# Teaching Activity Guide

# A Cool Summer Tail

# A Warm Winter Tail

# Table of Contents




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# How to Use This Activity Guide (General)

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 near 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!

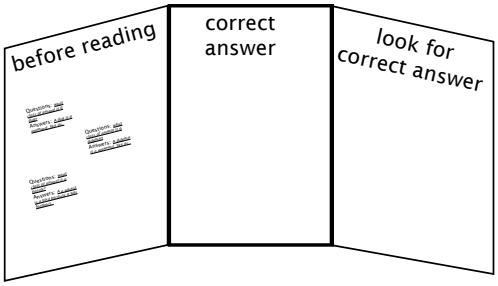
**For librarians and bookstore employees; after-school program leaders; and zoo, aquarium, nature center, park & museum educators:** Whether reading a book for story time or using the book to supplement an educational program, feel free to use the activities in your programs. We have done the "hard part"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

What are some ways that habitats can change on a regular, repeating basis?
How do the temperature and weather change with the seasons?
What are some ways that animals deal with changing seasonal weather?


By looking at the cover of the book, what do you think it's about?
During which season of the year do you think this story takes place?
What does "migrate" mean?
Do all animals migrate when it starts to get cold?
What are some animals that migrate?
Do you know any adult humans who migrate south in the winter but come back in the spring?
What does "hibernate" mean?
Do all animals hibernate when it starts to get cold?
What are some animals that hibernate?
If an animal stays active during the cold winter, what are some ways it might stay warm?
What are some animals that stay in cold weather during the winter but stay active and need to get food?
What are some ways that we (humans) stay warm in the winter?
What do bears do during the cold winter?
What do turtles do during the cold winter?
How do foxes stay warm in the winter?
Many birds migrate to warmer weather. Do all birds?


By looking at the cover of the book, what do you think it's about?
During which season of the year do you think this story takes place?
Some animals migrate long distances and others migrate short distances. Why would animals migrate in the summer?
What are some ways that you think animals might stay cool in the summer?
What time of day is it coolest?
Can you name any animals that swim or use cool water or mud to cool off in the hot summer weather?
Can you name any animals that use shade to hide from the sunlight and heat?
What are some ways that humans stay cool in the summer.

# Comprehension Questions & Writing Prompts

*Objective Core Language Arts, Speaking and Listening: 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.*
*Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.*
*Retell stories, including key details, and demonstrate understanding of their central message or lesson.*
*Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.*


How did the author introduce readers to the many different ways that animals survive the winter?

Who was asking the questions?

Was there a "Mama" for each animal? Why or why not?

What are some of the animals that migrated to warmer areas when it got cold?

What are some animals that hibernate?

What are some animals that stayed in the cold but had special ways to keep warm?

What were some of the ways those animals kept warm?

Which animal buried itself into the mud?

Which animal wraps its tail around itself to stay warm?

Which animal grows hollow hair to say warm?

How did the bees stay warm in the hive?

What did the butterflies do when it started to get cold?

What did the frogs do to survive the winter?

Thinking it through/writing prompts:

- Suppose you out playing with some friends and it starts to rain. You and your friends get wet and are cold but you are waiting for the rain to stop before going home. What are some ways you can warm yourselves?
- An ice storm knocks out all electricity in your house and there is no heat. What are some things you can do to stay warm?


How did the author introduce readers to the many different ways that animals survive the winter?

Who was asking the questions?

Was there a “Mama” for each animal? Why or why not?

How do foxes stay cool in the hot summer weather?

What are two ways that painted turtles stay cool?

How to the blackbird chickadees stay cool?

How do bears use the cool ground to cool off?

Describe the hair that deer have to help them stay cool.

What do honey bees do to keep the queen cool?

How do squirrels stay cool?

What body part do the black swallowtails use to provide shade?

What time of day do snakes come out to stay cool? Where do they hide during the heat of the day?

Into what do the frogs dig to stay cool?

What do the Costa’s hummingbirds do when it gets hot?

What are some ways that humans stay cool in the hot weather?

Thinking it through/writing prompts:

- Describe the clothes that you wear in the summer and compare them to the clothes you wear in the winter.
- A thunderstorm knocks out all electricity in your house and there is no air conditioning. What are some things you can do to stay warm?
- Describe some man-made things that you might use to stay cool in hot summer weather.

# Cross-Curricular Vocabulary Activities

*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 the eBook or book preview found at 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. The glossary has some high-level words. Feel free to use only those words as fit your situation.

