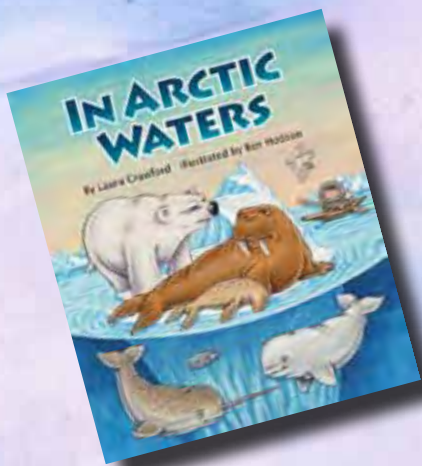


# Teaching Activity Guide

## Arctic Animals



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# How to Use This Activity Guide (General)

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There are a wide variety of activities that teach or supplement all curricular areas. The activities are easily adapted up or down depending on the age and abilities of the children involved. And, it is easy to pick and choose what is appropriate for your setting and the time involved. Most activities can be done with an individual child or a group of children.

**For teachers in the classroom:** We understand that time is at a premium and that, especially in the early grades, much time is spent teaching language arts. All Arbordale titles are specifically selected and developed to get children excited about learning other subjects (science, geography, social studies, math, etc.) while reading (or being read to). These activities are designed to be as comprehensive and cross-curricular as possible. If you are teaching sentence structure in writing, why not use sentences that teach science or social studies? We also know and understand that you must account for all activities done in the classroom. While each title is aligned to all of the state standards (both the text and the For Creative Minds), it would be nearly impossible to align all of these activities to each state's standards at each grade level. However, we do include some of the general wording of the CORE language arts and math standards, as well as some of the very general science or social studies standards. You'll find them listed as "objectives" in italics. You should be able to match these objectives with your state standards fairly easily.

**For homeschooling parents and teachers in private schools:** Use as above. Aren't you glad you don't have to worry about state standards?

**For parents/caregivers:** Two of the most important gifts you can give your child are the love of reading and the desire to learn. Those passions are instilled in your child long before he or she steps into a classroom. Many adults enjoy reading historical fiction novels . . . fun to read but also to learn (or remember) about historical events. Not only does Arbordale publish stories that are fun to read and that can be used as bedtime books or quiet "lap" reading books, but each story has non-fiction facts woven through the story or has some underlying educational component to sneak in "learning." Use the "For Creative Minds" section in the book itself and these activities to expand on your child's interest or curiosity in the subject. They are designed to introduce a subject so you don't need to be an expert (but you will probably look like one to your child!). Pick and choose the activities to help make learning fun!

**For librarians and bookstore employees; after-school program leaders; and zoo, aquarium, nature center, park & museum educators:** Whether reading a book for story time or using the book to supplement an educational program, feel free to use the activities in your programs. We have done the "hard part" for you.

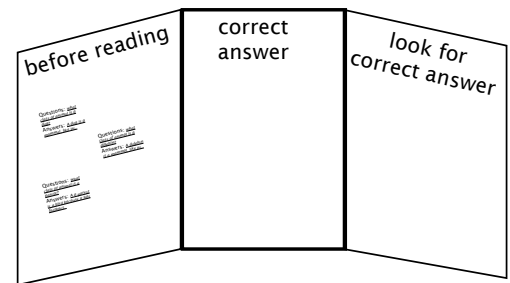
# What Do Children Already Know?

Young children are naturally inquisitive and are sponges for information. The whole purpose of this activity is to help children verify the information they know (or think they know) and to get them thinking “beyond the box” about a particular subject.

Before reading the book, ask the children what they know about the subject. A list of suggested questions is below. The children should write down their “answers” (or adults for them if the children are not yet writing) on the chart found in Appendix A, index cards, or post-it notes.

Their answers should be placed on a “before reading” panel. If doing this as a group, you could use a bulletin board or even a blackboard. If doing this with individual children, you can use a plain manila folder with the front cover the “before reading” panel. Either way, you will need two more panels or sections—one called “correct answer” and the other “look for correct answer.”

Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.



After reading the book, go back to the questions and answers and determine whether the children’s answers were correct or not.

If the answer was correct, move that card to the “correct answer” panel. If the answer was incorrect, go back to the book to find the correct information.

If the children have more questions that were not answered, they should look them up.

When an answer has been found and corrected, the card can be moved to the “correct answer” panel.

# Pre-Reading Questions

---

## General Arctic Questions

1. Where is the Arctic?
2. What's the climate in the Arctic?
3. Name some animals that live in the Arctic.
4. What are some ways that Arctic animals deal with the cold climate?
5. What are some of the tribal names of people who live in the Arctic?

## In Arctic Waters

6. What type of food do the Inuit eat?
7. What are some ways that Arctic animals are useful to the Inuit?
8. What do polar bears eat?
9. What is a narwhal? What mythical creature does it remind you of?
10. What Arctic animal has tusks?

## Tuktuk Tundra Tails

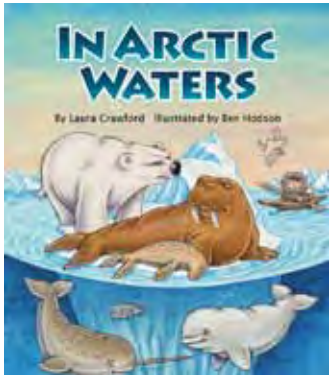
11. What is an / or are animals that have fur that change from brown in the summer to white in the winter?
12. How often do humans and animals see the sun in the Arctic winter?
13. What is an Inuit's boot called?
14. Name some things that some Arctic animals might use to line their winter dens.
15. What are some ways that Arctic animals prepare for winter?

# Comprehension Questions & Writing Prompts

Identify basic similarities in and differences between two texts on the same topic.

Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.



1. Describe animals swimming around the ice that floats.
2. Which animal do you think was the smallest?
3. Which animal was the largest? What made them stop and move to another ice berg?
4. Why do you think the animals were afraid of the man?
5. What did the man do at the end of the story?
6. What did the Inuit drop off his sled?
7. Who saw it fall?
8. What did he want it for?
9. Where did the polar bear put the kamik and why didn't he keep it?
10. Where did the arctic fox put the kamik and why didn't he keep it?
11. Which animal ended up keeping the kamik?
12. How had he convinced the other animals to think they didn't want the kamik?

## Both Stories

13. Both of these stories take place in the Arctic. Describe the habitat of each story and explain how they are different.
14. We see an Inuit man in each story. Why were the animals afraid of the man *In Arctic Waters* but not in *Tuktuk Tundra Tale*?
15. What animal was in both stories? Can you describe how that animal can live in the two different habitats?
16. What are some ways the illustrators showed readers that it is cold?
17. On the last page of both stories, we see beautiful lights in the sky. Do you know what the lights are? Can you see those lights where you live? If so, have you ever seen them?

