

Teaching Activity Guide

Desert Baths

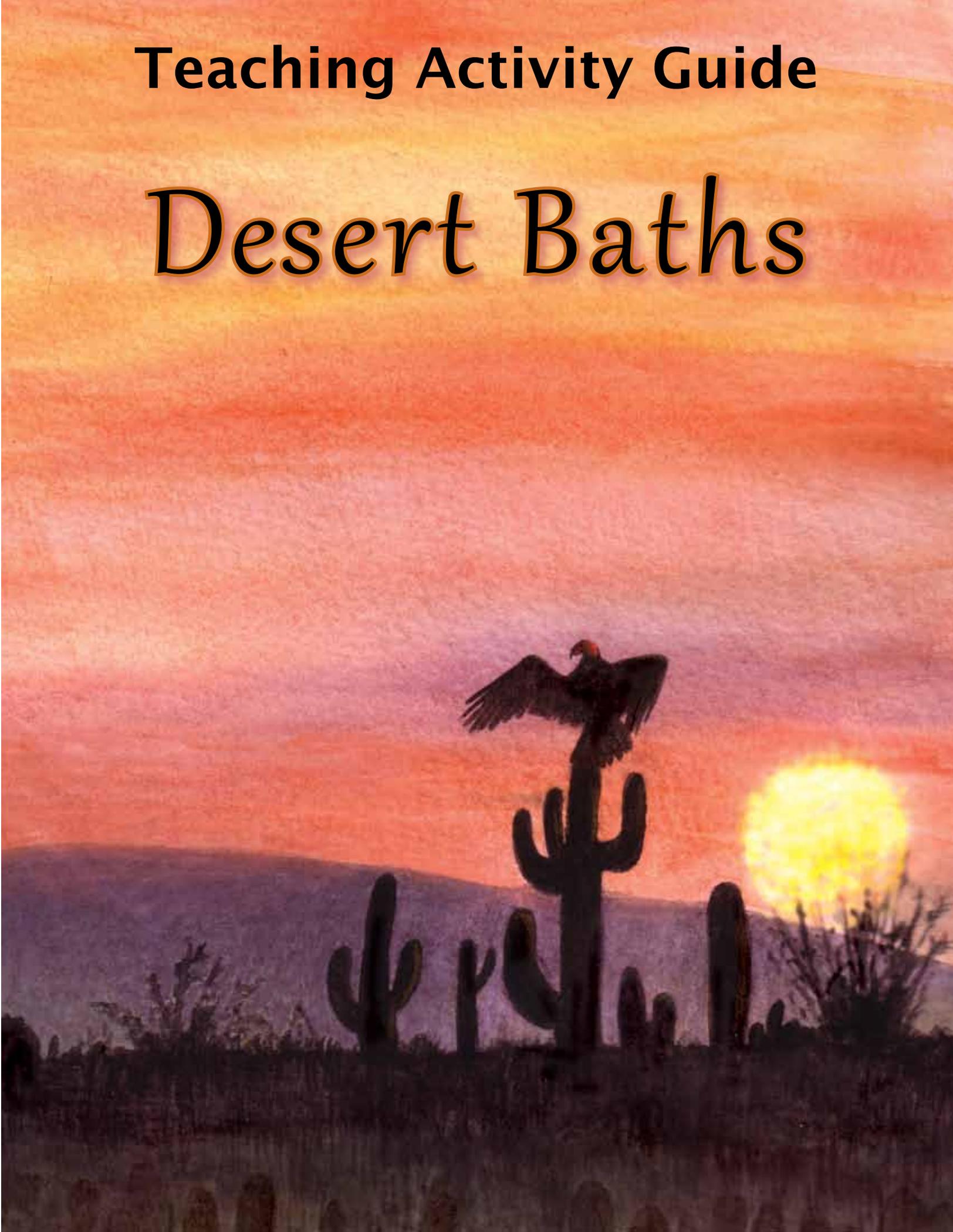


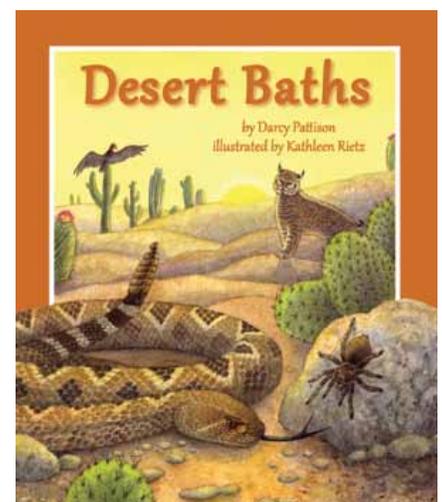
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by Darcy Pattison
illustrated by
Kathleen Rietz

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 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 is 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 learning) 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, aquariums, 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.”