**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

| Adjective | Noun | | | Verb |
|---|---|---|---|---|
| behavioral | amphibian | heartbeat | shade | breathe |
| cold | animal | heat | shell | burrow |
| cooler | antifreeze | hibernation | shelter | drop |
| decaying | bird | hive | shiver | fly |
| dormant | blood | hollow | skin | huddle |
| evaporating | body | ice | snow | jump |
| fluff | bottom | Insect | soil | learn |
| frozen | breeze | instinct | source | lick |
| higher | brumation | insulation | south | melt |
| hot | burrow | lake | spit bath | migrate |
| huge | cache | larva (larvae pl) | spring | move |
| indented | chill | life cycle | summer | pant |
| lower | climate | mammal | sweat | put |
| physical | dormancy | migration | system | release |
| plump | down | migrators | tail | seek |
| seasonal | drey | moisture | temperature | shed |
| slow | elevation | mud | tongue | sleep/nap |
| thick | energy | muscle | tunnel | spray |
| warm | feathers | nest | undercoat/ underfur | stay |
| warm-blooded | flock (birds) | north | water | survive |
| warmer | flower | oxygen | weather | swarm |
| | flyway | parent | week | sweat |
| | food | pond | wind | swim |
| | fur | predator | wings | thaw |
| | goose bumps | reptile | winter | trap |
| | heart | season | | wake |
| | | | | |
| | | | | |

# Cross Curricular: Silly Sentences

1. Living things adapt to _____ changes in different ways.
   (adjective)
2. Animals have adaptations to help them _____ _____ ____ weather in the _____ and _____ weather in the winter.
   (verb) (adjective) (noun) (adjective)
3. These adaptations can be changes in their _____ (physical) or they can be changes in things that the animals do (behavioral).
   (noun)
4. Many animals _____ to a different location (migrate) when the weather starts to get _____. They are following not only _____ weather and seeking shelter, but also are often following _____ sources.
   (verb) (adjective) (adjective) (noun)
5. Not all _____ _____—some stay through cold weather if there are enough food sources.
   (noun) (verb)
6. A few _____(whales) and _____ (Monarch butterflies) migrate.
   (noun) (noun)
7. Other animals _____for long periods during the winter (_____ in mammals or brumation in reptiles).
   (verb) (noun)
8. These animals slow their systems down so they don't need as much _____: their hearts beat slower, they don't _____ as often, and sometimes their body temperatures even drop.
   (noun) (verb)

1. To cool down, some mammals _____ (verb), or breathe in and out very quickly with their tongues sticking out.
2. The _____ (noun) on their _____ (noun)s cools the air going into their bodies, helping them to cool down.
3. All kinds of animals _____ (verb) into or _____ (verb) themselves with water or mud to cool down. The _____ (adjective) temperature of the water or mud helps to cool their bodies off.
4. Some animals _____ (verb) water onto their outer skin (_____ (noun)). The _____ (adjective) water then cools the animals' bodies.
5. Other animals don't make their own water or sweat so they have to _____ (verb) water onto their skin by _____ (verb) ing themselves (_____ _____ (noun)).
6. Other animals might _____ (verb) into cool _____ (noun), _____ (verb) under rocks, or lay in cool dirt.
7. Some animals _____ (verb) in the _____ (noun) where it is cooler.
8. Some animals even _____ (verb) to higher _____ (noun)s or cooler climates.
9. Still other animals might _____ (verb) or _____ (verb) during the day and be more active in the evening or at night when it is cooler.

# Analogies

*Language Arts, Reading Standards: Foundational Skills, Recognize and produce rhyming words.*

Use the words below to complete the analogies:

Word Bank

bees
bird
cover
deer
den
fly
hot
insect
sleep

1. Cold is to winter as _____ is to summer

2. Deer is to mammal as butterfly is to _____

3. Drey is to tree as _____ is to ground

4. Wing is to _____ as paw is to dig

5. Tail is to wrap as blanket is to _____

6. Hibernate is to _____ as migrate is to move

7. Cub is to bear as fawn is to _____

8. Buzz is to _____ as squeak is to mouse

9. Feather is to _____ as fur is to bear

# Language Arts: Word Families & Rhyming Words

*Language Arts, Reading Standards: Foundational Skills, Recognize and produce rhyming words.*

Word families are groups of words that have some of the same combinations of letters in them that make them sound alike…or rhyme. For example ad, add, bad, brad (Brad), cad, Chad, clad, dad, fad, gad, glad, grad, had, lad, mad, pad, plaid (silent 'i"), sad, shad, and tad all have an "ad" letter combination and rhyme.

- Find and write down rhyming words in the text.
- Are they in the same word family?
- If so, circle the combination of letters that are the same.
- Can you think of more words in the word family?

See Appendix "C" for rhyming word cards that can be used for this.

Cards can also be cut out, mixed up, and used to find rhyming words or even as a "Memory" game.

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

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

BEAR
BEES
BIRD
DEER
FOX
HIBERNATE
HUMANS
MICE
MIGRATION
MUD
SNOW
TAIL
WINTER

# 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 or jelly beans

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?

- Are 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?
- Is 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?