# Cross-Curricular Vocabulary Activities

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## *Objective Core Language Arts:*

*Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content.*

*Identify new meanings for familiar words and apply them accurately (e.g., duck is a bird & the verb to duck).*

*Use words & phrases acquired through conversations, reading/being read to, and responding to texts.*

*Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade-level topic or subject area.*

*Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.*

*Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.*

*Use frequently occurring adjectives.*

**Vocabulary Game:** This activity is a very general idea and is designed to get children thinking of vocabulary words that will then be used as the beginning vocabulary list for a science lesson.

Select an illustration from the book and give the children a specific length of time (five minutes?) to write down all the words they can think of about the particular subject. It is helpful to project an illustration on a whiteboard. Use eBook or book preview found at [www.ArbordalePublishing.com](http://www.ArbordalePublishing.com).

The children's word list should include anything and everything that comes to mind, including nouns, verbs, and adjectives. At the end of the time, have each child take turns reading a word from his/her list. If anyone else has the word, the reader does nothing. However, if the reader is the only one with the word, he/she should circle it. While reading the list, one person should write the word on a flashcard or large index card and post it on a bulletin board or wall.

At the end, the child with the most words circled "wins." And you have a start to your science vocabulary list. Note: if a child uses an incorrect word, this is a good time to explain the proper word or the proper usage.

**Glossary/Vocabulary Words:** Word cards may be used (see Appendix) or have children write on index cards, a poster board, or on a chalkboard for a "word wall." If writing on poster board or chalkboard, you might want to sort words into nouns, verbs, etc. right away to save a step later if using for Silly Sentences (on the next page). Leaving the words posted (even on a refrigerator at home) allows the children to see and think about them frequently.

**Using the Words:** The following activities may be done all at once or over a period of several days.

- Sort vocabulary words into nouns, verbs, adjectives, etc. and write what they are on the backs of the cards. When the cards are turned over, all you will see is "noun," etc. (these can then be used for the "silly sentences" on the next page).
- After the cards have been sorted, go over the categories to ensure that all cards have been placed correctly. (Mistakes are a great opportunity to teach!)
- Choose two words from each category and write a sentence for each word.
- Write a story that uses at least ten vocabulary words from the word sort.
- Have children create sentences using their vocabulary words. Each sentence could be written on a separate slip of paper. Have children (individually or in small groups) sort and put sentences into informative paragraphs or a story. Edit and re-write paragraphs into one informative paper or a story.

**Silly Sentence Structure Activity:** This "game" develops both an understanding of sentence structure and the science subject. Use words from the "word wall" to fill in the blanks. After completing silly sentences for fun, have children try to fill in the proper words by looking for the correct information in the book.

# Word Bank

Build a word bank using words found in the story or For Creative Minds.

Adjective	Noun			Verb
blue	Arctic	hemisphere	reindeer	bounce
bottom	arctic fox	hibernate	seal	chase
bright	atmosphere	hummock	snail	circle
coastal	beluga whale	hunter	soil	cracked
cold	bird	ice	spring	eat
colorful	blow hole	ice pack	summer	float
deep	blubber	iceberg	sun	flying
dim	caribou	Inuit	sun dogs	freeze
frozen	clam	kamik	tooth	hibernate
furry	cold	kayak	tundra	hop
high	collared lemmings	lichen	tusks	hunting
icy	crystals	light	twilight	kayaking
low	darkness	month	walrus	migrate
northern	daytime	narwhal	whiteout	paddling
polar	den	North Pole	winter	resting
quick	earth	northern lights	world	splashed
small	Eskimo	nose	worm	standing
southern	fall	padded feet		stop
thick	fins	permafrost		swimming
tiny	flippers	pingo		thaw
warm	flukes	polar bear		
white	frost boils			





# IN ARCTIC WATERS

1. Arctic \_\_\_\_\_<sub>noun</sub>s have adaptations to help them \_\_\_\_\_<sub>verb</sub> in the cold.
2. Polar bears have \_\_\_\_\_<sub>noun</sub> on the \_\_\_\_\_<sub>adjective</sub> of their feet.
3. \_\_\_\_\_<sub>noun</sub>s and \_\_\_\_\_<sub>noun</sub>s have \_\_\_\_\_<sub>adjective</sub> blubber to keep them warm.
4. \_\_\_\_\_<sub>noun</sub>s have a long \_\_\_\_\_<sub>noun</sub> that looks like a unicorn's horn.
5. Walruses have \_\_\_\_\_<sub>number</sub> front \_\_\_\_\_<sub>noun</sub>s.
6. Inuits \_\_\_\_\_<sub>verb</sub> animals for food.
7. \_\_\_\_\_<sub>noun</sub> cubs are usually born in December.
8. Walruses eat \_\_\_\_\_<sub>noun</sub>s, \_\_\_\_\_<sub>noun</sub>s, and worms.
9. Polar bears, seals, and natives \_\_\_\_\_<sub>verb</sub> seals.
10. Narwhal calves are usually \_\_\_\_\_<sub>verb</sub> in \_\_\_\_\_<sub>month</sub>.

# Tuktuk

## Tundra Tale

1. \_\_\_\_\_  
noun can last for \_\_\_\_\_  
nouns in polar regions.
2. In the \_\_\_\_\_,  
season the \_\_\_\_\_  
noun is just below the horizon.
3. During the \_\_\_\_\_,  
noun the sun never \_\_\_\_\_  
verb above the horizon, but there is \_\_\_\_\_  
adjective light to see by.
4. The \_\_\_\_\_s,  
noun or Aurora borealis, are \_\_\_\_\_  
adjective patterns of light in the sky.
5. Tiny ice \_\_\_\_\_s  
noun in the atmosphere \_\_\_\_\_  
verb the sun's light making \_\_\_\_\_  
number \_\_\_\_\_  
adjective lights, or sun dogs, appear on either side of the real sun.
6. Sun dogs can be seen from anywhere in the \_\_\_\_\_  
noun not just in \_\_\_\_\_  
adjective regions.
7. Collared lemmings have \_\_\_\_\_-  
color \_\_\_\_\_ fur most of the year that turns \_\_\_\_\_  
color in the winter.
8. \_\_\_\_\_  
noun have \_\_\_\_\_  
adjective hooves to let them walk on top of the snow.
9. \_\_\_\_\_s  
noun have a thick layer of \_\_\_\_\_  
noun and thick fur to help them stay warm.

# Language Arts: Sequence Sentence Strips

Cut into sentence strips, laminate if desired, and place in a "center." Have children put the events in order. Children may work alone or in small groups. Cards are in order but should be mixed up when cut apart.