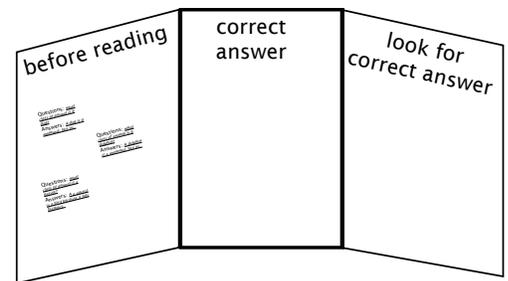
Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.

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

Why do humans take baths or showers?

What are some ways that animals clean themselves?

Is there a lot of water in deserts?

How do you think animals that live in the desert might clean themselves?

Are all animals active at the same time of day?

What are some desert animals that are active during the day?

What are some desert animals that are active during the night?

What are some ways that you can tell what time of day it is without looking at a clock?

Can you do the same thing at night with the moon? Why or why not?

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.

Humans take baths or showers with fresh water. Why don't desert animals use water to keep clean?

What are some ways that desert animals clean themselves?

Why do some animals take "spit baths?"

Pick another habitat and describe some ways you think animals that live there might clean themselves.

Why is it funny that the author chose to write about desert animals taking baths?

Which animal licks its eyeball to keep it clean? Why don't humans have to do that?

Observation Skills: Art Scavenger Hunt

Objective Core Language Arts Integration of Knowledge and Ideas: Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

Use illustrations and details in a story to describe its characters, setting, or events.

Describe the movement of the sun in the pictures to the time of day.

Where is the moon when you first see it in the pictures?

How can you tell when it is almost time for the sun to rise?

Looking at the pictures, how is the desert similar to where you live and how is it different?

What insects do you see in the pictures?

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 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. 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

See Glossary for words in Spanish and the definition in English.

| Adjective | Noun | | | Verb |
|------------|---------------------|---------------------|----------------------|-----------|
| active | animal | dusk | rain | attract |
| clear | anointing | dust | reptile | bathe |
| cold | ant bath | energy | roadrunner | blanket |
| cool | bat | evening | roost | blossom |
| dry | bath | eyelids | scaled quail | catch |
| early | bladder | fawn | scattering | drink |
| glittering | blanket | germ | season | flap |
| heavy | bloom | heat | shade | flutter |
| high | bobcat | hole | skin | forage |
| hot | bug | hummingbird | star | glisten |
| long | burrow | hygiene | sun | graze |
| moist | cactus | javelina | sunbath | perch |
| nocturnal | canyon | land | sunlight | pollinate |
| shady | cave | mammal | sunset | preen |
| thick | climate | midday | temperature | rise |
| warm | cloud | midnight | time | scrape |
| western | coyote | mud | turkey vulture | set |
| | crevice | mule deer | vegetation | shed |
| | dawn | night | water | shimmer |
| | day | noon | week | shuffle |
| | desert | nutrient | west | soar |
| | desert tortoise | pallid bat | western banded gecko | store |
| | dew | parasite(s) | wings | stretch |
| | diamondback rattler | plant | | survive |
| | dirt | prickly pear cactus | | wake |
| | doe | quart (qt) | | wallow |

Cross-Curricular: Silly Sentences

1. Some _____s are _____ and some are _____, but all deserts have a _____.
noun adjective adjective adjective noun
2. Deserts receive an average of less than ____ to ____ inches (25 to 30 cm) of _____ per year!
number number noun
3. The deserts of the American Southwest average between ____ to ____ inches of rain a year.
number number
4. Desert _____s and _____s must survive with little _____.
noun noun noun
5. In some ways, _____s act like a _____ at night.
noun noun
6. Thick, heavy clouds help keep warm _____s on land.
noun
7. When there are no clouds at _____, the land loses all the _____ from the _____ that had built up all day.
noun noun noun
8. Because deserts are so _____, they don't have many have many _____s.
adjective noun
9. Deserts that get very _____ during the _____ can get very _____ at _____.
adjective noun adjective noun

Language Arts: Parts of Speech

Objective Core Language Arts Vocabulary Acquisition and Use:

Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.