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

| | Animals |  |  |
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| | hatch from eggs | | |
| | born alive or hatch from eggs | | |
| **Metamorphis?** | complete | | |
| | incomplete | | |
| | none | | |
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| | flat | | |
| | no teeth (bill/beak) | | |
| **Food** | plant eaters (herbivore) | | |
| | meat eather (carnivore) | | |
| | both (omnivore) | | |

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| | outside skeleton (exoskeleton) | | |
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| | both (omnivore) | | |

# Vertebrate Classes

*Objective: Compare structures (e.g., wings vs. fins vs. legs; gills vs. lungs; feathers vs. hair vs. scales) that serve similar functions for animals belonging to different vertebrate classes*

## Mammals:

hair, fur, whiskers, or quills at some point during their lives

backbone (vertebrate)

inside skeleton (endoskeleton)

lungs to breathe

most give birth to live young

produce milk to feed young

warm-blooded

## Birds:

feathers

backbone (vertebrate)

inside skeleton (endoskeleton)

lungs to breathe

hatch from hard-shelled eggs

warm-blooded

Warm-blooded animals make their own heat and have a constant body temperature

## Reptiles:

dry scales or plates

backbone (vertebrate)

inside skeleton (endoskeleton); most turtles also have a hard outer shell

lungs to breathe

most hatch from leathery eggs

cold-blooded

Cold-blooded animals' body temperature comes from their surroundings

## Fish:

most have scales covered with a thin layer of slime

backbone (vertebrate)

inside skeleton (endoskeleton)

gills to breathe

babies are either born alive or hatch from jellylike eggs

cold-blooded

## Amphibians:

soft, moist skin

backbone (vertebrate)

inside skeleton (endoskeleton)

most hatchlings (jellylike eggs) are called larvae or tadpoles and live in water, using gills to breathe

as they grow, they develop legs and lungs and move onto land

cold-blooded

Using the sorting cards, sort the animals into their class.

# Common Invertebrates

## Arthropods: Insects:

hard outer covering

no backbone (invertebrate)

outside skeleton (exoskeleton)

adults have 3 body parts: head, thorax & abdomen

mouthparts adapted for chewing, biting, sucking and lapping

breathe through trachae

compound eyes

3 pairs of legs

usually 2 pairs of wings and 1 pair of antennae

most hatch from eggs

metamorphosis: none, incomplete, or complete

cold-blooded

## Mollusks Bi-valves:

have a two-part shell with a hinge to open/close

no backbone (invertebrate)

outside skeleton (exoskeleton)

hatch from eggs

cold-blooded

marine and freshwater

symetry:

## Mollusks Gastropods (Snails):

most have hard shells

no backbone (invertebrate)

outside skeleton (exoskeleton)

hatch from eggs

cold-blooded

## Anthropod Arachnia (Spiders):

no backbone

one or two body segments

pincers or fangs near moutyh

4 pairs of legs

no antennae

## Arthropod Crustaceans (Crabs):

hard outer covering

no backbone (invertebrate)

outside skeleton (exoskeleton)

mouthparts adapted for chewing

5 or more pairs of legs

claws

2 pairs of anntenae

2 compound eyes on stalks

adults have 2 or 3 body segments

hatch from eggs

cold-blooded

# Animal Sorting Cards

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

**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.

# Migrate

| my definition | my drawing |
| --- | --- |
| | |

# Hibernate

| my definition | my drawing |
| --- | --- |
| | |

| Pant (verb) | |
|---|---|
| my definition | my drawing |

| Shiver (verb) | |
|---|---|
| my definition | my drawing |

# Identify the Season

*Objective: Critical thinking skills*

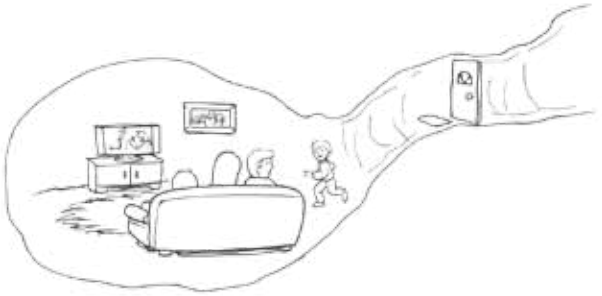
Identify whether the event takes place in the hot summer or the cold winter.

1. Black bears hibernate in warm dens.
2. Squirrels use spit to cool down.
3. Some birds and mammals shiver to warm themselves when it is cold.
4. Mammals sweat.
5. Some grandparents move to a home in warmer climates for a few months.
6. Many animals swim in cool water or dig into mud.
7. Some animals sleep during the heat of the day and only come out at night when it is cooler.
8. Some animals sleep during the night and only come out during the day when the sun is high and it is warmer.
9. Some animals cuddle together to stay warm.
10. Some animals rest in the shade.
11. Some animals like black bears lay flat on the cool dirt.
12. Some animals migrate to warmer climates where there is more food available.
13. Some animals migrate to cooler areas (higher elevations or better breezes).
14. Some mammals grow thicker fur.
15. Some animals breathe in and out very quickly to cool down; called panting in mammals and gaping in birds.