*Objective: Use temporal words and phrases to signal event order. Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.*

## IN ARCTIC WATERS



This is the ice that floats in the Arctic waters.



This is the fish, small and quick that circles the ice.



This is the beluga, blubbery thick.



This is the narwhal, big and strong.



This is the seal bouncing along.



This is the walrus, ready to play.



This is the polar bear, furry white.



This is the man that hunts the animals.



This is the ice that cracks.



# Tuktuk

Tundra Tale

One furry kamik fell off the Inuit's sled.

Tuktuk the collard lemming thought the kamik would be perfect for his winter den.

Putak the polar bear thought the boot was perfect for him. Tuktuk suggested he put it on his nose.

Putak sneeze the boot off.

Aput the arctic fox thought the boot was perfect for him. Tuktuk suggested he put it on his tail.

Aput swished it off her tail.

Masak the caribou thought the book was just right for her.  
Tuktuk suggested she put it on a hoof.

Masak's hoof got stuck in the snow so she kicked it off.

Tuktuk carried the boot to his den.

Tuktuk snuggled into the boot to stay warm for the winter.

One furry kamik is just right for a collard lemming.

# Word Search

Find the hidden words. Even non-reading children can match letters to letters to find the words! Easy—words go up to down or left to right (no diagonals). For older children, identify the coordinates of the first letter in each word (number, letter).

	A	B	C	D	E	F	G	H	I	J
1	I	D	E	A	T	O	Y	Z	O	W
2	C	O	L	D	B	E	L	U	G	A
3	E	A	S	T	F	I	S	H	I	L
4	P	O	L	A	R	B	E	A	R	R
5	A	C	I	R	Y	P	A	R	A	U
6	C	E	R	A	N	T	L	C	I	S
7	K	A	Y	A	K	A	H	T	O	N
8	C	N	E	T	I	N	U	I	T	E
9	N	A	R	W	H	A	L	C	K	P
10	W	A	T	E	Z	O	A	L	I	V

ARCTIC  
BELUGA  
COLD  
FISH  
ICE PACK  
INUIT  
KAYAK  
NARWHAL  
OCEAN  
POLAR BEAR  
SEAL  
WALRUS

## IN ARCTIC WATERS



	A	B	C	D	E	F	G	H	I	J
1	B	A	O	A	X	T	O	T	S	P
2	P	I	L	I	C	H	E	N	J	U
3		D	U	A	D	U	O	E		T
4	T	I	V	K	A	M	I	K	S	A
5	O	A	C	H	N	M	A	S	A	K
6	I	P	I	N	G	O	Q	D	R	U
7	M	U	N	S	Y	C	O	L	C	W
8	F	T	U	G	S	K	Y	A	T	A
9	R	A	I	L	M	O	M	D	I	K
10	Z	I	T	U	N	D	R	A	C	E

APUT  
 ARCTIC  
 HUMMOCK  
 INUIT  
 KAMIK  
 LICHEN  
 MASAK  
 PINGO  
 PUTAK  
 TUNDRA


 Tuktuk  
 Tundra Tale

# Edible Sorting and Classifying Activity

---

*Objective Core Language Arts Vocabulary Acquisition and Use: Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.*

*Objects and materials can be sorted and described by their properties. (color, shape, size, weight and texture)*

*Use whole numbers\*, up to 10, in counting, identifying, sorting, and describing objects and experiences.*

Gather a cup of edible “sorting items.” For example:

- As many different kinds of M&Ms as you can find
- Chocolate & peanut butter chips
- Hershey Kisses
- Peanuts or other type of nuts



Ask the children to sort the items into groups. There is no right and wrong, only what makes sense to the child. When finished, ask the child:

What feature or attribute (color, size, ingredient, etc.) did you use to sort the items?

- Were there some items that fit more than one group or don't fit any group?
- If so, how did the child decide which attribute was more important?
- How are various objects similar and different?
- Was it easy to sort or were there some items that were a little confusing?

If more than one person did this, did everyone sort by the same attribute? To extend the learning, graph the attributes used to sort the items (blank graph below).

Graph the attributes that children used to sort their items. (Graph provided on next page.)

What was the most common attribute (size, shape, color, etc.) used?

*Objective: Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.*

*Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).*

*Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/ among different groups of animals.*

10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
attribute				

# Classifying Animals

---

*Objective: Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.*

*Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).*

*Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.*

Just as we sort candy, scientists sort all living things into groups to help us understand and connect how things relate to each other. Scientists ask questions to help them sort or classify animals.

Based on the answers to the questions, scientists can sort the living organisms. The first sort is into a Kingdom. There are five commonly accepted Kingdoms: Monera, Protista, Fungi, Plantae, and Animalia. All of the living things in this book belong to Animalia or the Animal Kingdom.

The next big sort is into a Phylum. One of the first questions that a scientist will ask is whether the animal has (or had at some point in its life) a backbone. If the answer is “yes,” the animal is a vertebrate. If the answer is “no,” the animal is an invertebrate.

Each Phylum is broken down into Classes, like mammals, birds, reptiles, fish, amphibians, insects, or gastropods (snails). Then each class can be broken down even further into orders, families, genus and species, getting more specific.



The scientific name is generally in Latin or Greek and is the living thing’s genus and species. People all over the world use the scientific names, no matter what language they speak. Most living organisms also have a common name that we use in our own language.



Some questions scientists ask:



- Does it have a backbone?
- What type of skin covering does it have?
- Does it have a skeleton? If so, is it inside or outside of the body?
- How many body parts does the animal have?
- Does it get oxygen from the air through lungs or from the water through gills?
- Are the babies born alive or do they hatch from eggs?
- Does the baby drink milk from its mother?
- Is it warm-blooded or cold-blooded?

Using what you know, and information and pictures in the book, see how many Animal Chart squares you can fill in for each animal.

