



What is it?

A Visit to the Antarctic

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Look at the following pictures and try to determine what they are. Fill in these two boxes on the worksheet;

I think this is a picture of:

Guess

If I could see the whole picture I think it would look like this:

Sketch









Let's see how you did...

1.

Penguin



2.

Seal

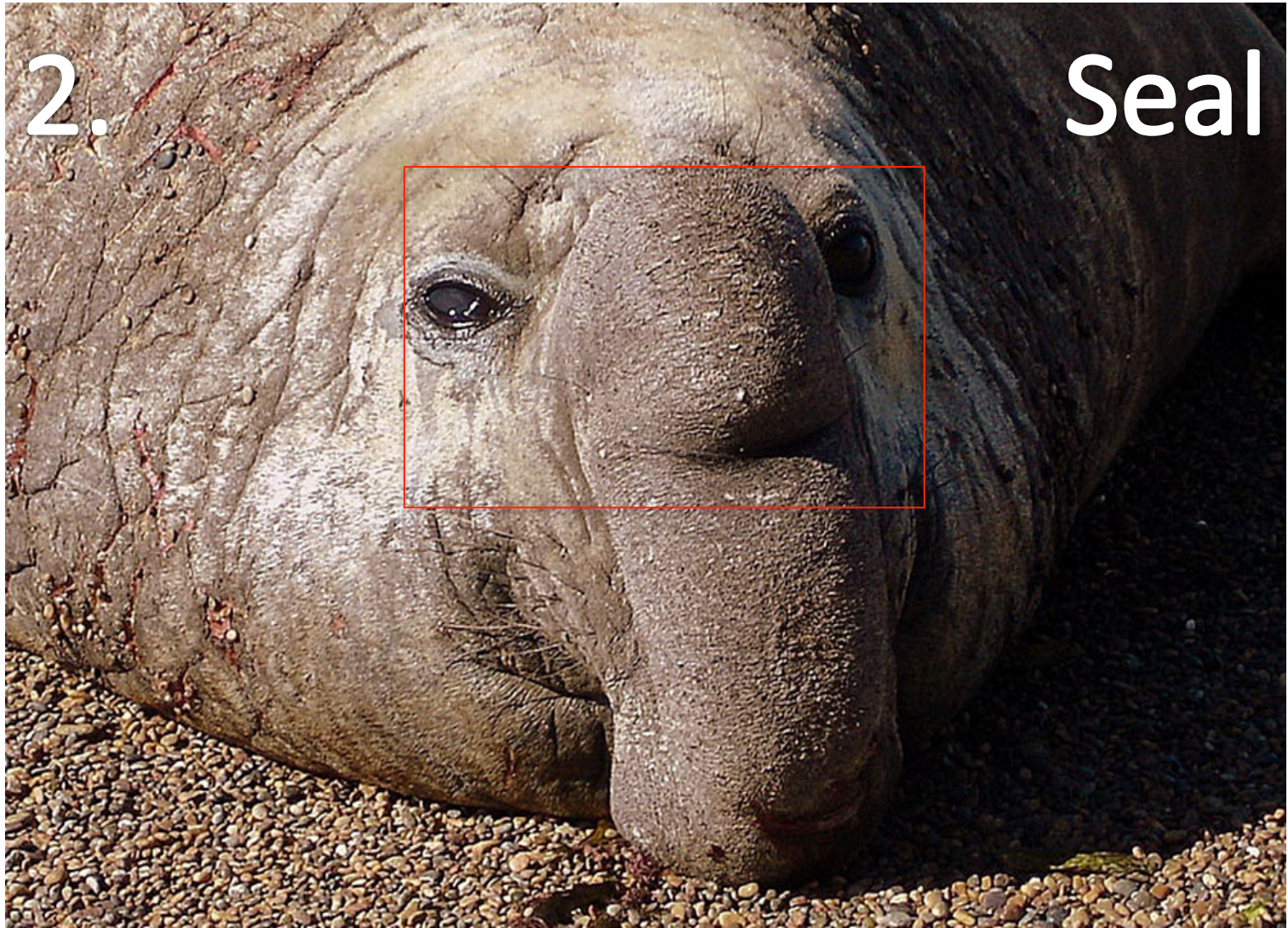


Image from: trongotours.com

3.