# Humans in Winter True or False?

*Objective: Critical thinking skills*

Are these statements true or false?



1. Like birds and other mammals, humans are warm-blooded. That means that the animal bodies have a warm, constant body temperatures that doesn't depend on the outside environment—98.6˚F (37˚C) for humans.

2. When the outside temperatures are very different from the core body temperatures of warm-blooded animals, their bodies fight to keep the core temperatures the same. For example, if the outside temperature is very cold, we might shiver or get goose bumps to try to warm our bodies.
3. Some humans hide from cold weather by spending more time indoors in the winter.

4. Humans don't hibernate in the winter but since the days are shorter, we spend more time in the dark than in summer, and many humans do sleep more in the winter than summer.
5. Some people (grandparents!) move (migrate) to a home in warmer climates during the winter.
6. Humans trap our body heat under clothing, blankets, coats, boots, mittens and hats. In fact, trapping the heat from our heads by wearing a hat is a good way to stay warmer. We can lose 20-30% of our body heat by not wearing a hat. (Maybe animals should wear hats, too!)

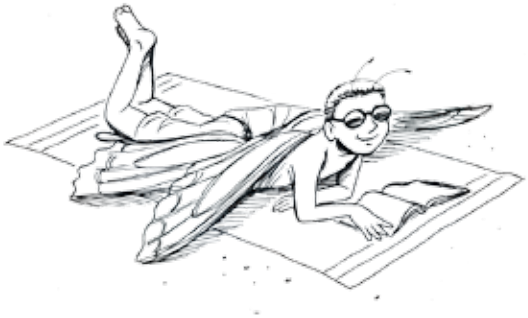
7. Just like the black-capped chickadees, humans shiver when our bodies are cold. The shivering helps to warm us.

# Humans in Summer True or False?

*Objective: Critical thinking skills*

Are these statements true or false?

1. Like birds and other mammals, humans are warm-blooded. That means that the animal bodies have a constant body temperatures that doesn't depend on the outside environment—98.6˚F (37˚C) for humans.
2. When the outside temperatures are very different from the core body temperatures of warm-blooded animals, their bodies fight to keep the core temperatures the same. For example, if the outside temperature (air or water) is very hot, humans sweat (perspire) to get rid of the extra heat.
3. Some humans hide from hot weather by sitting in air conditioning or near fans.
4. Many humans swim in pools, lakes, rivers, ponds or the ocean to cool off.
5. When the weather is hot and the sun is bright, it is cooler to sit in the shade than it is to sit in the bright sunlight.
6. Humans don't usually use spit to cool off but if there's no place to go swimming, humans might spray themselves with cool water.
7. Some humans take naps or rest times during the very hottest times of the day (early afternoon).
8. Some people may travel to the mountains or areas where it is cooler than where they normally live.
9. Summer clothing is usually light in color and weight to help keep our bodies cool. While one might wear heavy hats, gloves, and coats in the cold winter, summer is a time for shorts and t-shirts.



# Instinct or Learned Behavior?

*Objective: critical thinking skills*

*Many characteristics of an organism are inherited from the parents, but others result from the influence of the environment.*

*Recognize that some behaviors are instinctive (turtles burying their eggs) and others learned (wolf's hunting skills).*

Some animals are raised by mothers and fathers. Other animals are raised only by mothers and may never know their fathers. These animals learn behaviors from those parents. They might learn how to hunt or how to protect themselves from cold, winter weather. If the animals migrate, they will learn the migration route from their parents. If the animals hibernate, they'll learn where to go from their parents.

Other animals will never know their mothers or their fathers at all. They will survive purely on instinct. Scientists aren't sure how some of these animals know what to do or where to go. For example, how do butterflies know where to go in the winter and how do they get there without a map or GPS to give them directions?

Some of the animals in the stories ask their mothers how humans survive the cold, winter weather or in the hot, summer weather. Other animals simply ask other animals...because they don't know their mother! Can you identify which animals know their mothers and those that don't? Using that information, can you figure out which behaviors are learned and which behaviors are instinct?

Box turtles dig down into the mud and goes to "sleep" when it gets cold. Painted turtles slip into cool water or mud to cool off when it gets hot.

Black bears find a cozy den to spend the winter. Black bears lie in cool dirt to stay cool in the heat.

Squirrels store nuts and food for the winter and make large nests called "dreys." During the cold winter, they cuddle together for warmth inside the drey. They cool off in the heat with spit baths.

Monarch butterflies migrate to the same tree where their great-great grandparent spent the previous winter! Other butterflies, like the black swallowtail hide from heat by moving to cooler locations nearby.