# Animal Chart

	Animals		
<b>Appendages</b>	legs (how many)		
	flippers/fins		
	wings		
	tail/no tail		
	horns/antlers		
<b>Feet or hands: if they have; may have more than one</b>	claws		
	web		
	toes		
	opposable thumbs/toes		
	hooves		
<b>Movement: may do more than one</b>	walks/runs		
	crawls		
	flies		
	slithers		
	swims		
	climbs		
	hops		
<b>Backbone</b>	backbone/vertebrate		
	no backbone/invertebrate		
<b>Skeleton</b>	inside skeleton (endoskeleton)		
	outside skeleton (exoskeleton)		
	no skeleton		
<b>Body covering</b>	hair/fur/whiskers/quills		
	feathers		
	dry scales or bony plates		
	moist scales		
	smooth, moist skin		
	hard outer shell		
<b>Color/patterns</b>	stripes or spots		
	mostly one color		
	skin color changes		
	bright, vivid colors		
<b>Gets oxygen</b>	lungs		
	gills		
<b>Body temperature</b>	warm-blooded (endothermic)		
	cold-blooded (ectothermic)		
<b>Babies</b>	born alive		
	hatch from eggs		
	born alive or hatch from eggs		
<b>Metamorphosis</b>	complete		
	incomplete		
	none		
<b>Teeth</b>	sharp		
	flat		
	no teeth (bill/beak)		
<b>Food</b>	plant eater (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

	Animals		
<b>Appendages</b>	Legs (how many)		
	flippers/fins		
	wings		
	tail/no tail		
<b>Feet or hands: if they have, may have more than one</b>	horns/antlers		
	claws		
	web		
	toes		
	opposable thumbs/toes		
<b>Movement: may have more than one</b>	hooves		
	walks/runs		
	crawls		
	flies		
	slithers		
	swims		
	climbs		
<b>Backbone</b>	hops		
	backbone/vertebrate		
<b>Skeleton</b>	no backbone/invertebrate		
	inside skeleton (endoskeleton)		
	outside skeleton (exoskeleton)		
<b>Body covering</b>	no skeleton		
	hair/fur/whiskers/quills		
	feathers		
	dry scales or bony plates		
	moist scales		
	smooth, moist skin		
<b>Color/patterns</b>	hard outer shell		
	hard outer covering		
	stripes or spots		
	mostly one color		
<b>Gets oxygen</b>	skin color changes		
	lungs		
	gills		
<b>Body Temperature</b>	bright, vivid colors		
	warm-blooded (endothermic)		
<b>Babies</b>	cold-blooded (ectothermic)		
	born alive		
	hatch from eggs		
<b>Metamorphis?</b>	born alive or hatch from eggs		
	complete		
	incomplete		
<b>Teeth</b>	none		
	sharp		
	flat		
<b>Food</b>	no teeth (bill/beak)		
	plant eaters (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		


	Animals		
<b>Appendages</b>	Legs (how many)		
	flippers/fins		
	wings		
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<b>Feet or hands: if they have, may have more than one</b>	claws		
	web		
	toes		
	opposable thumbs/toes		
	hooves		
<b>Movement: may have more than one</b>	walks/runs		
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	swims		
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	moist scales		
	smooth, moist skin		
	hard outer shell		
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	mostly one color		
	skin color changes		
	bright, vivid colors		
<b>Gets oxygen</b>	lungs		
	gills		
<b>Body Temperature</b>	warm-blooded (endothermic)		
	cold-blooded (ectothermic)		
<b>Babies</b>	born alive		
	hatch from eggs		
	born alive or hatch from eggs		
<b>Metamorphosis?</b>	complete		
	incomplete		
	none		
<b>Teeth</b>	sharp		
	flat		
	no teeth (bill/beak)		
<b>Food</b>	plant eaters (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

# Food Web Cards


*Objective: Use observations to describe patterns of what plants and animals (including humans) need to survive.*

*Develop a model to describe the movement of matter among plants and animals.*

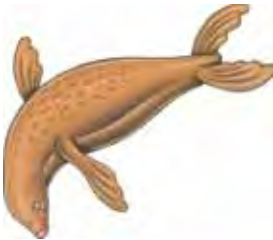
Cut copies into food web cards. Using the information in the book and on the card, stack each “**predator**” card on top of its “**prey**” card (predators eat the prey). How many cards can you get in one pile? Are there some animals that are always at the top of your pile or on top of the food chain?




**Polar Bear**  
Polar Bears are meat-eaters who frequently hunt and catch their prey in the water, often many miles from land. They eat mostly seals. A polar bear’s stomach can hold up to 150 pounds.




**Walrus**  
Walruses are meat-eaters; they eat mostly clams, snails, mussels, worms, sea cucumbers, and other animals that they find on the sea floor. If they are very hungry, they will eat seals.



**Norther Fur Seal**  
Northern Fur Seals are meat-eaters that hunt at night (they are primarily nocturnal). They eat fish, squid, and octopi. Seals don’t chew their food; they swallow it in large chunks.



**Narwhal**  
Narwhals are meat-eaters; they eat fish, squid, shrimp, and other marine animals.



**Beluga**  
Belugas are meat-eaters. They hunt and eat bottom-dwelling prey, including fish, squid, crustaceans, octopi, and worms. Belugas use echolocation to locate the prey.



# Animal Sorting Cards

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*Objective: Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.*

*Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).*

*Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.*

## Animal Card Games:

**Sorting:** Depending on the age of the children, have them sort cards by:

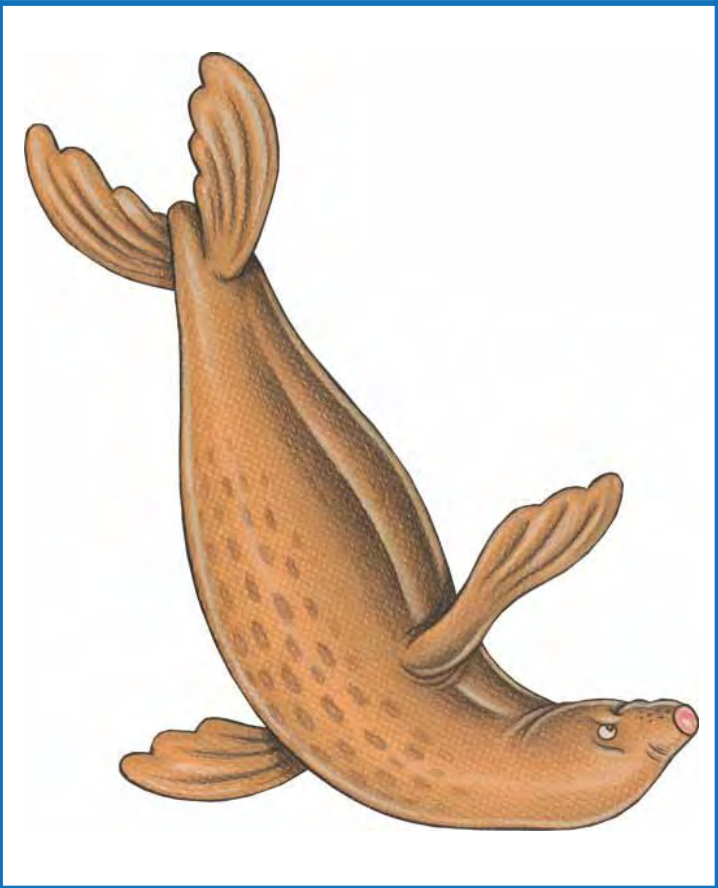
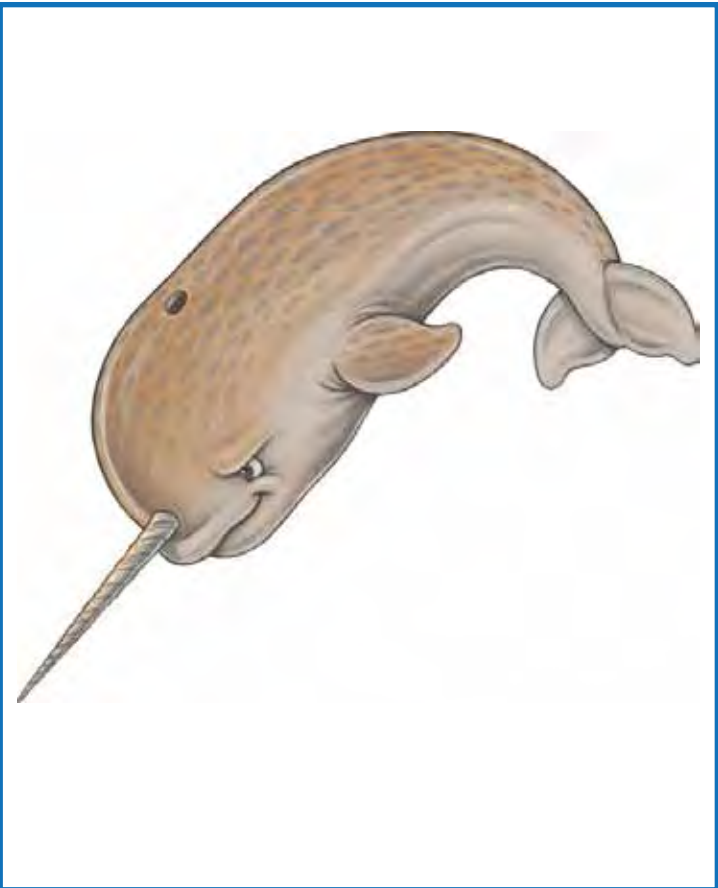
where the animals live (habitat)	tail, no tail
number of legs (if the animals have legs)	colors or skin patterns
how they move (walk, swim, jump, or fly)	animal class
type of skin covering (hair/fur, feathers, scales, moist skin)	
what they eat (plant eaters/herbivores, meat eaters/carnivores, both/omnivores)	

