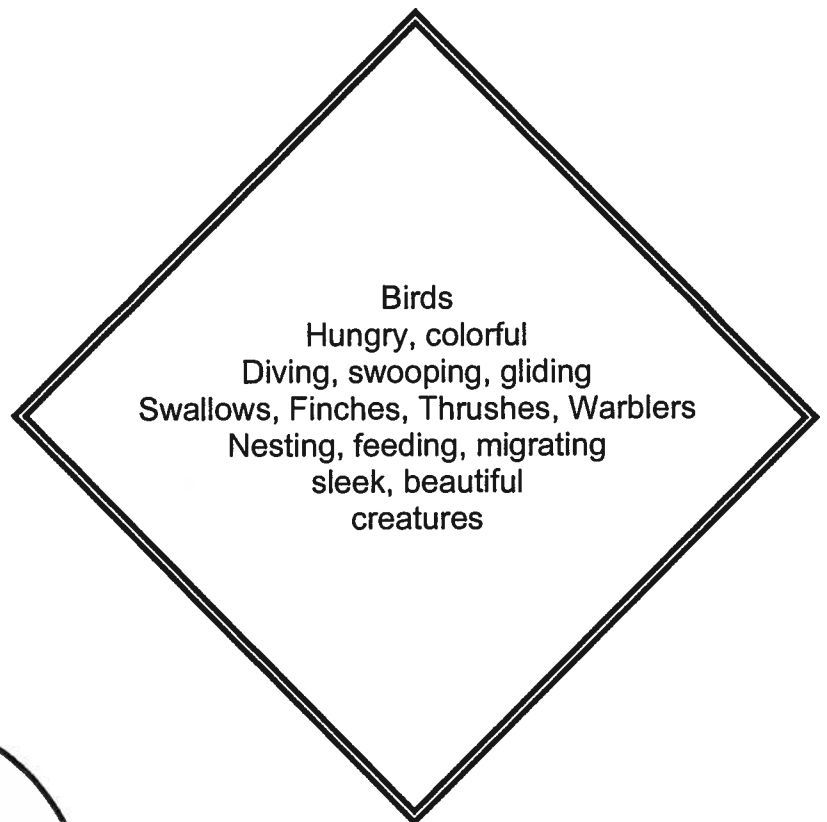
Line 3 - three words - "ing" verbs

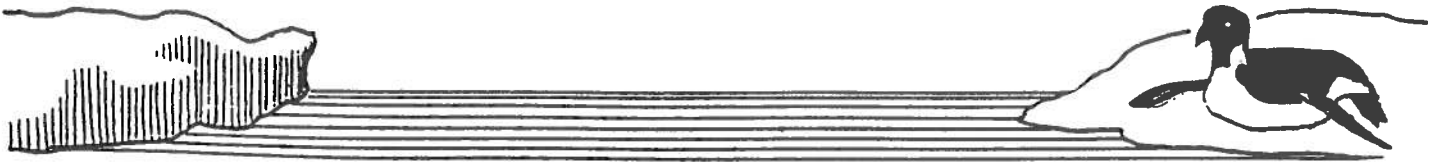
Line 4 - four words - nouns

Line 5 - three words - "ing" verbs

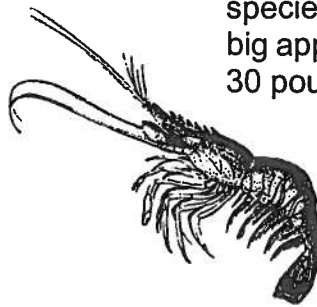
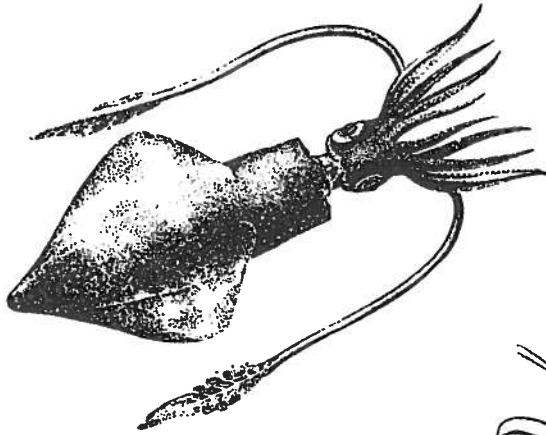
Line 6 - two words - adjectives

Line 7 - one word - a synonym
for the first noun





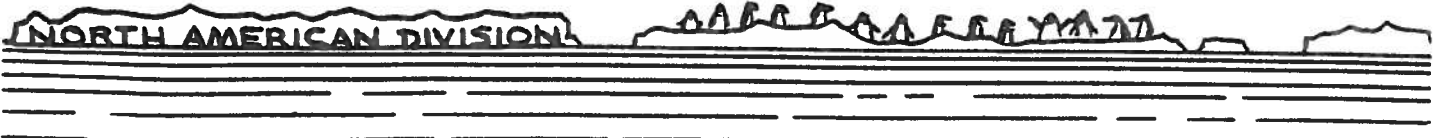
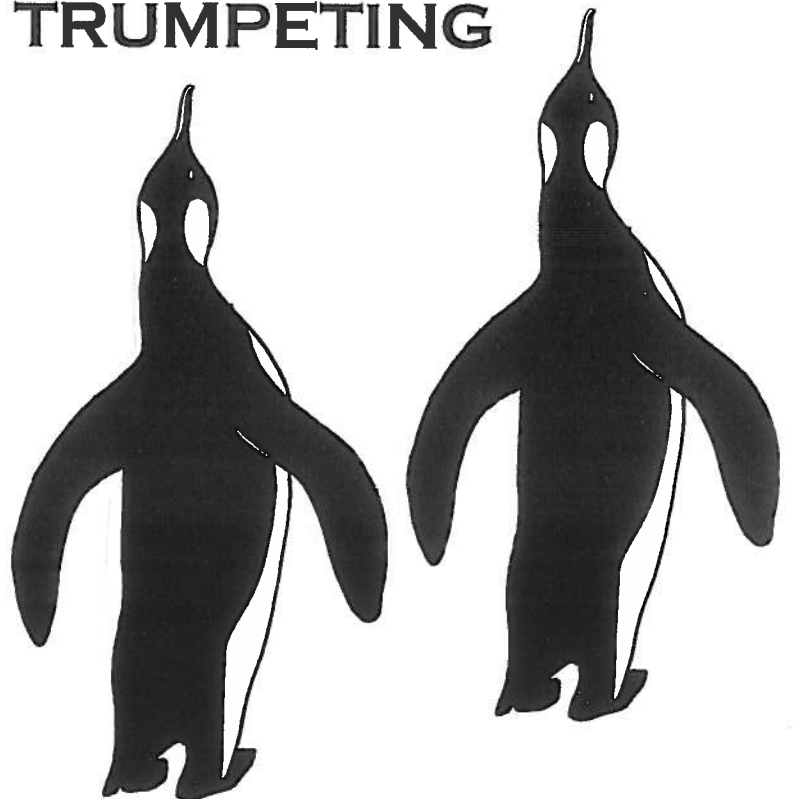
LUNCH – FROM THE FREEZER!

