### Genre Comprehension Skills and Strategy Text Features

<table>
<thead>
<tr>
<th>Genre</th>
<th>Comprehension Skills and Strategy</th>
<th>Text Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expository nonfiction</td>
<td>• Main Idea and Details</td>
<td>• Captions</td>
</tr>
<tr>
<td></td>
<td>• Compare and Contrast</td>
<td>• Labels</td>
</tr>
<tr>
<td></td>
<td>• Monitor and Clarify</td>
<td>• Heads</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>• Glossary</td>
</tr>
</tbody>
</table>

Suggested levels for Guided Reading, DRA™, Lexile®, and Reading Recovery™ are provided in the Pearson Scott Foresman Leveling Guide.

All About Penguins

by Morgan Lloyd
1. What is the main idea of this book? List four details that support the main idea.

Main Idea
Detail

2. What confused you about penguins as you read this book? What did you do about it?

3. The word *crest* has several meanings other than the one used in this book. Use a dictionary to find the other meanings. Write a sentence using the word with one of these other meanings.

4. What kind of mineral is mentioned on page 12 in relation to Magellanic penguins? What does it do?

Word count: 1,590
The Southern Hemisphere is the natural home of the world’s penguins. Penguins live on the Galápagos Islands and in Australia, New Zealand, Africa, South America, and the islands that surround Antarctica. They also live on Antarctica itself.

It is almost impossible for life to exist in Antarctica. The Sun never rises during the Antarctic winter.

Antarctica in the winter is the coldest place on Earth. The temperature dips way below freezing. Despite that, some living things make Antarctica home, including the emperor penguin. The emperor penguin lives and thrives in Antarctica!

The continent of Antarctica is one of Earth’s most isolated places.
Why the black suit?

Penguins are dark on the back and white on the front. This coloring protects them while swimming.

Predators swimming on the ocean surface see black when they look down into the dark water. Penguins’ dark backs help them blend in with that black color. Predators swimming deep in the water see white when they look up into the sky and sunlight. Penguins’ light bellies help them blend in with that white color.

Speedy Penguins

Most penguins can swim about fifteen miles per hour. Some of the larger ones can swim even faster. By swimming as fast as they do, penguins are able to leap six feet out of the water!

Special Wings for Swimming

Unlike flying birds, penguins do not have light bones or flexible wings. That is one of the main reasons why they cannot fly. Penguins’ bones are dense and strong. Their wings, which are usually called flippers, are made for swimming. Penguins’ flippers are very hard and strong. They do not bend. This lets penguins swim faster through the water.

Penguin Predators

Penguins have plenty of predators to watch out for. Sea lions, leopard seals, and orca whales all hunt and eat adult penguins. Seagulls and other sea birds will also prey on penguin chicks. In some places where humans live nearby, penguin chicks are threatened by weasels, rats, cats, and dogs.
Emperor Penguins

Emperor penguins stand about three feet tall, making them the largest penguins. They have yellow and orange ear patches. Emperor penguins live in Antarctica during the winter. Most amazingly, this is the time they choose to **incubate** their eggs!

The female emperor penguin lays a single egg. As soon as the egg is laid, the female passes it to her mate. She then goes out to sea in search of food. Meanwhile, the male emperor penguin spends two months balancing the egg on his feet. He warms the egg with his **brood patch**, which is a warm patch of featherless skin.

An emperor penguin’s feathers are made to trap heat. The outer part blocks the wind and water. The inner fluffy part is called **down**. The down traps air close to the penguin, keeping the penguin warm.

Penguins have a special oil gland near their tails. They use their beaks to spread oil made by the gland over their outer feathers. The oil forms a seal that prevents the penguins’ feathers from getting wet.

A New Coat

Over time a penguin’s feathers become old and damaged. So once a year, penguins **molt** and grow a new set of feathers. It doesn’t take long for the new feathers to grow in. But while they are growing in, the penguins must not get wet, or they could freeze to death.
Emperor penguins’ flippers and beaks are smaller than those of other penguins. Because those body parts are smaller, emperor penguins lose less body heat.

Emperor penguins breathe very cold Antarctic air. To make sure they don’t lose too much heat while they are breathing, emperor penguins have a special network of passages inside their beaks. These passages allow them to save as much as eighty percent of the heat they would otherwise lose with each breath!

**Keeping Warm**

Emperor penguins also have a layer of fat called **blubber**. The blubber provides energy for the penguins when they cannot eat. It also helps keep the penguins warm.

**Cold feet?**

Emperor penguins reduce heat loss through their feet by standing on their heels. This keeps the rest of the foot from touching the cold ice.

When the temperature is -68°F, it helps to stick together. Male emperor penguins huddle to help conserve heat. The temperature in the middle of an emperor penguin huddle can be 95°F!

Of course, some penguins must stand on the outside of the huddle. So what do they do to stay warm? They rotate. The penguins on the outside gradually push their way into the middle of the huddle. This way, each penguin gets a chance to become warmed.

A group of young emperor penguins warming themselves in a huddle
Adelie Penguins

Adelie penguins grow to about two feet in height. Like emperor penguins, Adelie penguins lay their eggs and raise their young in Antarctica. However, they do not live in Antarctica year-round.

Adelie penguins build their nests on rocky beaches. They build their nests out of pebbles and lay two eggs. Both parents take turns keeping the eggs warm and feeding the chicks when they hatch.

What’s a rookery?

A rookery is a colony of birds or other animals who have come together to nest and raise young. An Adelie rookery may have hundreds of birds nesting in one area.