**Memory Card Game:** Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not match, the player should turn the cards back over and it is another player's turn. The player with the most pairs at the end of the game wins.

**Who Am I?** Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Have each child put on a "card necklace" without looking at it so the card hangs down the back. The children get to ask each person one "yes/no" question to try to guess "what they are." If a child answering the question does not know the answer, he/she should say, "I don't know." This is a great group activity and a great "ice-breaker" for children who don't really know each other.

**Charades:** One child selects a card and must act out what the animal is so that the other children can guess. The actor may not speak but can move like the animal and imitate body parts or behaviors. For very young children, you might let them make the animal sound. The child who guesses the animal becomes the next actor.





# Science Journal (Vocabulary)

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## Arctic

my definition

my drawing

## Inuit

my definition

my drawing

# blubber

my definition

my drawing

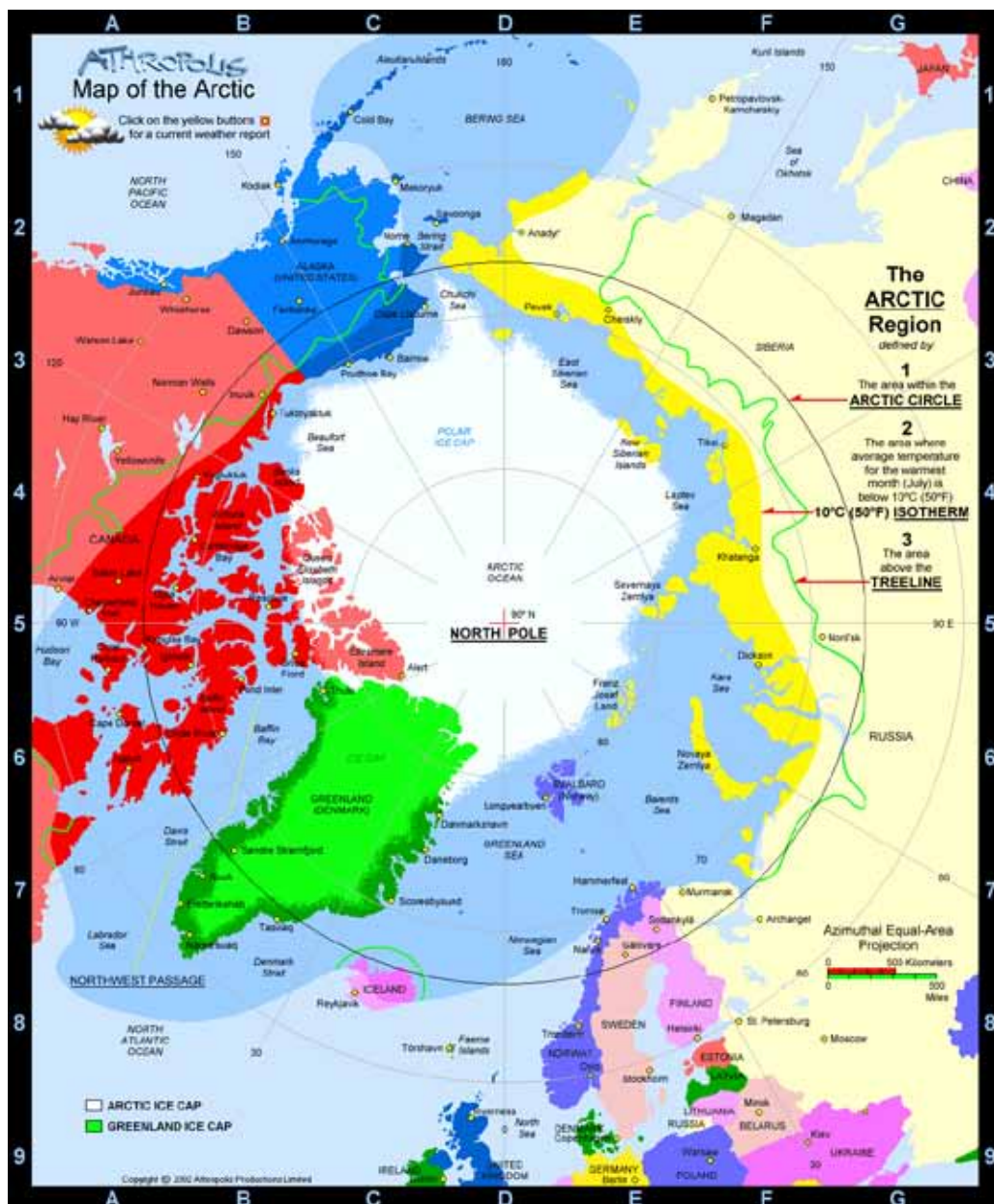
# Northern Lights

my definition

my drawing

# Math: Temperature

- Go outside and measure the temperature. What is it?
- Do you think that it is warmer, colder, or the same temperature in the Arctic? Why?
- Go to this website <http://www.athropolis.com/map2.htm>, pick a city, and click on it to see what the temperature is in that city.
- Were you right? Which city is warmer and which is colder?
- How many degrees difference is there between where you live and the Arctic Circle city you measured?