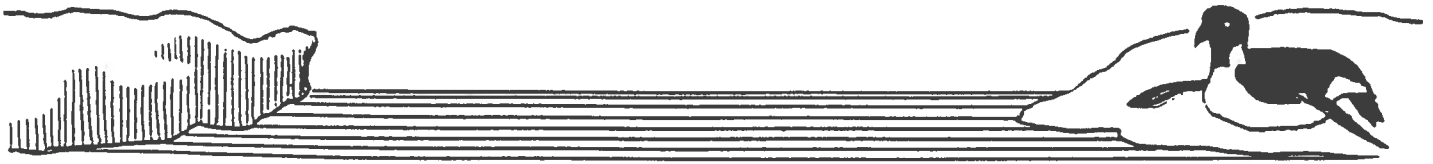


Penguins are carnivores that obtain all their energy from the ocean. They feed on crustaceans, the most common being krill. Squid is another favorite. All these creatures are abundant. Each penguin species has a food favorite. They have big appetites. The Emperor can eat up to 30 pounds of food at a time!

TRILLS AND TRUMPETING

Penguins use trills and trumpeting for a variety of purposes, including communication, territorial displays and courting. Penguin calls are extremely important. Adults and chicks recognize and find each other by the call – even in huge crowds of large colonies when the parents return from fishing expeditions.

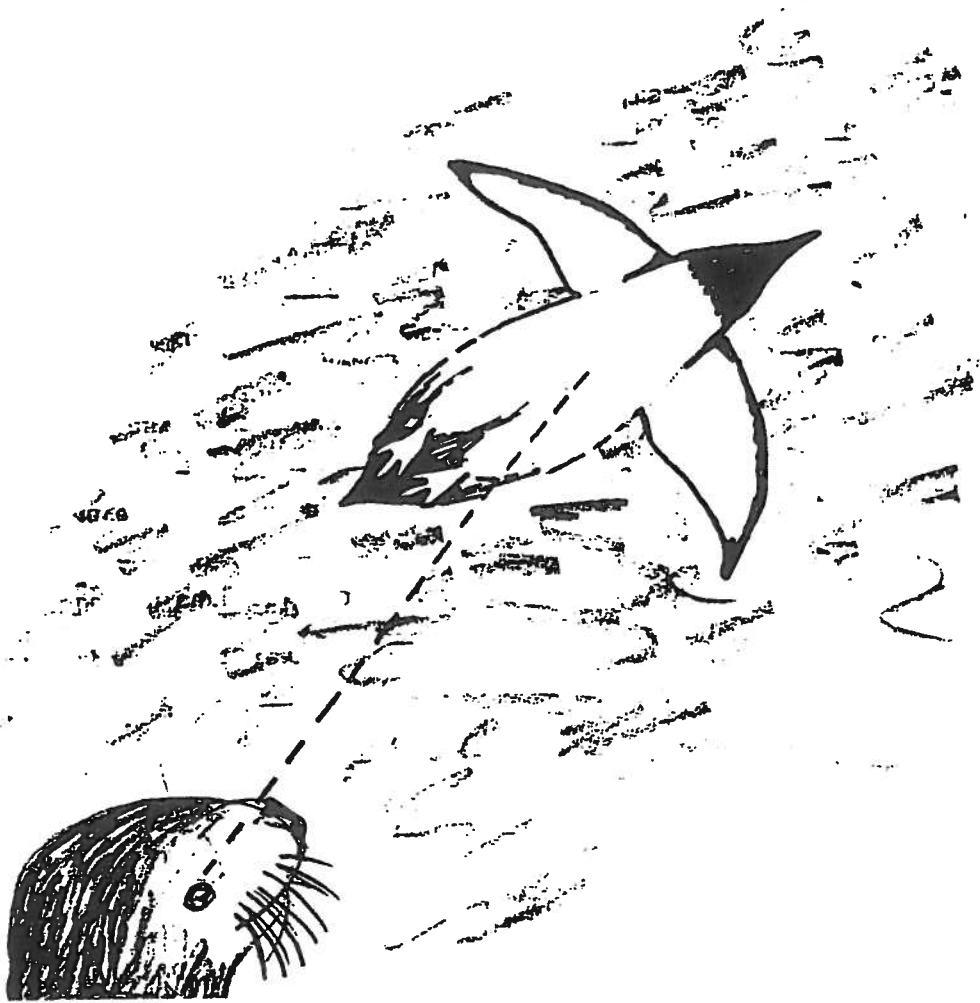




SUITED UP FOR SURVIVAL

The ocean can be a dangerous place for penguins. Leopard seals eat 15 Adélie penguins a day but they usually catch the weak or sick ones.

Penguins spend most of their time in water, looking for food. Hiding from their predators means survival. Their black and white "suits" are more than just cute. Their tuxedo-like, two-toned plumage helps conceal swimming penguins from predators above and below the surface. The principal behind this natural camouflage is called **countershading**. The dark back of most penguin species, seen from above, is hard to distinguish against murky surrounding waters. Similarly, a killer whale or leopard seal lurking in the depths might not notice the bird's white underparts in the bright glare at the water's surface.





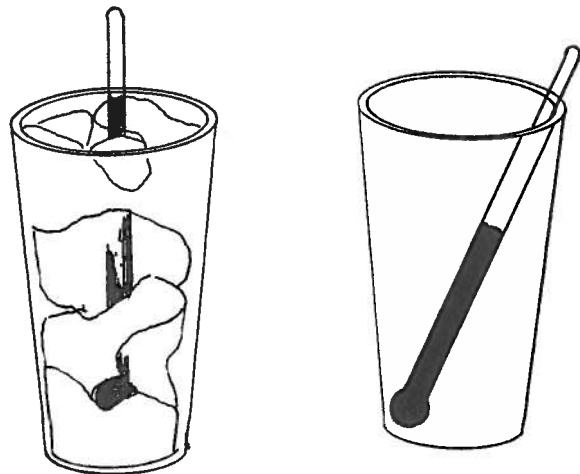
INSULATION FOR LIVING IN THE FREEZER

Penguins have a substantial layer of blubber just under their skin. This is an advantage that penguins have over other birds. Because they are flightless, their weight is not of such great importance, so they can easily carry more blubber than other seabirds.