Choose words and phrases to convey ideas precisely.

Some words can be a noun or a verb. Identify whether the underlined word is used as a noun or a verb.

1. Clouds act like a blanket at night.
2. Clouds blanket the earth, keeping in the heat.
3. Many animals use the desert tortoise's burrow as a safe shelter.
4. The desert tortoise burrows into the earth to stay cool during the hottest times of the day.
5. The desert dawn sends light washing over the land.
6. It only dawned on her that it was a joke when she saw everyone laughing.
7. The roadrunner dashes from shade to shade.
8. Use the glasses to shade your eyes from the bright sun.
9. The doe grooms the fawns.
10. The bride and groom danced together.

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

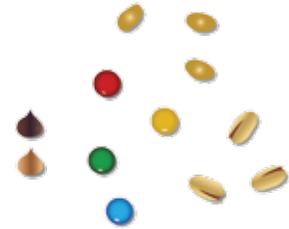
DAWN
VULTURE
DESERT
BATHE
CLEAN
DUST
SUN
PREEN
SOAR
FAWN
DUSK

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.

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.

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

| | | | | |
|-----------|--|--|--|--|
| 10 | | | | |
| 9 | | | | |
| 8 | | | | |
| 7 | | | | |
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |
| attribute | | | | |

Classifying 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, 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 | | |
| 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 |  |  |
|--|--------------------------------|---|--|
| 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 have more than one | walks/runs | | |
| | crawls | | |
| | flies | | |
| | slithers | | |
| | swims | | |
| | climbs | | |
| | hops | | |
| Backbone | backbone/vertebrate | | |
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| 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 | | |
| 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 eaters (herbivore) | | |
| | meat eater (carnivore) | | |
| | both (omnivore) | | |

| | Animals |  |  |
|--|--------------------------------|---|--|
| Appendages | Legs (how many) | | |
| | flippers/fins | | |
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| | 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 have more than one | walks/runs | | |
| | crawls | | |
| | flies | | |
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| | climbs | | |
| | hops | | |
| Backbone | backbone/vertebrate | | |
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| 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 | | |
| 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 | | |
| Metamorphis? | complete | | |
| | incomplete | | |
| | none | | |
| Teeth | sharp | | |
| | flat | | |
| | no teeth (bill/beak) | | |
| Food | plant eaters (herbivore) | | |
| | meat eater (carnivore) | | |
| | both (omnivore) | | |

Animal Card Games:

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

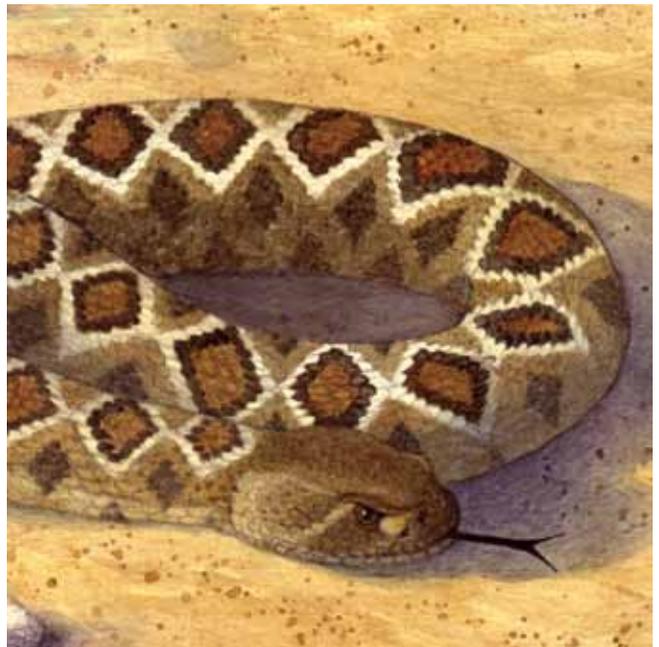
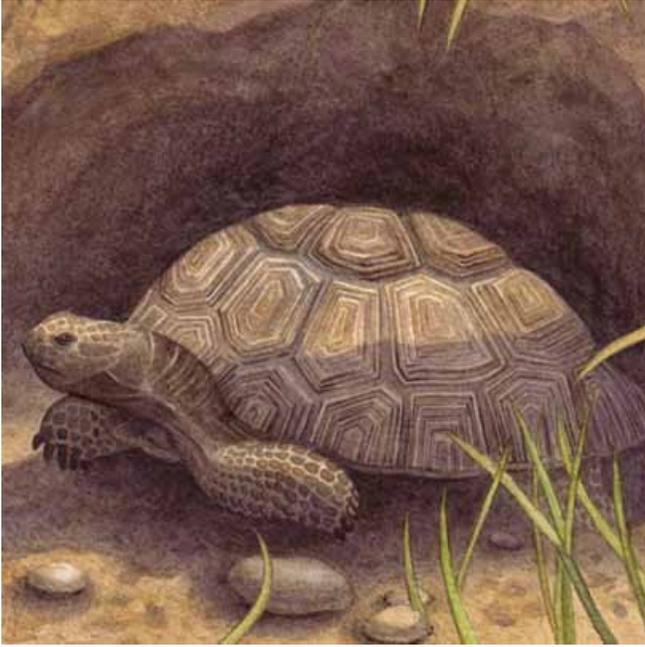
| | |
|---|-------------------------|
| where the animals live (habitat) | tail, no tail |
| number of legs (if the animals have legs) | colors or skin patterns |
| how they move (walk, swim, jump, or fly) | animal class |
| type of skin covering (hair/fur, feathers, scales, moist skin) | |
| what they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