# Answers

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## Silly Sentences

### Arctic General

The polar region in the northern hemisphere is called the Arctic.

At the earth's poles, the sun stays low in the sky, even in the middle of summer.

In the winter, the sun doesn't come up at all for months at a time.

When winter comes, the animals have to be prepared for the months of darkness and cold.

Some animals grow a thick winter coat, prepare a warm den, or even hibernate for the whole winter.

The winter ice pack only freezes in the winter and thaws in the spring.

Permafrost is a deep layer of soil that is always frozen.

The Inuit are native who live in the coastal arctic.

The term "Eskimo" is considered insulting to the Inuit.

### In Arctic Waters

Arctic animals have adaptations to help them live in the cold.

Polar bears have fur on the bottom of their feet.

Seals and beluga whales have thick blubber to keep them warm. (So do polar bears... mentioned in Tuk Tuk)

Narwhals have a long tooth that looks like a unicorn's horn.

Walrus have two front tusks.

Inuits hunt animals for food.

Polar bear cubs are usually born in December.

Walrus eat clams, snails, and worms.

Polar bears, seals, and natives eat seals.

Narwhal calves are usually born in July.

### Tuk Tuk Tundra Tail

Twilight can last for months in polar regions.

In the winter, the sun is just below the horizon.

During the daytime, the sun never appears above the horizon, but there is dim light to see by.

The northern lights, or Aurora borealis, are colorful patterns of light in the sky.

Tiny ice crystals in the atmosphere bend the sun's light making two bright lights, or sun dogs, appear on either side of the real sun.

Sun dogs can be seen from anywhere in the world, not just in polar regions.

Collared lemmings have reddish-brown fur most of the year that turns white in the winter.

Caribou/reindeer have large hooves to let them walk on top of the snow.

Polar bears have a thick layer of blubber and thick fur to help them stay warm.

Arctic foxes curl up to sleep so that their tails cover their noses to stay warm.

# Appendix A—“What Children Know” Cards

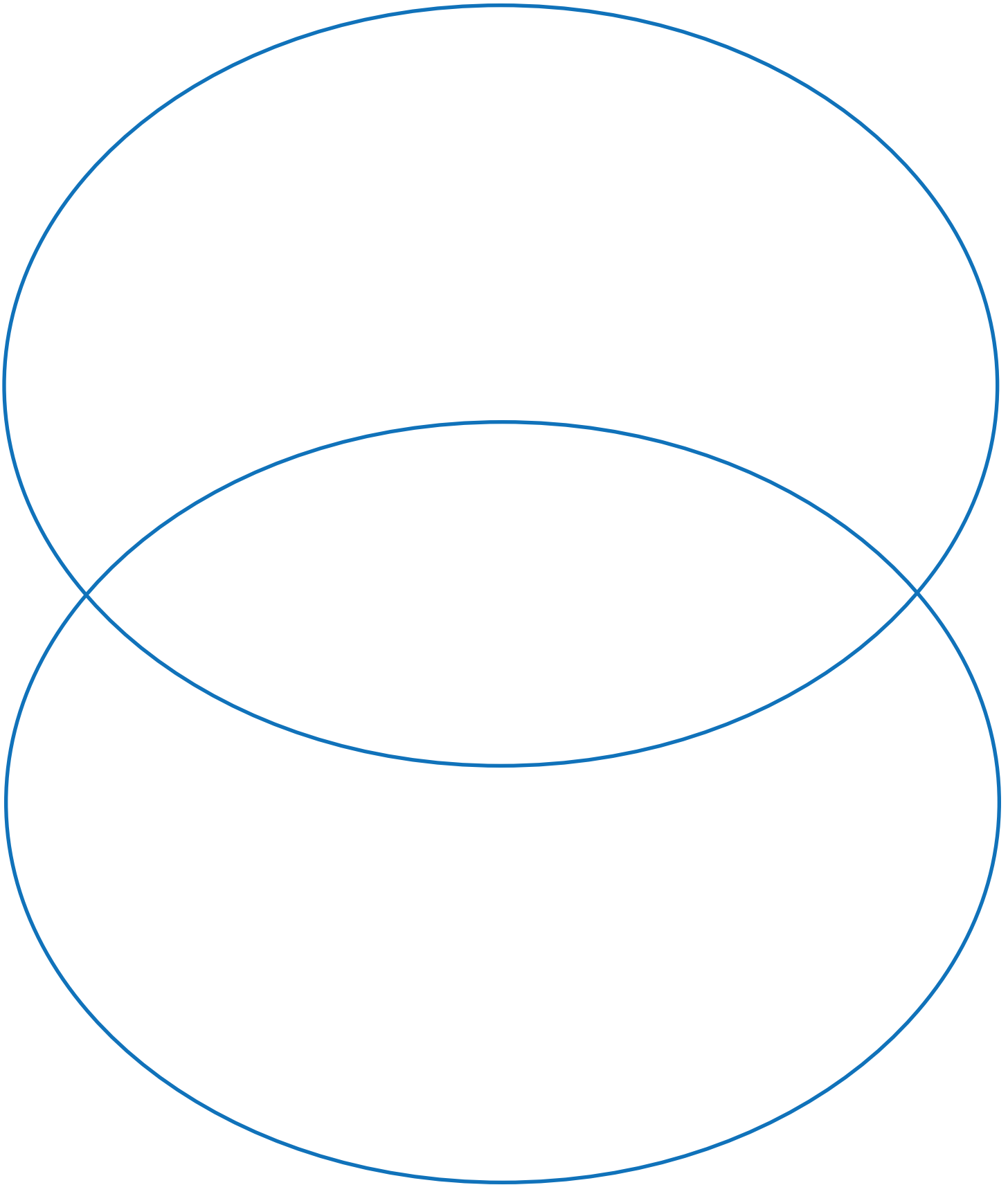
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<p>Question:</p>          <p>My answer:</p>          <p>This information is correct! This information is not correct; can you find the correct information?</p>	<p>Question:</p>          <p>My answer:</p>          <p>This information is correct! This information is not correct; can you find the correct information?</p>
<p>Question:</p>          <p>My answer:</p>          <p>This information is correct! This information is not correct; can you find the correct information?</p>	<p>Question:</p>          <p>My answer:</p>          <p>This information is correct! This information is not correct; can you find the correct information?</p>