Wood frogs crawl under leaves and let half of their bodies freeze. They'll thaw and move around once spring comes. They dig into cool, damp leaves to stay cool too.

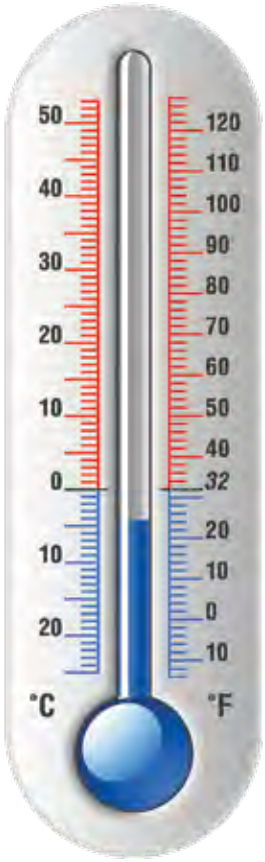
Humans wear warm coats, hats and mittens to stay warm in cold, outside weather. Come summer, they shed the warm clothing and wear cool shorts, short-sleeved shorts, and even flip-flops.

# Math Word Problems


How many seconds are in a minute?

A non-hibernating black bear's heart rate is normally 40-50 beats per minute. Is that more or less than a beat per second?

If a hibernating black bear's heart rate is 12 beats per minute, how many seconds are there between beats?




Use the thermometer on the right to answer the following questions. Below freezing is blue and above freezing is red.

Is the temperature at, above, or below freezing? How do you know?

At what temperature (Centigrade and Fahrenheit) do things freeze?

Based on the temperature, do you think animals are trying to stay warm or to cool off?

Based on the temperature, if there's precipitation, do you think it will be rain, snow, or ice. Why?

If temperatures rise by 30 degrees Fahrenheit, will it be at, above, or below freezing?

Use the chart to answer the questions.

| Ruby-throated hummingbird migration | kilometers | miles |
|---|---|---|
| From Canada to Gulf of Mexico | 1,600 | 1,000 |
| Across the Gulf of Mexico | 845 | 525 |
| Into Central America | 1,600 | 1,000 |

How many total miles would a Ruby-throated hummingbird fly if it travels all the way from Canada to Central America?

How many miles will it fly if it stops at the first sight of land after flying over the Gulf of Mexico?

Scientists estimate that it takes a hummingbird 20 hours to fly across the Gulf of Mexico. Approximately how many kilomoters or miles an hour is the bird flying?

Could you walk that fast?

# Math Cards

*Objective Core Mathematics  Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (up to 10)*
*Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.*
*Use numbers, up to 10, to place objects in order, such as first, second, and third, and to name them*
*For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.*

## Math Card Games

(Make four copies of the math cards to play these games):

**Tens Make Friends Memory Game** is a combination of a memory and adding game.

- Play like the memory game, above.
- If the animal numbers add up to 10, the child keeps the pair and takes another turn.
- If they do not add up to ten, the player should turn the cards back over and it is another player's turn.

**Go Fish for Fact Families** is a twist on "Go Fish."

- Shuffle cards and deal five cards to each player. Put the remaining cards face down in a draw pile.
- If the player has three cards that make a fact family, he/she places them on the table and recites the four facts related to the family. For example, if someone has a 2, 3, and 5, the facts are: 2 + 3 = 5, 3 + 2 = 5, 5 – 2 = 3, 5 – 3 = 2.
- The player then asks another player for a specific card rank. For example: "Sue, please give me a 6."
- If the other player has the requested card, she must give the person her card.
- If the person asked doesn't have that card, he/she says, "Go fish."
- The player then draws the top card from the draw pile.
- If he/she happens to draw the requested card, he/she shows it to the other players and can put the fact family on the table. Otherwise, play goes to the next person.
- Play continues until either someone has no cards left in his/her hand or the draw pile runs out. The winner is the player who then has the most sets of fact families.

1

2

3

4

5

6

7

8

9

# Monarch Migration Map Activity

*Objective: reading maps, geopgraphy, know that plants and animals live in different locations*



source of maps: http://www.fs.fed.us/wildflowers/pollinators/monarchbutterfly/migration/index.shtml

