

## COMMON CORE TALKING POINTS PENGUINS

### Grade 1

#### **Animals use their external parts to help them survive, grow and meet their needs.**

Have students observe the penguins.

Ask "What kind of animal is a penguin?"

*Explain that the penguin is a bird that is designed to fly through water rather than through the air.*

How do each of these help the penguin fly through the water; foot, feathers, wing, body shape?  
*webbed foot-swimming, feathers-waterproofing and insulation, wing-propulsion through dense liquid*

What do penguins eat? Show the skull. How does this beak help the penguin to catch fish?

*Elongated shape looks fish like, pointed tip, no teeth, but spiny projections in the mouth guide the fish down the penguins gullet. Because penguins have no teeth, they swallow the fish whole, head first.*

#### **Patterns in behavior of parents and offspring help offspring to survive.**

*Chicks are helpless when they hatch. Parents and chick imprint on each other's voices.*

Why do you think it is important for parents to recognize their own chick?

*Penguin chicks require a lot of care. They cannot feed themselves. They grow rapidly (reach adult size in 6 - 8 weeks) and it takes both parents feeding their own chick for the chick to survive.*

*Both parents take turns sitting on the nest and feeding the chick.*

#### **Young animals are like their parents, but also may be different from their parents.**

Show students the penguin egg. Show students down feathers if any are in the bag.

*Explain that chicks are covered in down when they hatch so even though the chick has all of the same body parts as the parents, albeit in miniature, they look very different from their parents. Chicks with down feathers cannot swim in water. They will get their waterproof feathers at 6 to 8 weeks of age.*

Look for juvenile penguins in the exhibit. Ask students if they notice any differences between the juvenile penguins and the adult penguins. Show students the adult feathers.

*Penguins go through two molts before they have the same striping and coloration as the adults. These juvenile penguins are not allowed to live with their parents.*

### Grade 2

#### **Life is diverse in any given habitat.**

What does their habitat look like? Where do penguins live?

*oceans and shorelines*

What kinds of food can penguins find in the water?

*fish, krill, squid*

What animals eat penguins?

*Sea Lions, Orcas, Leopard Seals*

Are there other animals that share the penguins's habitat?

*Whales, sharks, all kinds of fish, crustaceans, birds, reptiles, plants and man etc.*

### Grade 3

**All animals have traits inherited from parents, but variation exists within that species.**

Do you look exactly like your parents or are there some differences?

Do penguins look mostly alike or are there some differences?

*Students may note some differences in markings across the chest area. Some penguins may be a little bigger than others.*

**Animal traits can be influenced by the environment.**

Have you ever spent a really long time swimming in cold water? What was it like?

What do animals need to be able to spend most of their time in cold water?

*flippers, webbed feet, a way to stay warm, a way to hold your breath or breathe underwater, a way to see, a way to find and capture food, camouflage (bring up the importance of counter shading).*

What do penguins need to be able to walk and nest on land?

*feet, a way to breathe air, shelter (point out burrows) materials to build a nest.*

**Animals form groups that help them to survive.**

Do you feel safer if you are by yourself or with other people?

Penguins live in large colonies on land and tend to swim in a large group. Why would this help their chances to survive?

**Variation within a species can provide advantages in surviving, finding mates and reproducing.**

If you live in a large group and look a lot alike, how do you find your mate? Your chick?

*No two penguins sound exactly the same. They use different calls and sounds, to find their mates and to identify their chicks. Penguins mate for life and will only feed their own chicks.*

**In a particular habitat, some animals survive well, some survive less well and some cannot survive at all.**

Could penguins survive living on a mountain top? Why not? Could they survive living in a desert? Could lions live in the penguin's habitat?

What determines how well an animal survives in a habitat?

**When an environment changes, the types of animals that live there may change.**

What could happen to the penguin if the oceans warm and the cold water currents that carry their food supply move far away from the penguin's nesting grounds?

When an environment changes, becomes hotter, colder, wetter, drier, how does that effect the plants and animals that live in that environment?

What could happen to the animal's food, shelter and water?

Grade 4

**Plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction**

How does the penguin's beak help determine what he can eat and how does it help him to eat?

*Shape of beak, point at tip, spiny structures on tongue and roof of mouth that cause the fish to slip down the gullet.*

Examine the penguin's foot. What features on the foot help him to survive in a marine environment?

*Webbing, scaly legs, short stubby legs.*

Compare the weight of the penguin femur with that of the snowy owl. Why does the heavier weight of penguin help it to survive?

**Animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.**

Watch and listen to the penguins. How do they communicate with other penguins? Are all of their sounds the same or are they different? What information might the penguins be communicating by using different sounds?

*Danger, call to their mates, identify their chicks*

*Penguins also use their sense of smell to identify their mates.*

How do penguins find their food?

*Eyesight, but they cannot see well in the dark .We don't know how they find food in the dark.*

## Grade 5

**Food is needed to carry on all the functions of life. Animals derive their food from a variety of sources. All food sources can be traced back to plants. Plants get their energy from the sun.**

What do penguins eat?(fish, krill, squid)

Food drives all life processes. Food provides the penguin with nutrition for growth, energy, warmth, and reproduction.

What do fish eat? (plants or smaller fish). Where do the marine plants (algae, kelp) come from?  
(Nutrients in the water, bi-products of decaying plants and animals, the sun)

What would happen to marine plants if the sun stopped shining? What would happen to the penguin?

What would happen to the entire food chain if the conditions in the ocean changed?