# Appendix B—Venn Diagram

Compare and contrast two



# Appendix C—Vocabulary Cards



pingo



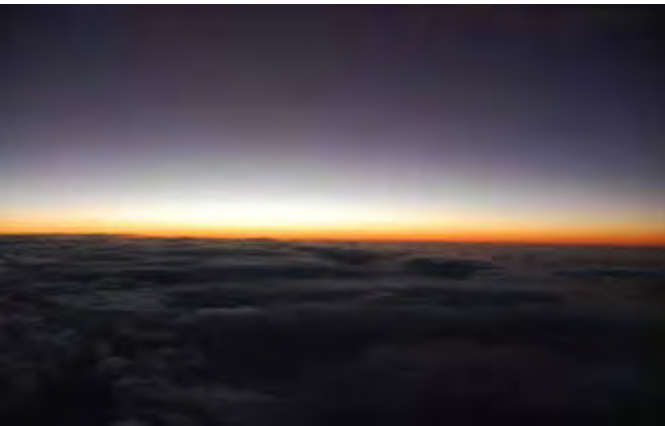
tundra



hummock



sun dogs



Arctic twilight



Northern Lights

# In Arctic Waters Bingo

Term	Definition
adaptation	any structure or behavior that helps a living thing meet its needs for survival
camouflage	any coloring, shape, or pattern that allows a living thing to blend into its surroundings
migration	the movement of an animal from one location to another as the seasons change
hibernation	a long, deep sleep in which an animal's heart rate & breathing are much slower than normal
walrus	an Arctic marine mammal with large tusks; flippers help it to crawl onto land
polar bear	a large white bear that lives in the Arctic
Seals	marine mammals with sub-species such as ringed, bearded, spotted, harp, ribbon, and hooded.
narwhal	a large marine mammal with a horn like a "unicorn"
Inuit	Natives who live in Canada's coastal Arctic area.
endangered	having a population that is falling low in number & that is in danger of becoming extinct
Polar Ice Cap	huge mass of ice that stays frozen all year long
Summer Ice Pack	ice that breaks into smaller pieces during the summer
ecosystem	all the living & nonliving things in an environment & how they interact
habitat	a place where an animal or a plant lives
blubber	a type of adaptation: a layer of fat that helps to keep marine mammals warm in cold water
Arctic	the area lying above 66.5 degrees North latitude
permafrost	deep layer of soil that is always frozen, may have been frozen for thousands of years
carnivore	a consumer that eats other consumers
omnivore	a consumer that eats both plants and other consumers
fur	an animal adaptation of heavy "hair" that keeps animals warm in cold weather
Winter Ice Pack	ice that freezes in the winter and thaws in the summer
food chain	the flow of energy through a community
predator	an animal that hunts and kills other animals for food
prey	the animals that predators hunt
food web	all the food chains in a community

B	I	N	G	O
food web	hibernation	narwhal	Summer Ice Pack	permafrost
adaptation	Winter Ice Pack	Inuit	ecosystem	predator
habitat	polar bear	<b>FREE</b>	camouflage	omnivore
migration	Seals	Polar Ice Cap	blubber	food chain
fur	walrus	prey	Arctic	carnivore

B	I	N	G	O
polar bear	blubber	Seals	migration	omnivore
habitat	narwhal	Polar Ice Cap	camouflage	Inuit
Summer Ice Pack	permafrost	<b>FREE</b>	hibernation	prey
food chain	ecosystem	predator	endangered	adaptation
Arctic	carnivore	Winter Ice Pack	food web	fur

B	I	N	G	O
camouflage	endangered	habitat	carnivore	predator
Seals	ecosystem	polar bear	omnivore	prey
Inuit	Summer Ice Pack	<b>FREE</b>	narwhal	food web
blubber	fur	permafrost	Winter Ice Pack	adaptation
walrus	Arctic	hibernation	food chain	migration

B	I	N	G	O
permafrost	food web	carnivore	blubber	hibernation
adaptation	polar bear	prey	Inuit	ecosystem
fur	camouflage	<b>FREE</b>	omnivore	Polar Ice Cap
migration	Seals	Summer Ice Pack	Winter Ice Pack	walrus
predator	food chain	narwhal	habitat	endangered

B	I	N	G	O
camouflage	Winter Ice Pack	ecosystem	food web	blubber
Seals	hibernation	carnivore	endangered	Summer Ice Pack
predator	Arctic	<b>FREE</b>	food chain	adaptation
Inuit	fur	Polar Ice Cap	habitat	permafrost
narwhal	walrus	prey	polar bear	migration



B	I	N	G	O
endangered	Winter Ice Pack	walrus	predator	permafrost
habitat	Polar Ice Cap	migration	carnivore	polar bear
narwhal	blubber	<b>FREE</b>	prey	camouflage
Inuit	omnivore	food chain	Summer Ice Pack	hibernation
ecosystem	food web	Arctic	adaptation	fur

B	I	N	G	O
hibernation	food web	narwhal	Summer Ice Pack	permafrost
Winter Ice Pack	adaptation	Inuit	ecosystem	predator
polar bear	habitat	<b>FREE</b>	camouflage	omnivore
Seals	migration	Polar Ice Cap	blubber	food chain
walrus	fur	prey	Arctic	carnivore

B	I	N	G	O
habitat	narwhal	Polar Ice Cap	camouflage	Inuit
polar bear	blubber	Seals	migration	omnivore
Summer Ice Pack	permafrost	<b>FREE</b>	hibernation	prey
food chain	ecosystem	predator	endangered	adaptation
Arctic	carnivore	Winter Ice Pack	food web	fur

B	I	N	G	O
walrus	Arctic	hibernation	food chain	migration
camouflage	endangered	habitat	carnivore	predator
Seals	ecosystem	<b>FREE</b>	omnivore	prey
Inuit	Summer Ice Pack	polar bear	narwhal	food web
blubber	fur	permafrost	Winter Ice Pack	adaptation

B	I	N	G	O
food web	permafrost	carnivore	blubber	hibernation
polar bear	adaptation	prey	Inuit	ecosystem
camouflage	fur	<b>FREE</b>	omnivore	Polar Ice Cap
Seals	migration	Summer Ice Pack	Winter Ice Pack	walrus
food chain	predator	narwhal	habitat	endangered

B	I	N	G	O
Seals	hibernation	carnivore	endangered	Summer Ice Pack
camouflage	Winter Ice Pack	ecosystem	food web	blubber
predator	Arctic	<b>FREE</b>	food chain	adaptation
Inuit	fur	Polar Ice Cap	habitat	permafrost
narwhal	walrus	prey	polar bear	migration