To find out how the fat layer works as an insulator, do the following experiment:

Materials Needed

2 – 7 or 8 oz. paper cups
shortening
2 thermometers
freezer
timer



Directions

1. Fill one paper cup with shortening.
2. Place one thermometer into the cup of shortening so that the bulb of the thermometer is in the center of the mass.
3. Stand the other thermometer in the empty paper cup. If it tips over, just lay the cup on its side.
4. Read and record the temperature shown on each thermometer. Place both cups in the freezer.
5. Read and record the temperature on each thermometer every 3 minutes until 30 minutes has passed.
6. Wait 24 hours and again read and record the temperatures.
7. Discuss your results with the class.

ARE FATTER ANIMALS WARMER?

Repeat the experiment using different thicknesses of shortening. Be sure to follow the same timings of step #5 each time. Record each set of results carefully for comparisons.



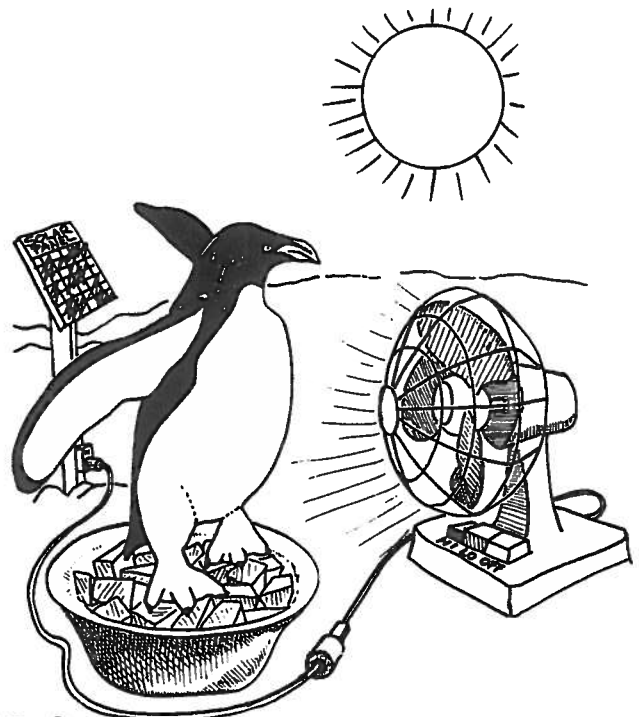
RESULTS OF "Insulation for Living in the Freezer" EXPERIMENT

In 30 minutes, the readings on the thermometer placed in the shortening changed very little, while the temperature inside the empty cup decreased rapidly. After 24 hours, both read the same.

WHY?

Heat energy moves from a warmer place to a colder place. When heat energy moves away from an object, that object becomes cooler. Its temperature gets lower. **INSULATORS** are materials that slow down the transfer of heat energy. The shortening, like the fat layer under the skin of animals, acts as an insulator and this restricts the heat flow away from the warm inner body to the extremely cold air outside the body. The heat inside the shortening, like that in an animal's body, is lost, but because of the fat insulation, the loss is very slow. If enough time passes, the shortening finally freezes. Food consumed by animals provides energy that continually replaces the lost heat. In this way, a constant body temperature is maintained.

How do penguins keep their uninsulated feet and flippers from lowering their body temperature? A special system of blood vessels exists in the extremities of penguins. The arteries bringing warm blood to the feet and flippers are surrounded by veins taking cold blood away from the feet and flippers. The cold blood is warmed before it reaches the body, and the warm blood is cooled before reaching the feet.





PENGUINABILIA

<p>Skuas often work in pairs. One knocks over the adult penguin while another grabs the helpless chick.</p>	<p>A King Penguin chick can down more than 6 pounds of squid in one feeding.</p>
<p>Baby penguins are hungry all the time. Their parents must make many trips to the ocean each day to catch enough fish to feed them. At times, the chicks need 2 pounds of food per hour!</p>	<p>Penguin feathers are very small and tightly packed. There are more than 70 feathers per square inch. The feathers overlap and are coated with oil.</p>
<p>A penguin keeps its feathers tight to its body to keep in the heat. When the weather turns warmer, they can fluff up their feathers to let some of the heat escape.</p>	<p>Only four out of ten Emperor chicks survive to maturity. The others die from starvation, cold, disease or predators.</p>
<p>Emperors dive as far as 1,250 feet and can stay underwater for 18 minutes.</p>	<p>Penguins spend more than half of the year in water.</p>
<p>Penguins have solid heavy bones. This helps to increase the weight of their bodies, making it easier for them to swim and dive.</p>	<p>Baby penguins are covered with soft, downy feathers. At about six weeks they start to molt.</p>
<p>The small wings of penguins are stiff like paddles. They push water better and provide more swimming power.</p>	<p>Scientists estimate that just one colony of Adélie penguins eat 9,000 tons of food in one day. That's approximately equal to the catch of 70 modern trawlers.</p>
<p>Penguins depend completely on the ocean for life. Even though all penguins are totally protected by law, danger comes in other ways, like oil spills; overharvesting of fish, krill, and squid; and garbage and chemicals dumped into the sea.</p>	<p>Some species of penguins produce two eggs and will raise two chicks. The Macaroni penguin's first egg does not hatch, leaving the larger, second-laid egg to produce the single chick.</p>