Seal

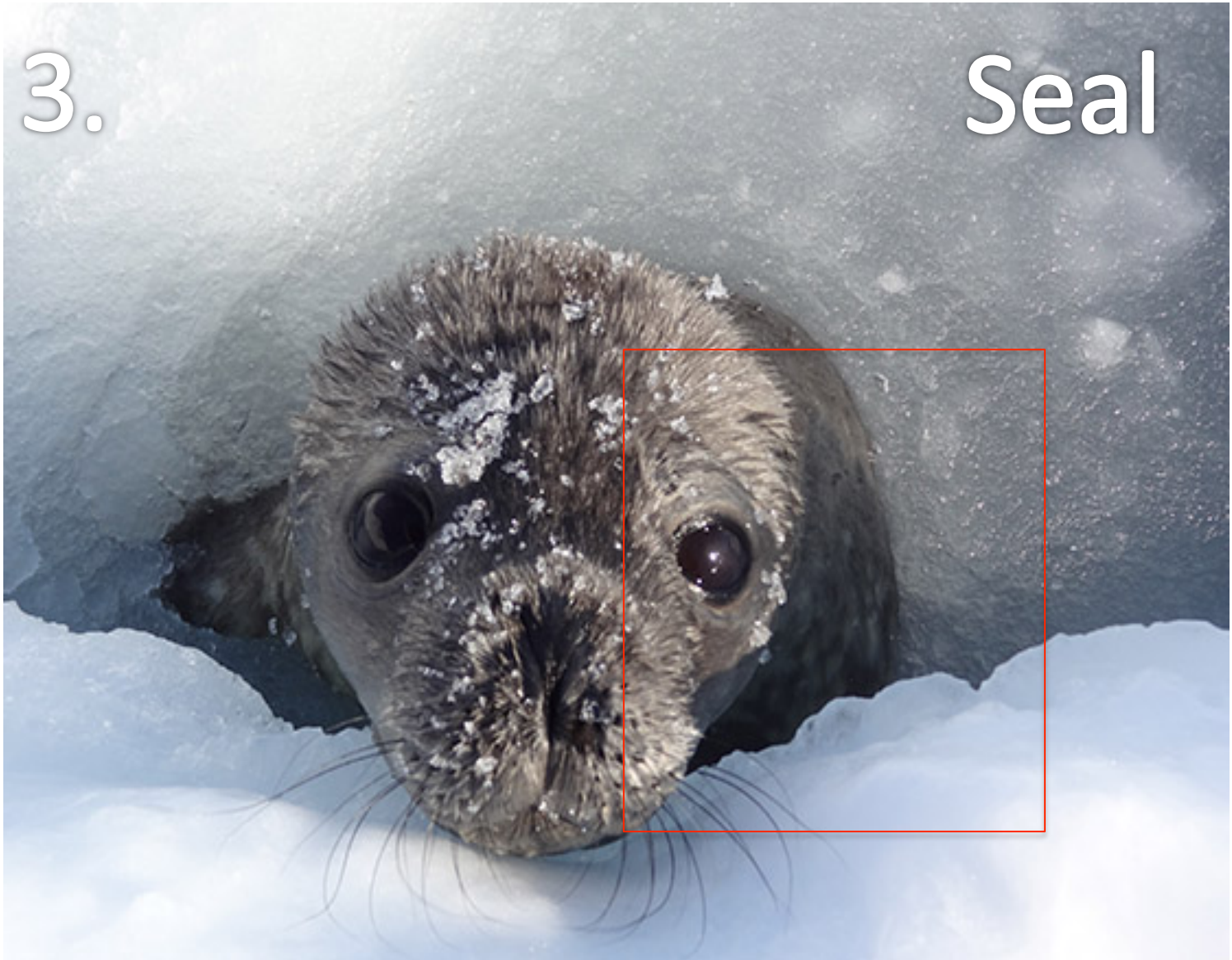