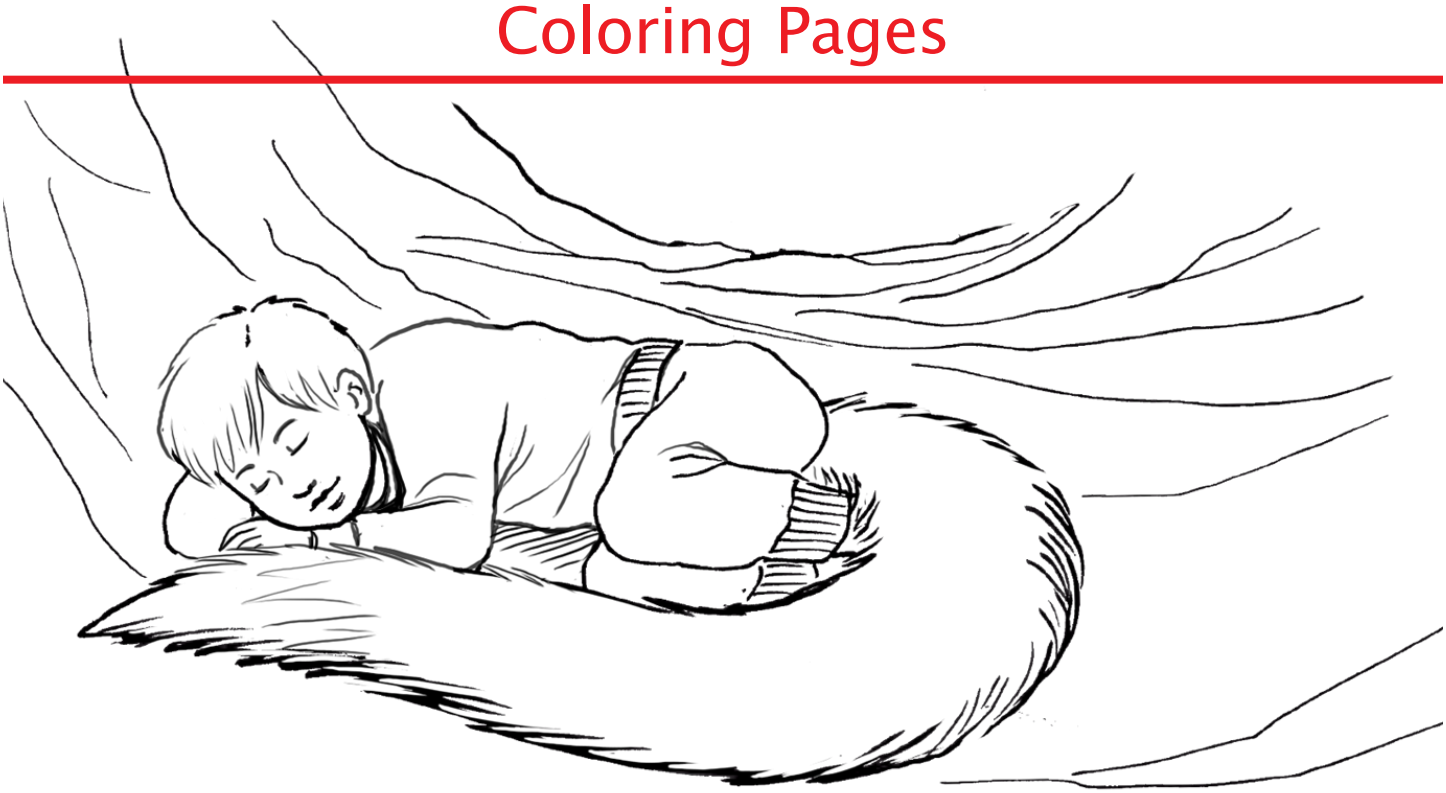
Which direction (north or south) do the monarchs fly in the fall (top map)?

There are three malin over-wintering areas: California, Mexico, and Florida. Can you find them on the maps?

Do monarchs spend any time in Canada?

Can you find the state or province in which you live on the maps? Do monarchs live in or pass through your state or province?

# Coloring Pages



# Answers

## Silly Sentences

1. Living things adapt to seasonal changes in different ways. Animals have adaptations to help them survive hot weather in the summer and cold weather in the winter.
2. These adaptations can be changes in their bodies (physical) or they can be changes in things that the animals do (behavioral).
3. Animals raised by a parent (or parents) learn some behaviors. Other animals never know their parents and survive purely on instinct.
4. Many animals move to a different location (migrate) when the weather starts to get cold. They are following not only warmer weather and seeking shelter, but also are often following food sources.
5. Birds are the most obvious migrators to most of us because they are so visible flying in huge flocks along bird "flyways" that run north to south.
6. But not all birds migrate—some stay through cold weather if there are enough food sources. Some birds that don't migrate include cardinals, crows, sparrows, black-capped chickadees, hawks, and starlings. A few mammals (whales) and insects (Monarch butterflies) migrate. Even some grandparents migrate by spending the winter in warmer climates and coming back in the spring as the weather warms and the snow melts.
7. Other animals go to sleep for long periods during the winter (hibernation in mammals or brumation in reptiles). These animals slow their systems down so they don't need as much energy: their hearts beat slower, they don't breathe as often, and sometimes their body temperatures even drop.
8. Some animals might go to sleep for several weeks (dormancy) but then wake up to go to the bathroom or get something to eat before going back to sleep again.