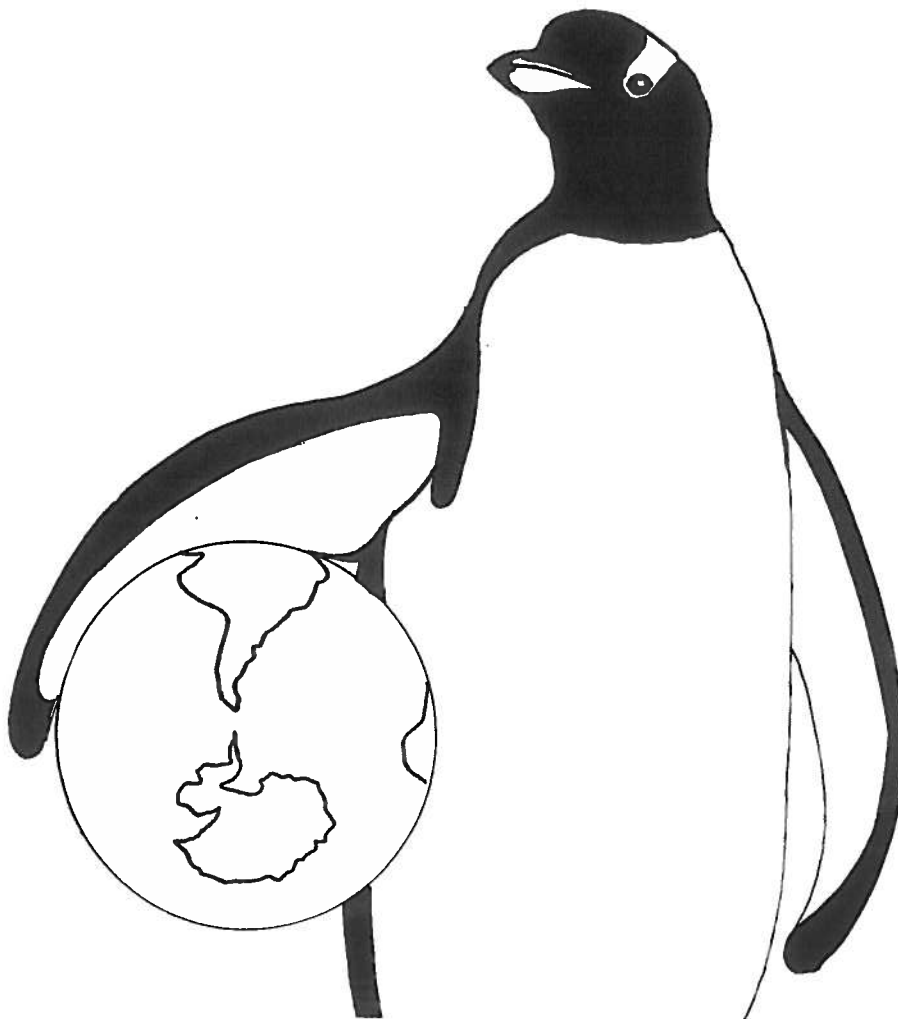




NEWS FLASH! - - - - DOGS: KEEP OUT!

For years scientists and explorers have brought dogs to Antarctica as pets or sled dogs. No more. In January, 1998, dogs were banned from the continent. The reason: they sometimes harm seals and penguins. The dog ban is part of a new agreement between 26 nations. The agreement declares Antarctica a global wilderness preserve. It imposes strict new rules to protect the environment and wildlife of earth's coldest, most remote continent. Under the rules, scientific outposts in Antarctica must clean their garbage dumps, visiting tourist ships may not dump sewage at sea, and mining and oil drilling are banned for 50 years.

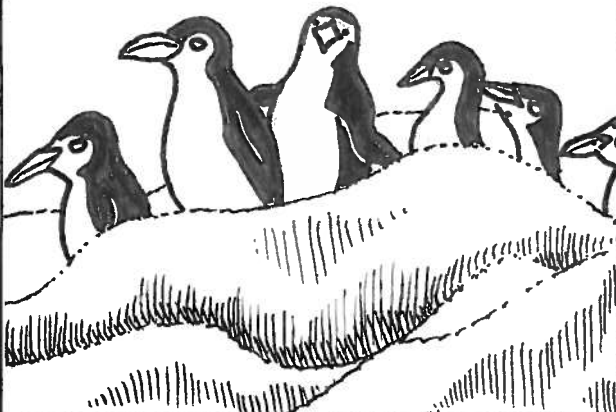
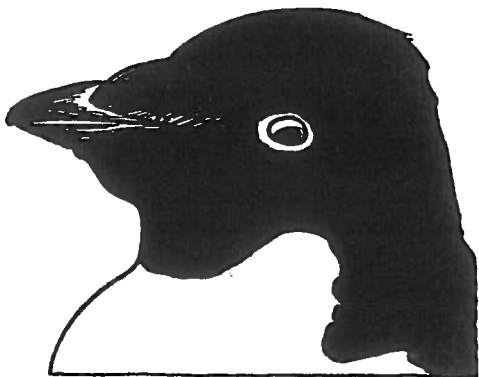
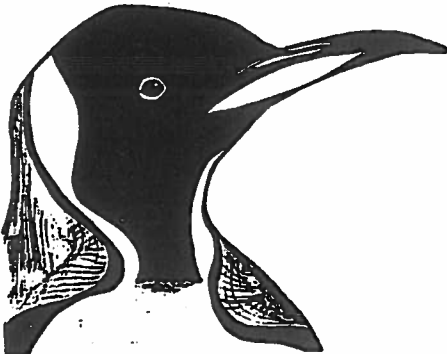
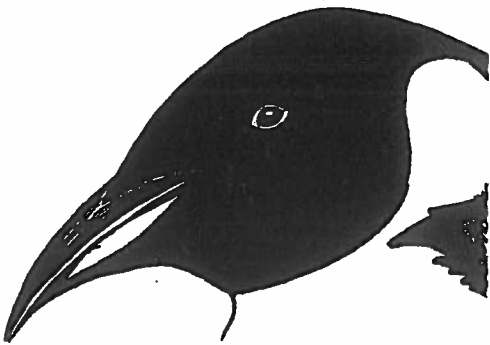
Prepare a poster that could be used to explain this new agreement to scientists, explorers, and visitors. Be sure to include brief facts. Add penguins, seals, and a map of Antarctica. Make it attractive and colorful.

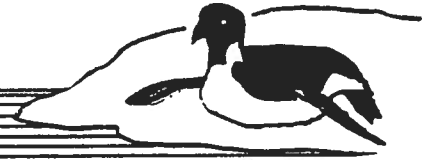
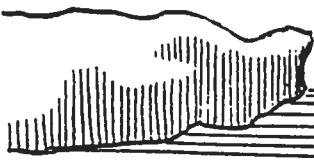




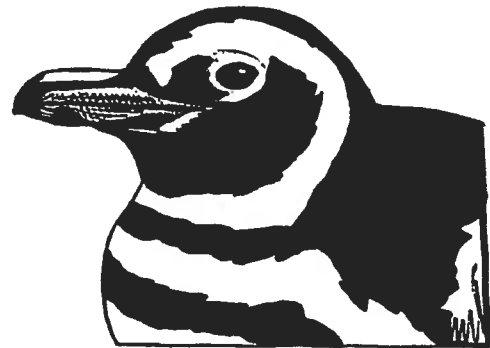
PENGUIN PARADE BOOKLET

There are at least 17 different penguin species (scientists disagree over the exact number) and each penguin species has a unique head marking. Duplicate these booklet pages on white construction paper. Color the penguin picture to match. Cut the pages on the lines and staple the booklet together with the cover. Additional penguins may be added as you learn about more species.

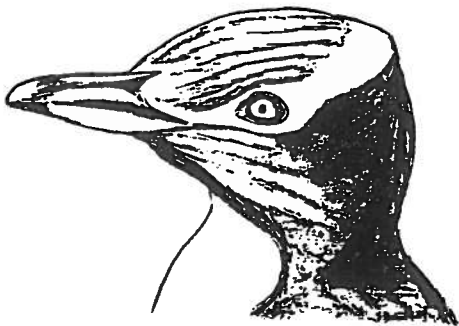
<p>PENGUIN PARADE BOOKLET</p> 	 <p>I am an Adélie penguin. My head is black. I have a white ring around my black eyes. My beak is black.</p>
 <p>I am a King penguin. I have an orange stripe on my black beak. My eyes are brown. My head is black and my neck patches are orange.</p>	 <p>I am an Emperor penguin. My head and eyes are black. I have a yellow and orange patch by each ear. I have an orange stripe on my black beak.</p>



I am a Macaroni penguin. My side feathers are yellow. My head is black. I have orange eyes and an orange beak.