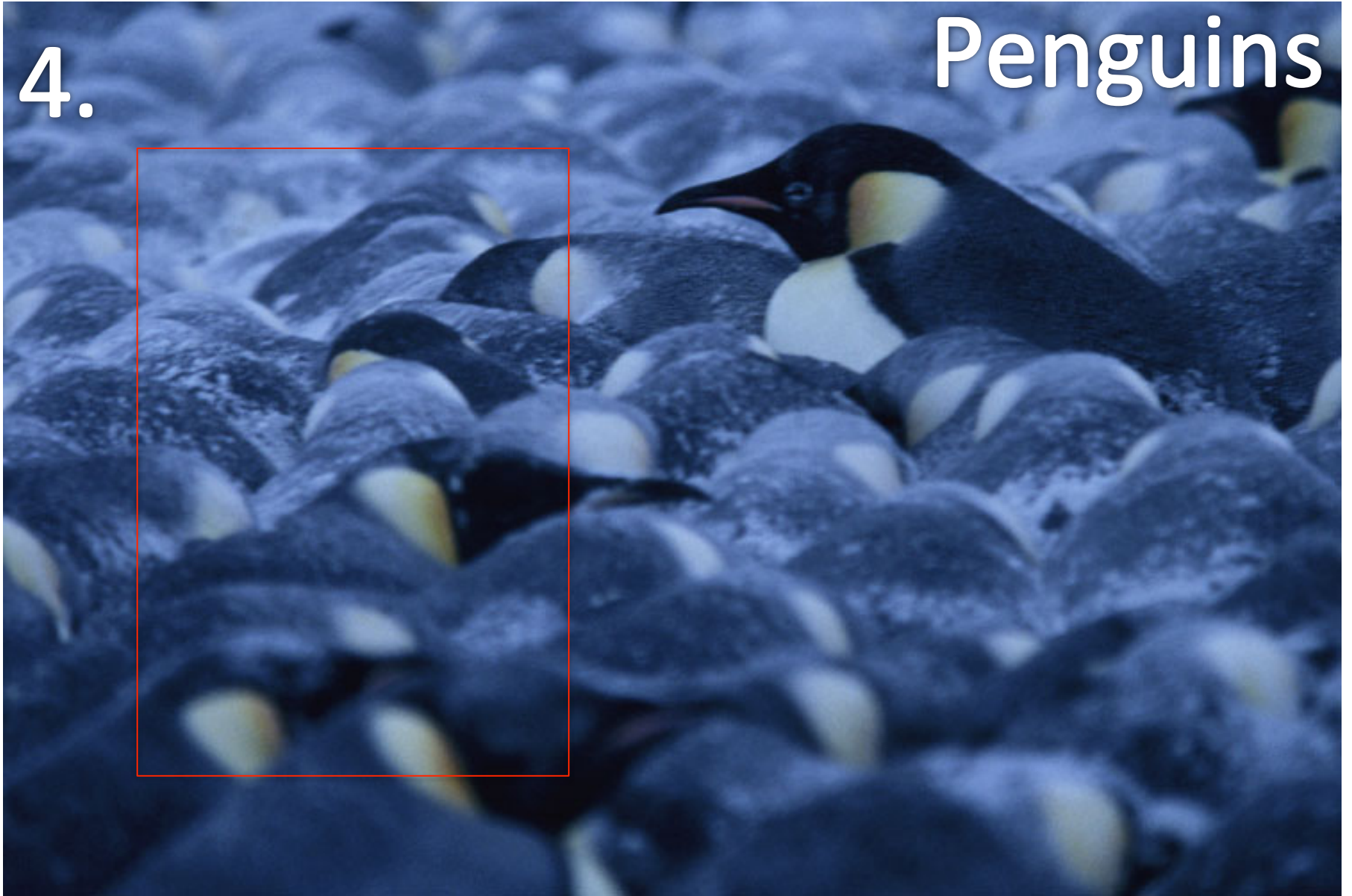