1. To cool down in hot weather, some mammals pant, or breathe in and out very quickly with their tongues sticking out.
2. The moisture on their tongues cools the air going into their bodies, helping them to cool down.
3. All kinds of animals jump into or spray themselves with water or mud to cool down. The cooler temperature of the water or mud helps to cool their bodies off.
4. Some animals release water onto their outer skin (sweat). The evaporating water then cools the animals' bodies.
5. Other animals don't make their own water or sweat so they have to put water onto their skin by licking themselves (spit bath).
6. Other animals might burrow into cool soil, hide under rocks, or lay in cool dirt.
7. Some animals hide in the shade where it is cooler.
8. Some animals even migrate to higher elevations or cooler climates.
9. Still other animals might sleep or nap during the day and be more active in the evening or at night when it is cooler.

## Analogies

Cold is to winter as hot is to summer
Deer is to mammal as butterfly is to insect
Drey is to tree as den is to ground
Wing is to fly as paw is to dig
Tail is to wrap as blanket is to cover
Hibernate is to sleep as migrate is to move
Cub is to bear as fawn is to deer
Buzz is to bee as squeak is to mouse
Feather is to bird as fur is to bear

## Word Search

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

| | |
|---|---|
| BEAR | 6,E |
| BEES | 6,E |
| BIRD | 7,D |
| DEER | 10.D |
| FOX | 9,H |
| HIBERNATE | 7,B |
| HUMANS | 4,B |
| MICE | 6,C |
| MIGRATION | 2,I |
| MUD | 4,D |
| SNOW | 2,C |
| TAIL | 3,D |
| WINTER | 2,F |

## Identify the Season

1. Black bears hibernate in warm dens. Winter
2. Squirrels use spit to cool down. Summer
3. Some birds and mammals shiver to warm themselves when it is cold.
4. Mammals sweat. Winter
5. Some grandparents move to a home in warmer climates for a few months. Winter
6. Many animals swim in cool water or dig into mud. Summer
7. Some animals sleep during the heat of the day and only come out at night when it is cooler. Summer
8. Some animals sleep during the night and only come out during the day when the sun is high and it is warmer. Winter
9. Some animals cuddle together to stay warm. Winter
10. Some animals rest in the shade. Summer
11. Some animals like black bears lay flat on the cool dirt. Summer
12. Some animals migrate to warmer climates where there is more food available. Winter
13. Some animals migrate to cooler areas (higher elevations or better breezes). Summer
14. Some mammals grow thicker fur. Winter
15. Some animals breathe in and out very quickly to cool down; called panting in mammals and gaping in birds. Summer

## Humans in Winter and Summer

All are true.

## Instinct or Learned Behavior?

Box turtles dig down into the mud and goes to “sleep” when it gets cold. Painted turtles slip into cool water or mud to cool off when it gets hot. instinct

Black bears find a cozy den to spend the winter. Black bears lie in cool dirt to stay cool in the heat. learned behavior

Squirrels store nuts and food for the winter and make large nests called “dreys.” During the cold winter, they cuddle together for warmth inside the drey. They cool off in the heat with spit baths. learned behavior

Monarch butterflies migrate to the same tree where their great-great grandparent spent the previous winter! Other butterflies, like the black swallowtail hide from heat by moving to cooler locations nearby. instinct

Wood frogs crawl under leaves and let half of their bodies freeze. They’ll thaw and move around once spring comes. They dig into cool, damp leaves to stay cool too. instinct