B	I	N	G	O
ecosystem	food web	Arctic	adaptation	fur
endangered	Winter Ice Pack	walrus	predator	permafrost
habitat	Polar Ice Cap	<b>FREE</b>	carnivore	polar bear
narwhal	blubber	migration	prey	camouflage
Inuit	omnivore	food chain	Summer Ice Pack	hibernation

B	I	N	G	O
food web	hibernation	narwhal	permafrost	Summer Ice Pack
adaptation	Winter Ice Pack	Inuit	predator	ecosystem
habitat	polar bear	<b>FREE</b>	omnivore	camouflage
migration	Seals	Polar Ice Cap	food chain	blubber
fur	walrus	prey	carnivore	Arctic



B	I	N	G	O
polar bear	blubber	Seals	migration	omnivore
habitat	narwhal	Polar Ice Cap	camouflage	Inuit
Summer Ice Pack	permafrost	<b>FREE</b>	hibernation	prey
Arctic	carnivore	Winter Ice Pack	food web	fur
food chain	ecosystem	predator	endangered	adaptation

B	I	N	G	O
camouflage	endangered	habitat	carnivore	predator
walrus	Arctic	hibernation	food chain	migration
Seals	ecosystem	<b>FREE</b>	omnivore	prey
Inuit	Summer Ice Pack	polar bear	narwhal	food web
blubber	fur	permafrost	Winter Ice Pack	adaptation

B	I	N	G	O
permafrost	food web	carnivore	hibernation	blubber
adaptation	polar bear	prey	ecosystem	Inuit
fur	camouflage	<b>FREE</b>	Polar Ice Cap	omnivore
migration	Seals	Summer Ice Pack	walrus	Winter Ice Pack
predator	food chain	narwhal	endangered	habitat

B	I	N	G	O
camouflage	Winter Ice Pack	ecosystem	food web	blubber
Seals	hibernation	carnivore	endangered	Summer Ice Pack
predator	Arctic	<b>FREE</b>	food chain	adaptation
narwhal	walrus	prey	polar bear	migration
Inuit	fur	Polar Ice Cap	habitat	permafrost

B	I	N	G	O
endangered	Winter Ice Pack	walrus	predator	permafrost
ecosystem	food web	Arctic	adaptation	fur
habitat	Polar Ice Cap	<b>FREE</b>	carnivore	polar bear
narwhal	blubber	migration	prey	camouflage
Inuit	omnivore	food chain	Summer Ice Pack	hibernation

B	I	N	G	O
food web	hibernation	narwhal	permafrost	Summer Ice Pack
adaptation	Winter Ice Pack	Inuit	predator	ecosystem
habitat	polar bear	<b>FREE</b>	omnivore	camouflage
migration	Seals	Polar Ice Cap	food chain	blubber
fur	walrus	prey	carnivore	Arctic

B	I	N	G	O
habitat	narwhal	Polar Ice Cap	camouflage	Inuit
polar bear	blubber	Seals	migration	omnivore
Summer Ice Pack	permafrost	<b>FREE</b>	hibernation	prey
Arctic	carnivore	Winter Ice Pack	food web	fur
food chain	ecosystem	predator	endangered	adaptation

B	I	N	G	O
camouflage	endangered	habitat	carnivore	predator
walrus	Arctic	hibernation	food chain	migration
Seals	ecosystem	<b>FREE</b>	omnivore	prey
blubber	fur	permafrost	Winter Ice Pack	adaptation
Inuit	Summer Ice Pack	polar bear	narwhal	food web



B	I	N	G	O
permafrost	food web	carnivore	hibernation	blubber
adaptation	polar bear	prey	ecosystem	Inuit
fur	camouflage	<b>FREE</b>	Polar Ice Cap	omnivore
migration	Seals	Summer Ice Pack	walrus	Winter Ice Pack
predator	food chain	narwhal	endangered	habitat

B	I	N	G	O
Seals	hibernation	carnivore	endangered	Summer Ice Pack
camouflage	Winter Ice Pack	ecosystem	food web	blubber
predator	Arctic	<b>FREE</b>	food chain	adaptation
narwhal	walrus	prey	polar bear	migration
Inuit	fur	Polar Ice Cap	habitat	permafrost

B	I	N	G	O
endangered	Winter Ice Pack	walrus	predator	permafrost
ecosystem	food web	Arctic	adaptation	fur
habitat	Polar Ice Cap	<b>FREE</b>	carnivore	polar bear
Inuit	omnivore	food chain	Summer Ice Pack	hibernation
narwhal	blubber	migration	prey	camouflage

B	I	N	G	O
adaptation	Winter Ice Pack	Inuit	predator	ecosystem
food web	hibernation	narwhal	permafrost	Summer Ice Pack
habitat	polar bear	<b>FREE</b>	omnivore	camouflage
migration	Seals	Polar Ice Cap	food chain	blubber
fur	walrus	prey	carnivore	Arctic

<b>B</b>	<b>I</b>	<b>N</b>	<b>G</b>	<b>O</b>
food chain	ecosystem	predator	endangered	adaptation
polar bear	blubber	Seals	migration	omnivore
Summer Ice Pack	permafrost	<b>FREE</b>	hibernation	prey
Arctic	carnivore	Winter Ice Pack	food web	fur
habitat	narwhal	Polar Ice Cap	camouflage	Inuit

B	I	N	G	O
camouflage	endangered	habitat	predator	carnivore
walrus	Arctic	hibernation	migration	food chain
Seals	ecosystem	<b>FREE</b>	prey	omnivore
blubber	fur	permafrost	adaptation	Winter Ice Pack
Inuit	Summer Ice Pack	polar bear	food web	narwhal

B	I	N	G	O
adaptation	polar bear	prey	ecosystem	Inuit
permafrost	food web	carnivore	hibernation	blubber
fur	camouflage	<b>FREE</b>	Polar Ice Cap	omnivore
migration	Seals	Summer Ice Pack	walrus	Winter Ice Pack
predator	food chain	narwhal	endangered	habitat

B	I	N	G	O
Inuit	fur	Polar Ice Cap	habitat	permafrost
camouflage	Winter Ice Pack	ecosystem	food web	blubber
predator	Arctic	<b>FREE</b>	food chain	adaptation
narwhal	walrus	prey	polar bear	migration
Seals	hibernation	carnivore	endangered	Summer Ice Pack



B	I	N	G	O
endangered	Winter Ice Pack	walrus	permafrost	predator
ecosystem	food web	Arctic	fur	adaptation
habitat	Polar Ice Cap	<b>FREE</b>	polar bear	carnivore
Inuit	omnivore	food chain	hibernation	Summer Ice Pack
narwhal	blubber	migration	camouflage	prey