Image from: <http://greenandgold.uaa.alaska.edu>

4.

Penguins



Introduction to Field Guides

- Used to identify plants, animals, even constellations.
- Specific to a certain region.
- Gives descriptive information that helps you identify an organism.

Let's take a look at these simple field guides.

Use the field guide to identify the seals and penguins we just saw.

- Claim
 - What type of seal or penguin do you think it is?
- Evidence
 - What data from the field guide helped you decide this?
- Reasoning
 - Connect the evidence to the claim, sum it up.

*Also, as you are researching if you find evidence of adaptations that any of these animals have for survival in the Antarctica list them in the appropriate box.



Let's take a look at your results:



Chinstrap penguins

Scientific name: *Pygoscelis antarctica*

Size: grow to 2-2 1/2 feet tall and weigh around 10 pounds.

Color: The top of a chinstrap's head is black and the face is white, with a stripe of black extending under the chin. They are named for this narrow black band under their heads

Diet: Feed mainly on krill and fish and are considered near-shore feeders, feeding close to their breeding colonies.

Special adaptations: Chinstrap penguins on land often toboggan – laying on their stomachs, propelling themselves by their feet, and using their flippers. They climb using all four limbs and are able to jump large distances to reach footholds

<https://www.youtube.com/watch?v=9CbP9CAQCgY> 6 min

Let's take a look at your results:



Elephant seals

Scientific name: *Mirounga leonina*

Size: 9-11 feet long, males can weigh over 5000 pounds

Color: White belly, gray and black back

Diet: Elephant seals migrate south to Antarctica, after breeding, to feed on squid and fish at the edge of the sea-ice.

Special adaptations: Southern elephant seals are named after the large proboscis (nose) of the adult males, which is used to make loud roaring sounds, especially during the mating season. They are big and cumbersome on land, but are superb swimmers and divers.

Elephant seals have also adapted to store extra blood in their bodies so that when they go on long deep dives they will have plenty of oxygen.

Source: <http://www.antarctica.gov.au/> Photos; Jeremy Smith, Troy Metcalfe)

<https://www.youtube.com/watch?v=HbHUfo7L1v4> 3 min

Let's take a look at your results:



Weddell seals

Scientific name: *Leptonychotes weddellii*

Size: 9-12 feet long, 900 pounds, small head compared to body

Color: White belly, gray and black back

Diet: fish, squid, octopus and shrimp. They are very good divers, remaining under water for up to 45 minutes and diving very deep.

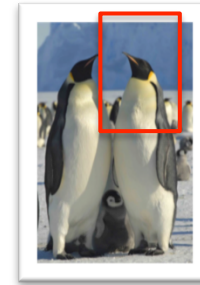
Special adaptations: Because Weddell seals breath air and live under the fast-ice they must breath through cracks and holes in the ice cover. There are many cracks in the ice during the warmer summer months. During winter these openings freeze over and Weddell seals use their teeth to open the new ice and so maintain holes through which to breathe. Since the seal must find its way to the breathing holes before it runs out of oxygen. Their powers of navigation are highly accurate as they must find these holes even during the darkness of winter.

Source: <http://www.antarctica.gov.au/> Photos; Glenn Browning



<https://www.youtube.com/watch?v=G4VZNa6AHkw> 2min

Let's take a look at your results:



Emperor penguins

Scientific name: *Aptenodytes forsteri*

Size: The emperor is the largest penguin species. They grow about 4 feet tall and can weigh about 85 pounds.

Color: black head, chin, and throat, with broad yellow patches on each side of the head.

Diet: They are excellent divers and can dive very deep to catch mostly fish, squid and krill.

Special adaptations: Emperor penguins are truly amazing birds. They not only survive the Antarctic winter, but they are capable of breeding during the worst weather conditions on earth. The emperor with excellent insulation in the form of several layers of scale-like feathers. They have a very small bill and flippers, which conserve heat. They are also very social creatures, and one of their survival mechanisms is an urge to huddle together to keep warm. They even take turns being on the edges, or coldest spots, of the huddle. This huddling instinct means that they do not defend any territory. The emperor penguin is the only species of penguin that is not territorial.

<https://www.youtube.com/watch?v=X-U8h1SCDbU> 2 min

What have we learned about the adaptations of animals in the Antarctic?

- Sharp teeth for opening holes in the ice.
- Can hold their breath and dive deep under the ice to catch food.
- Have lots of fat to keep them warm.
- Have special feathers to keep them warm.
- Can slide on the ice to move.
- Huddle together for warmth.
- Special teeth for straining krill.
- Countershading: dark backs, light bellies for camouflage in the sea.

Create-A-Critter

- Diagram/Model a new species scientists have just found in the Antarctic.
- In your design, pay attention to details such as:
 - Name it
 - Adaptations for survival in the Antarctic weather
 - What it eats and how it obtains food
 - Color & Size (you don't have to sculpt a full size model)
 - Special behaviors