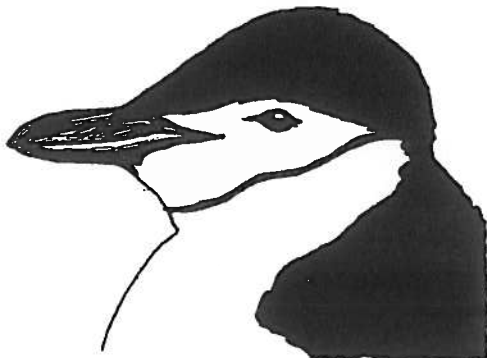
I am a Magellanic penguin. I have an orange ring around my black eyes and a white band under my chin that extends up over my eyes. There is an orange spot between my beak and eyes.



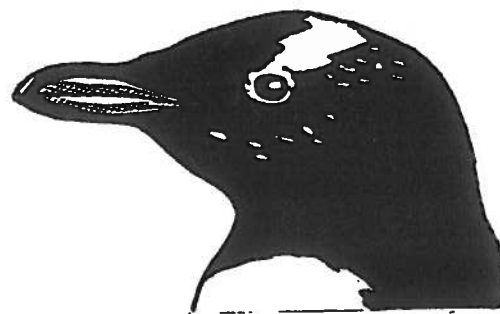
I am a Yellow-eyed penguin. I am the only penguin with amber-yellow eyes and a yellow band that encircles my crown.



I am a Rockhopper penguin. I have red eyes. Yellow feathers stick out from the sides of my head. I have short black feathers on my head. My beak is orange.

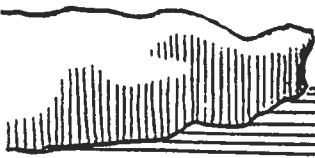


I am a Chinstrap penguin. The top of my head and beak are black. My face and throat are white with a narrow black line that looks like a chinstrap.



I am a Gentoo penguin. I have black eyes with a thin circle of white around my eyes. The patch above my eye is white and extends over the top of my head. My beak is orange on the side and black on top.





MAKING TRACKS ON AN ICE FLOE

Summer in the Antarctic is a short time of plenty. The return of the sun to the southern hemisphere covers much of the continent in 24-hour daylight. The sea ice gradually retreats, and every available inch of space is quickly grabbed by nesting penguins, gulls, and seals.

There are many names for different ice formations that are unique to each Antarctic season. Find information on the following names for ice in Antarctica:

FAST ICE
PACK ICE
ICE FLOES
SHELF ICE

TABULAR ICEBERGS
GLACIER
GLACIAL ICEBERG
ICECAP



Write a description of each ice term and draw an illustration to show the formation. Include penguin species that may be on the different types of ice and enemies lurking nearby.