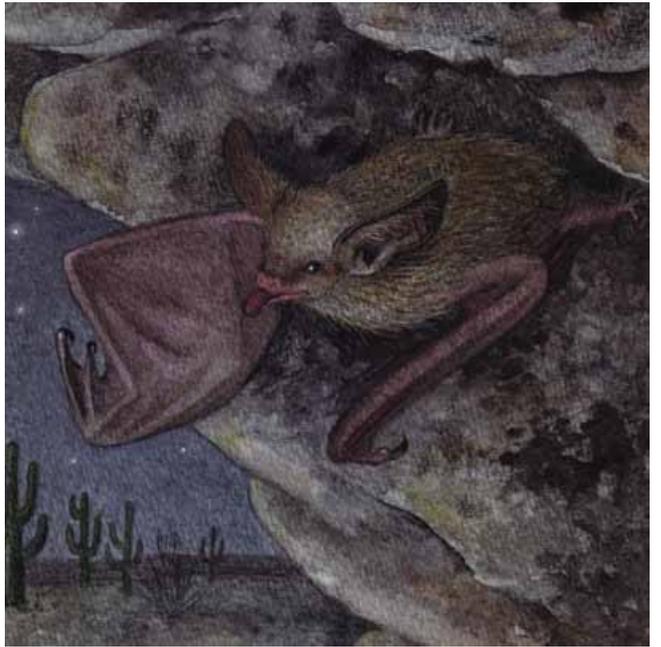
Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not 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.

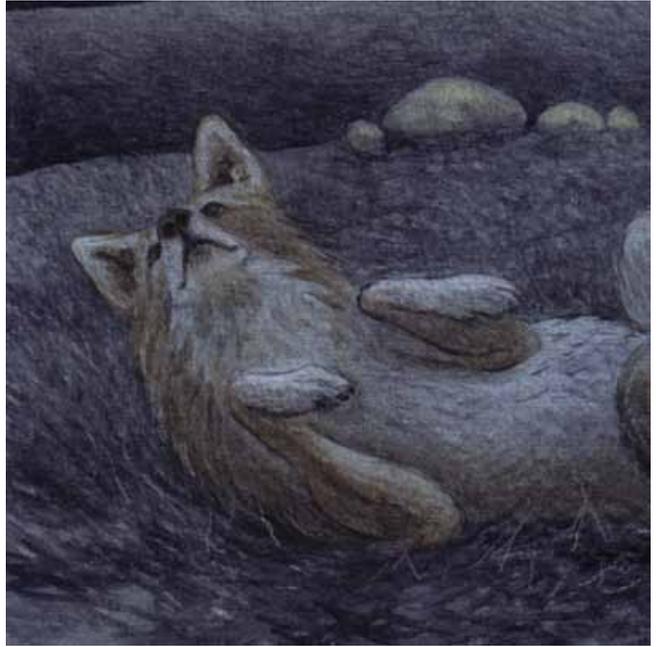
Who Am I? Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Have each child put on a "card necklace" without looking at it so the card hangs down the back. The children get to ask each person one "yes/no" question to try to guess "what they are." If a child answering the question does not know the answer, they should say they 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, can 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.