Penguins’ beaks have different shapes based on what they hunt and eat. The emperor penguin’s beak is long and thin for catching fish. The Adelie penguin’s beak is short and stubby for catching krill. All penguin tongues have tiny barbs or spines for keeping a firm grip on prey they have caught.

A Crook in the Rookery!

Adelie penguins will give their mates pebbles when they return to the nest following a long absence. This often leads to fights, as Adelies tend to bring back pebbles that they have stolen from other nests. While an Adelie penguin is trying to deal with a threat on one side of the nest, another penguin may make off with a pebble from the other side!
Magellanic Penguins

Magellanic penguins live on the southern tip of South America and the islands around Antarctica. They build nests in small burrows and under bushes. Magellanic penguins feed mostly on squid, anchovies, and sardines.

One Tough Shell to Crack

The Magellanic penguin’s eggshell is very thick. Its hard outer part is made of calcium. Where does this calcium come from? Magellanic penguins chew on mollusk shells right before they lay their eggs. The calcium from the mollusk shells thickens the penguins’ eggshells. Because the eggshell is thicker, it better protects the baby penguin. It also helps prevent the egg from cracking on the hard ground.

Penguins’ bodies trap heat so well that they are at greater risk of overheating than of becoming too cold. The Magellanic penguin stays cool by shedding the feathers around its eyes in warmer weather. This lets more heat escape from the body and cools the penguin.

Penguins also cool off by panting, seeking shade, and lying down on the ice. By spreading their feathers and holding their flippers away from their body, they allow heat to escape and cooling air to move all around them.

Too Much Salt

A lot of sea salt enters penguins’ bodies. To make sure that it doesn’t harm them, penguins have special glands that remove salt from the food they eat.
King Penguins
The king penguin is the second largest penguin. It has patches of orange feathers near its ears. King penguins raise their young during the summer on the islands surrounding Antarctica. Like emperor penguins, king penguins balance their eggs on their feet instead of building nests.

Square in the Eyes
The pupil is the black opening in the center of the eye. The king penguin’s eyes have very unusual pupils. When they narrow, they take on the shape of a square!

Little Blue Penguin
The smallest penguin in the world is the little blue penguin. It is also known as the fairy penguin, the little penguin, or the blue penguin. The little blue penguin is only a foot tall. It nests along the southern coasts of Australia, New Zealand, and on the Australian island of Tasmania. Instead of making a nest, the little blue penguin digs a burrow in the ground. These burrows can be nearly two feet long. The female little blue penguin then lays two eggs in the burrow. Both the male and female little blue penguins help raise the chicks.

With their orange patches, king penguins are easy to spot.

The little blue penguin is unusually small for a penguin!
Crested Penguins

There are six different species of crested penguins. A crest is a tuft of feathers that sticks up from a bird’s head. Crested penguins live on the islands south of South America, Africa, Australia, and New Zealand. Crested penguins vary in size from one to two feet tall.

All crested penguins have similar nesting habits. They use their sharp claws to dig out a hole that they line with grass, pebbles, or sticks. The female crested penguin lays two eggs. Both the male and female crested penguins take turns guarding the eggs and caring for the chicks. Crested penguins eat krill, squid, and small fish.

So Many Penguins, So Little Time

From Adelies to Rockhoppers, we’ve now covered eleven different kinds of penguins. And that’s barely more than half the total number of penguin species worldwide!

Emperor penguins get a lot of attention for being the biggest penguins. They also live in the worst weather! Still, many other penguins are just as interesting as the emperor.

All penguins share lives that are tied to the sea and the Southern Hemisphere’s marine ecosystems. Penguins cannot fly. But as you have seen, they are able to get by just fine!
Now Try This

Cold Feet

Emperor penguins lose less heat to the ice by standing and walking on their heels. Using a metal cookie tray, a freezer, and a sheet of plastic wrap or wax paper, try this experiment to see how the emperor penguins do it!

One warning: Make sure to step onto the frozen cookie tray only after you have placed the plastic wrap or wax paper on it. Otherwise your feet might stick to the tray!

1. Put the cookie tray in the freezer for at least ten minutes. Take off your shoes and socks.

2. When you take the cookie tray out of the freezer, place it on the floor. Cover it with a sheet of plastic wrap or wax paper. Step on the cookie tray for a few seconds with your whole foot touching the tray.

3. Now balance on your heels. You may need to hold onto a wall for balance. Does standing on your heels make a difference? Share what you’ve learned with a friend!

Here’s How to Do It!

- Metal cookie tray
- Wax paper
- Safety scissors
Glossary

**blubber** *n.* a layer of fat that stores energy and provides insulation.

**brood patch** *n.* an area of skin with few or no feathers, which is warmed by blood vessels in order to incubate eggs.

**crest** *n.* a tuft of feathers sticking up from the head of a bird.

**down** *n.* fluffy inner feathers that trap air to keep birds warm.

**incubate** *v.* to keep eggs warm so they will hatch.

**molt** *v.* to lose old feathers or skin or shell.

**rookery** *n.* a place where large groups of birds or mammals gather to raise their young.

Reader Response

1. **What is the main idea of this book? List four details that support the main idea.**

2. **What confused you about penguins as you read this book? What did you do about it?**

3. **The word *crest* has several meanings other than the one used in this book. Use a dictionary to find the other meanings. Write a sentence using the word with one of these other meanings.**

4. **What kind of mineral is mentioned on page 12 in relation to Magellanic penguins? What does it do?**