1. FAST ICE

2. PACK ICE

3. ICE FLOES

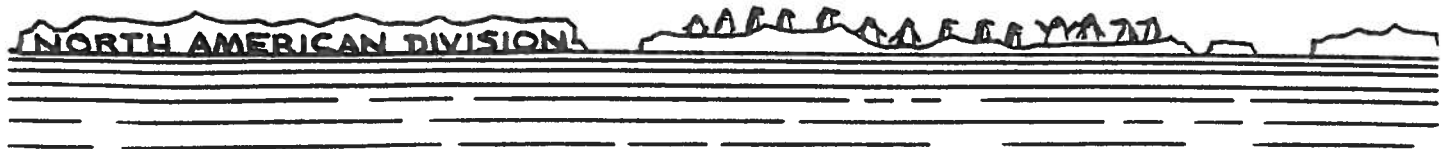
4. SHELF ICE

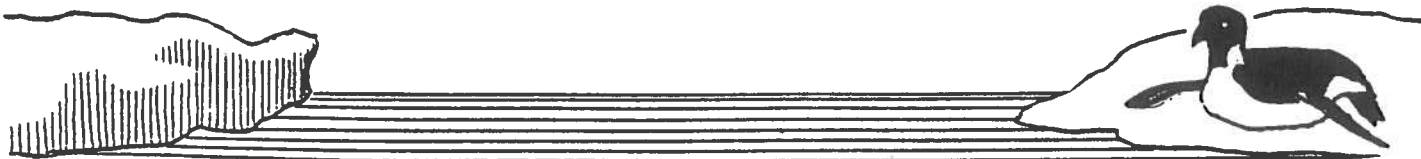
5. TABULAR ICEBERGS

6. GLACIER

7. GLACIAL ICEBERG

8. ICECAP

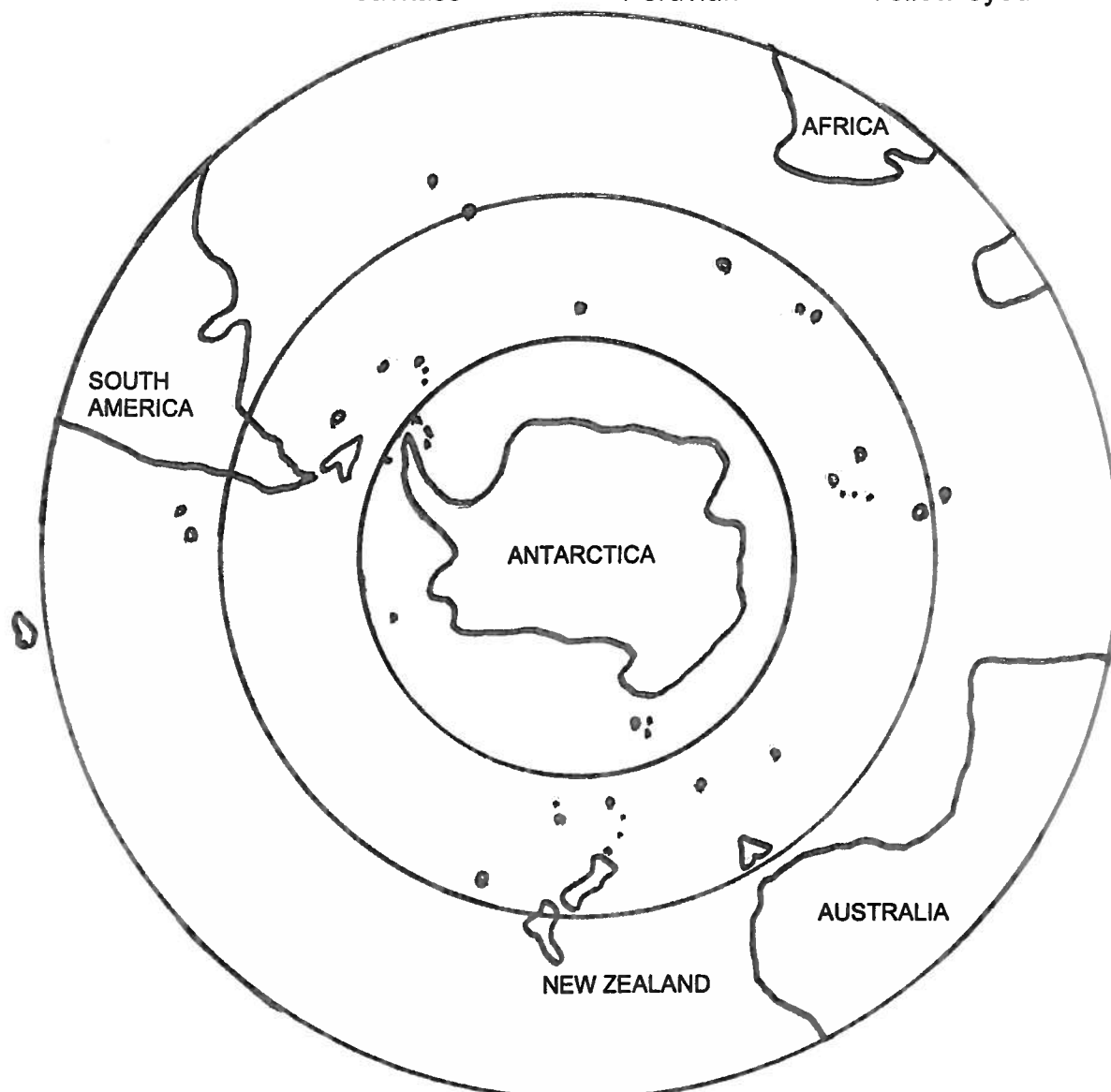


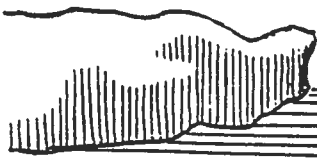


PENGUIN PRECINCTS

Listed below are 20 kinds of penguins. Locate the breeding areas of each kind and label their "precincts" on the map.

- | | | | |
|---------------|-----------|-------------|---------------|
| Adélie | Fiordland | King | Rockhopper |
| Blackfooted | Galapagos | Little Blue | Royal |
| Chinstrap | Gentoo | Macaroni | Snare Island |
| Emperor | Humboldt | Magellanic | White-flipped |
| Erect crested | Jackass | Peruvian | Yellow-eyed |

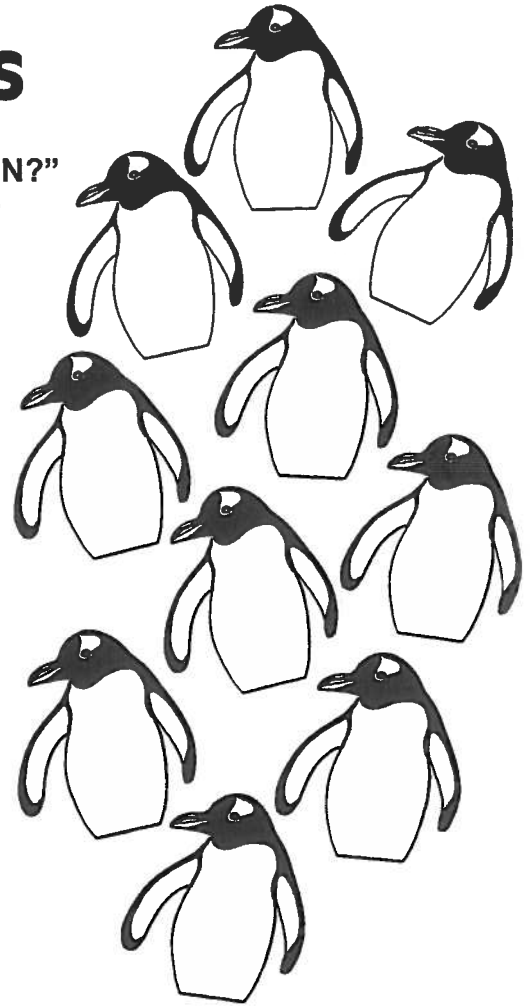




PENGUIN SONGS

“HAVE YOU EVER SEEN A PENGUIN?” (Tune: “Have You Ever Seen a Lassie?”)

Have you ever seen a penguin, a penguin, a penguin?
Have you ever seen a Penguin swim this way and that?
Swim this way and that way and this way and that way?
Have you ever seen a penguin swim this way and that?
(Make swimming motions with arms.)
Repeat, substituting “slide” for “swim.”
(Make sliding motions with hands and feet.)
Repeat substituting “waddle” for “swim.”
(Take tiny little steps, swinging bodies right and left.)
Repeat, substituting “dress” for “swim.”
(Boys bow and girls curtsy.)



“TEN LITTLE PENGUINS” (Tune: “Ten Little Indians”)

Have children form a large circle. Number the children to ten as many times as needed so that everyone has a number. Have the children sing the song below. As his/her number is sung the child with the matching number “waddles five steps like a penguin” toward the middle of the circle and turns to face the outside of the circle. When their number is sung during the second verse, all “penguins” walk back to their original place in the circle.

One little, two little, three little penguins,
Four little, five little, six little penguins,
Seven little, eight little, nine little penguins,
Ten little penguin chicks.

Ten little, nine little, eight little penguins,
Seven little, six little, five little penguins,
Four little, three little, two little penguins,
One little penguin chick.

Courtesy of *Teacher Created Materials, Inc.*, Huntington Beach, CA. 1991.





THE NEST THE PENGUIN BUILT

Read "The House that Jack Built." (One version can be found in *Childcraft*, Vol. 1, pp. 58-59, World Book, Inc., 1987 edition.) Then read this penguin version.

This is the nest that the penguin built.

This is the egg
That lay in the nest that the penguin built.

This is the rookery,
That protects the egg
That lay in the nest that the penguin built.

This is the chick,
That was born in the rookery,
That protects the egg
That lay in the nest that the penguin built.

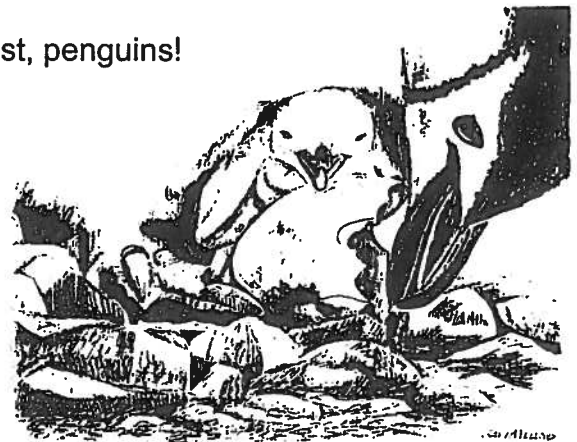
This is the fish,
That was eaten by the chick,
That was born in the rookery,
That protects the egg
That lay in the nest that the penguin built.