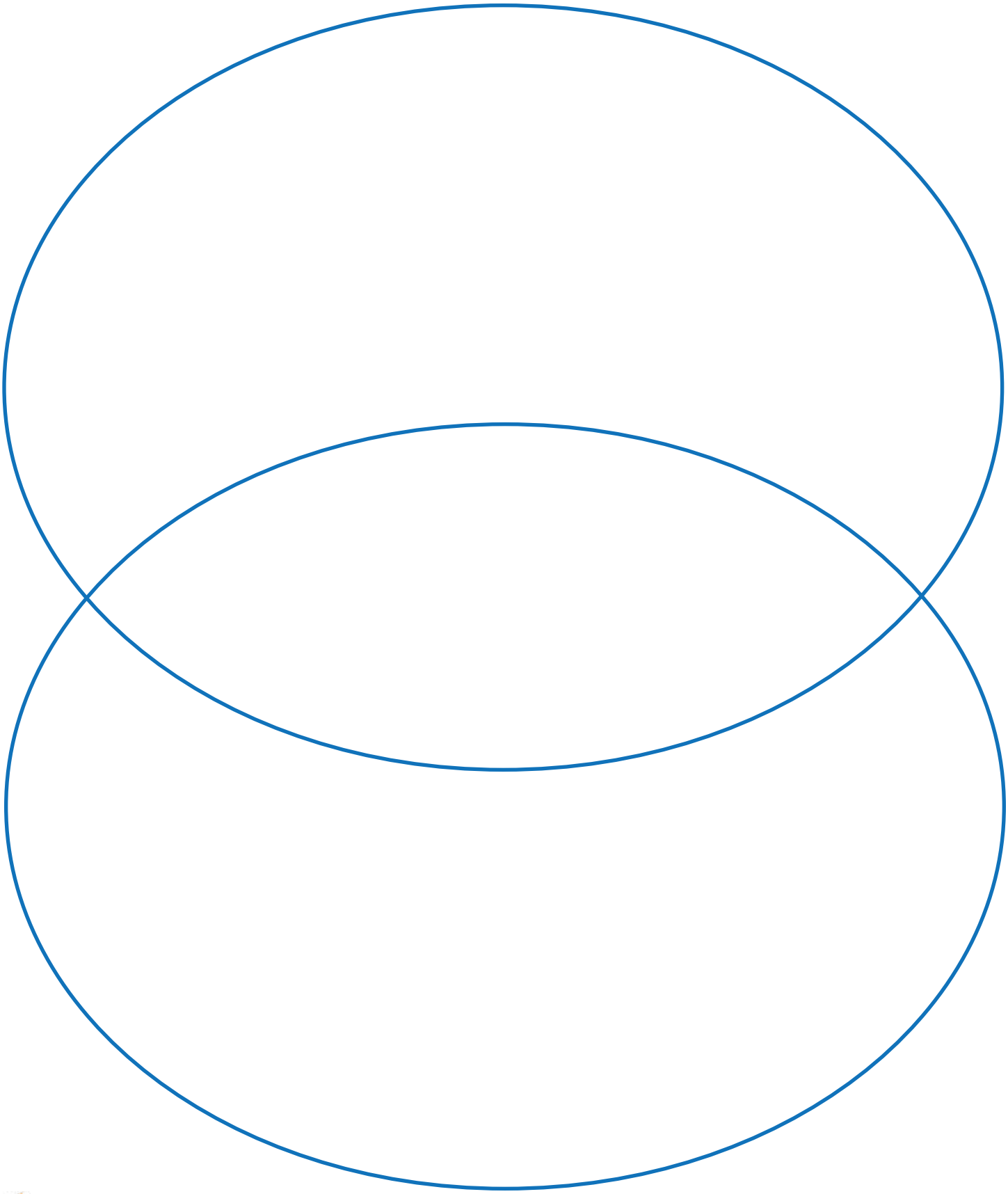
Humans wear warm coats, hats and mittens to stay warm in cold, outside weather. Come summer, they shed the warm clothing and wear cool shorts, short-sleeved shorts, and even flip-flops. learned behavior

# Appendix A—"What Children Know" Cards

| | |
|---|---|
| Question:<br><br>My answer:<br><br>This information is correct!<br>This information is not correct; can you find the correct information? | Question:<br><br>My answer:<br><br>This information is correct!<br>This information is not correct; can you find the correct information? |
| Question:<br><br>My answer:<br><br>This information is correct!<br>This information is not correct; can you find the correct information? | Question:<br><br>My answer:<br><br>This information is correct!<br>This information is not correct; can you find the correct information? |

# Appendix B—Venn Diagram

Compare and contrast how two different animals survive winter.



# Appendix C—Rhyming Cards

Cut out, mix up and then match the rhyming words from the stories. Can play as “Memory.”

| | |
|---|---|
| **tight** | **right** |
| **draping** | **caping** |
| **mud** | **crud** |

| | |
|---|---|
| oozing | snoozing |
| feather | weather |
| fluffing | puffing |

| | |
|---|---|
| plump | lump |
| wheezing | teasing |
| hair | wear |

| | |
|---|---|
| warming | storming |
| bunch | lunch |
| center | enter |

| | |
|---|---|
| aloft | soft |
| nest | guest |
| guide | glide |

| | |
|---|---|
| wing | bring |
| below | snow |
| snow | slow |

| | |
|---|---|
| freeze | leaves |
| frozen | chosen |
| sky | fly |

| | |
|---|---|
| skies | goodbyes |
| clothes | nose |
| clothes | bows |

| | |
|---|---|
| tongue | sprung |
| puffing | huffing |
| ponds | fronds |

| | |
|---|---|
| sunfish | squish |
| shade | jade |
| branches | chances |

| | |
|---|---|
| up | pup |
| patches | scratches |
| new | hue |

| | |
|---|---|
| hair | wear |
| hive | survive |
| chilling | willing |

| | |
|---|---|
| lick | trick |
| summer | bummer |
| wings | brings |

| | |
|---|---|
| shelter | swelter |
| night | bite |
| beams | dreams |

| | |
|---|---|
| dirt | hurt |
| bits | fits |
| heat | beat |

| | |
|---|---|
| site | daylight |
| clothes | toes |
| flip-flops | tank tops |