This is the sea,
That was the home of the fish,
That was eaten by the chick,
That was born in the rookery,
That protects the egg
That lay in the nest that the penguin built.

This is the seal,
That waits in the sea,
That was the home of the fish,
That was eaten by the chick,
That was born in the rookery,
That protects the egg
That lay in the nest that the penguin built.

This is the feather,
From the mouth of the seal,
That waits in the sea,
That was the home of the fish,
That was eaten by the chick,
That was born in the rookery,
That protects the egg
That lay in the nest that the penguin built.

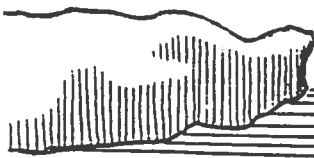
Swim fast, penguins!



USING THE POEM

Use the poem as a choral reading. Assign each phrase to a child or small group of children. Whenever the phrase appears, this child or group will read it. Everyone will read the last line together.

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POLAR CROSSWORD

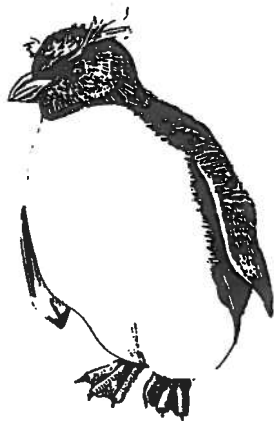
Directions: Use the clues on the other side of this page to solve the Polar Crossword.



POLAR CROSSWORD CLUES

ACROSS

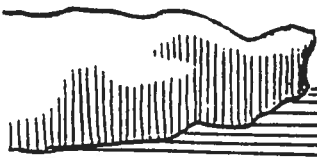
1. most southern pole of the earth
4. fifth largest continent
9. island covered with rocks patterned with copper carbonate
10. important landmark where Captain Scott built his overwintering hut on the lower slopes
11. chicks gather into these groups when they are a month old
14. eats more than 15 Adélie penguins a day
16. Captain Cook crossed the Atlantic in this tiny ship
17. large, thick, slow-moving mass of ice
18. description of penguins traveling slowly



DOWN

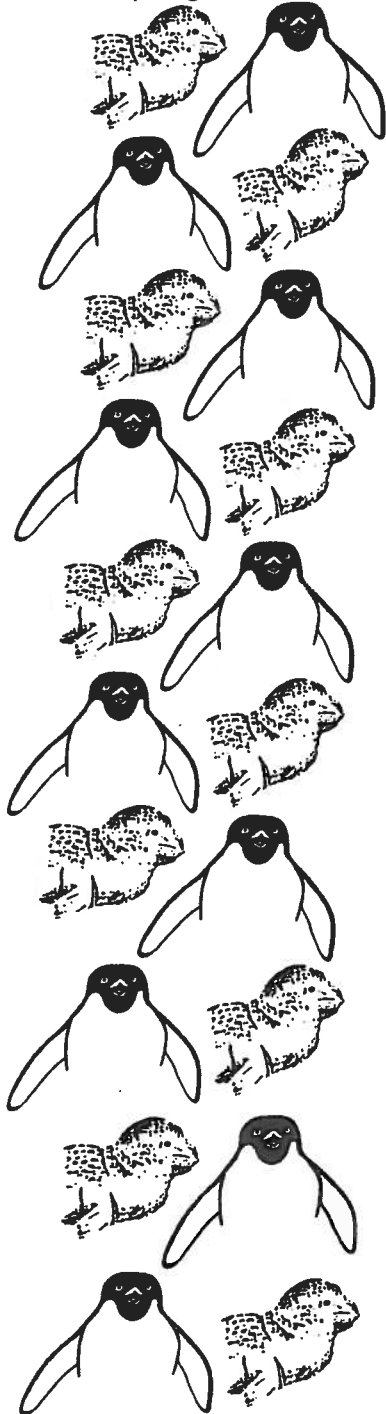
1. type of large sea gull
2. Antarctica survives six months of this condition
3. complex organism forming crusty patches on rocks
5. noisy, crowded places where eggs are incubated
6. favorite food of several species of penguins
7. help penguins launch themselves above the water's surface
8. species named for thin band of feathers
10. adults must gain weight before beginning this process
12. land mass surrounded by water
13. sea animals have a thick layer of this under their skin
15. species of penguin noted for their friendliness





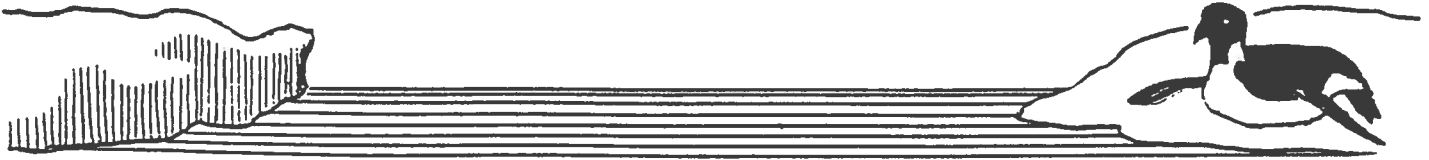
TRUE OR FALSE?

Cut out the leopard seals and penguins. If the sentence is true or could really happen, glue a penguin behind it. If it is not true or could not happen, glue a leopard seal behind it.



1. Penguins have no enemies.
2. Penguins live at the North Pole.
3. Baby penguins are called chicks.
4. Penguins molt a few feathers all the time.
5. A penguin's biggest problem is being too cold.
6. Penguins build nests in a rookery.
7. Penguins have special glands that remove salt from the water they drink.
8. Penguins can lay eggs.
9. Penguins have very small feathers.
10. Parent penguins and chicks find each other by the sounds of their voices.





COOL NONFICTION ABOUT COOL BIRDS

These titles are perfectly suited for your study of **Life in the Freezer**.

A Natural History of the Antarctic, Alastair Fothergill, Sterling Publishing Co., Inc., NY, NY, 1995.

Antarctic Wildlife, Ben Osborne, Mallard Press, NY, NY, 1989.

A Penguin Year, Susan Bonners, Dell Publishing, NY, NY, 1981.

Birds that Can't Fly, Harry J. Baerg, Review and Herald Pub. Assoc., Washington, DC, 1983.

Life Story: Penguin, Claire Robinson, Troll Associates.

Looking at Penguins, Dorothy Hinshaw Patent, Holiday House, NY, NY, 1993.

Penguins and their Chicks, Masahiro Aoyanagi, Wayland Publishers Ltd., England, 1976.

Penguins at Home: Gentoos of Antarctica, Bruce McMillan, Houghton Mifflin Co., Boston, MA, 1993.

Penguins, Puffins, and Auks, Art Wolfe and William Ashworth, Crown Publishers, Inc., NY, NY, 1993.

Penguins, Roger Tory Peterson, Houghton Mifflin, Boston, MA, 1979.

Penguins, Wolfgang Kaehler, Chronicle Books, San Francisco, CA, 1989.

Pomona, the Birth of a Penguin, Catherine Paladino, Moffa Press, USA, 1991.

See How They Grow: Penguin, Mary Ling, Dorling Kindersley, Inc.

The Emperor Penguins, Kazue Mizumura, Thomas Y. Crowell Co., NY, NY, 1969.

The World of the Penguin, Jonathan Chester, Greystone Books, San Francisco, CA, 1992.





MAKING TRACKS ON AN ICE FLOE

Summer in the Antarctic is a short time of plenty. The return of the sun to the southern hemisphere covers much of the continent in 24-hour daylight. The sea ice gradually retreats, and every available inch of space is quickly grabbed by nesting penguins, gulls, and seals.

There are many names for different ice formations that are unique to each Antarctic season. Find information on the following names for ice in Antarctica:



- FAST ICE
- PACK ICE
- ICE FLOES
- SHELF ICE
- TABULAR ICEBERGS
- GLACIER
- GLACIAL ICEBERG
- ICECAP

Write a description of each ice term and draw an illustration to show the formation. Include penguin species that may be on the different types of ice and enemies lurking nearby.

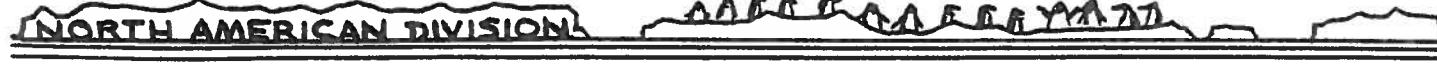
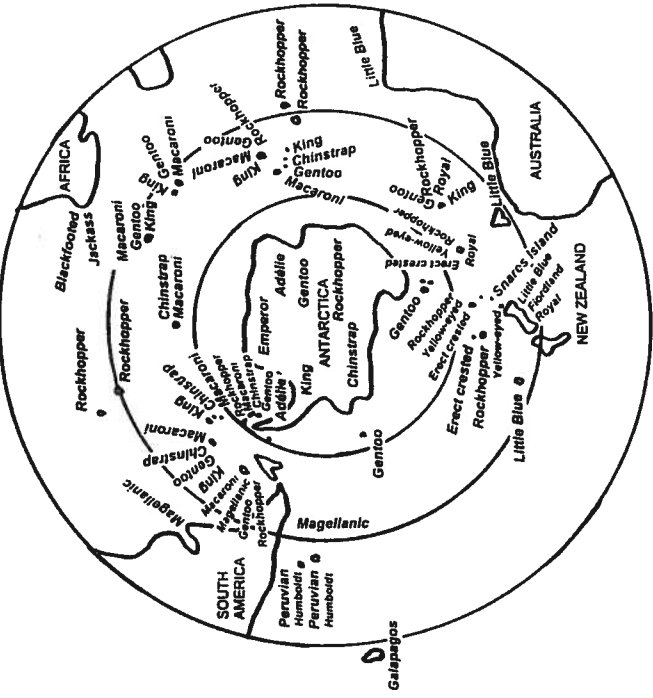
1. FAST ICE Thin ice that is frozen fast to the land. It forms a solid sheet around most of the continent.
2. PACK ICE In summer, most of the fast ice starts to break up and becomes pack ice.
3. ICE FLOES Chunks of icebergs that break up are slowly pushed away from the coast by the wind to form a ring around the whole continent.
4. SHELF ICE Snow falls on top of fast ice and builds up into this thick, permanent sheet of ice over a mile thick. Shelf ice is attached to the continent.
5. TABULAR ICEBERGS Flat-topped chunks of ice found only in Antarctic seas. Some are huge, looking more like islands than pieces of ice.
6. GLACIER A huge sheet of moving ice on land. A glacier forms when layers of snow pile up on top of each other for many, many years.
7. GLACIAL ICEBERG A chunk of ice that breaks off from a glacier and falls into the ocean. Icebergs have more ice under the water than above the surface.
8. ICECAP A mass of glacial ice that spreads slowly out in all directions from a center.

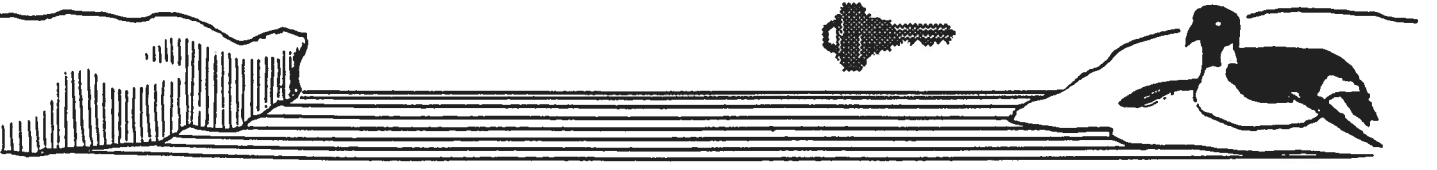


PENGUIN PRECINCTS

Listed below are 20 kinds of penguins. Locate the breeding areas of each kind and label their 'precincts' on the map.

- | | | | |
|---------------|-----------|-------------|---------------|
| Adélie | Fiordland | King | Rockhopper |
| Blackfooted | Galapagos | Little Blue | Royal |
| Chinstrap | Gentoo | Macaroni | Snares Island |
| Emperor | Humboldt | Magellanic | White-flipped |
| Erect crested | Jackass | Peruvian | Yellow-eyed |





POLAR CROSSWORD

Directions: Use the clues on the other side of this page to solve the Polar Crossword.

1 S O U T H P O L E
 2 D
 3 L
 4 A N T A R C T I C A
 5 R O O K E R I L L A N D
 6 K
 7 F L I L L
 8 S E N S E
 9 H O R S E S H O E
 10 M O U N T E R E B U S
 11 C R E C H E S
 12 O N N I T I O N
 13 B
 14 L E O P A R D S E A L
 15 D E S S O L U T I O N
 16 R E S S O L U T I O N
 17 G L A C I E R
 18 W A D D L I N G



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Cut out the leopard seals and penguins. If the sentence is true or could really happen, glue a penguin behind it. If it is not true or could not happen, glue a leopard seal behind it.

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