Animal Sorting Cards







Adaptations

Adaptations help animals to live in their habitat: to get food and water, to protect themselves from predators, to survive weather, and even to help them make their homes. Here are a few different types of adaptations.

Physical Adaptations

Use the illustrations in the book to see how many physical adaptations you can see for each animal.

body parts

teeth—depends on type of food eaten
feet, flippers, fins—ability to move
placement of eyes
gills, lungs, or other—how does the animal get oxygen
ears—or how the animal hears/senses

body coverings

hair or fur
feathers
scales
moist skin

camouflage and protection

color of skin or pattern to blend into background
mimicry: pretending to be something else to fool predators
poisonous or stinky smells

Behavioral Adaptations

instinct: behaviors or traits that the animals are born with
learned behavior: traits that animals learn to improve their chances of survival or to make their life easier
social groups versus solitary living
communication with other animals
defense/camouflage
reaction to cycles (day/night, seasons, tides, etc.)
migration: the seasonal movement of animals from one location to another
hibernation: a long, deep sleep in which the animal's breathing and heartbeat are slower than usual

Desert Adaptations True or False?

What are some ways that the animals of the desert adapt to survive?

1. Some clean themselves with their tongue.
2. Many of them don't use water to bathe themselves, they use other ways like shaking, shedding, licking, anting, or rolling in mud or dust.
3. Some burrow into the cool ground.
4. Some only come out at night when it's cooler.
5. Many come out in the early morning and late afternoon, avoiding the hot noon hours.
6. Coyotes will eat almost anything.
7. Desert tortoises can store up to a quart of water in their bladder.
8. Adult desert tortoises can go for years without water.
9. Desert tortoises dig catch basins in the soil to catch rain.
10. Turkey vultures don't have feathers on their head so they get less dirty when eating.
11. Turkey vultures soar without flapping their wings often so they don't use up energy while in long searches for food.
12. Pallid bats can fit into crevices in canyon walls or deep in caves where it's cooler.
13. Diamondback rattlesnakes will go into the burrows of other animals to cool down or hide.
14. Mule deer will eat a wide variety of vegetation to get all the nutrients that they need.

Desert True or False?

Do you think the statement is true or false:

1. The desert is always hot and dry.
2. The only animals that can live in the desert are lizards and snakes.
3. An adult desert tortoise can survive for years without water.
4. Animals are active in the Sonoran Desert at all hours of the day.
5. A sun bath is when a bird spreads out its wings in the sunlight to maintain body temperature and feather health.
6. All deserts average less than 10-12 inches of rain a year.
7. All animals need water to get clean.
8. Roadrunners need to find a bird bath to take a bath.
9. Nocturnal animals do most of their hunting at night.
10. Diamondback rattlesnakes shed their skin one to three times per years.

Science Journal

desert

my definition

my drawing

bath

my definition

my drawing

Patterns in the Sky

Objective: The Sun appears to move across the sky in the same way every day, but the Sun's apparent path changes slowly over seasons.

Observe and describe the apparent motion of the sun and moon over a time span of one day. Identify changes in things seen in the sky.

Recognize that the Sun and the Moon appear to rise and set.

We see all kinds of things moving through the sky on a regular basis. Birds, insects, and even airplanes move quickly. They are here one minute and gone the next. Planets and stars move through the sky too but they move so slowly that we are only aware that they have moved when we compare their location from night to night, week by week, month by month. But, we can watch the Sun and the Moon move through the sky on a daily basis and in a regular pattern.

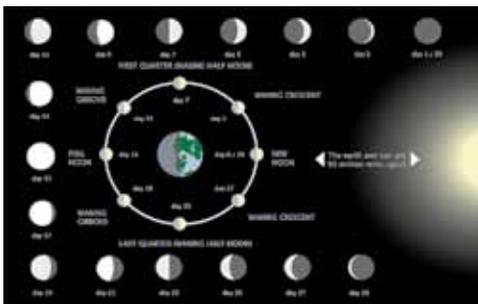
The Sun and the Moon both rise in the east and set in the west. When looking at maps, north is usually at the top, east is on the right, south is on the bottom, and west is on the left. Look at the position of the sun and the first quarter moon as they move through the sky, shown in the images on the next few pages.

What direction must we be facing if we see the Sun rising on our right? (north)

Have you ever seen the Moon in the sky during the day? If so, what did it look like? What time of day was it?

How is the night sky different than the sky during the day? Draw a picture of both.

While the time that the Sun comes up in the morning (sunrise) and goes down at night (sunset) changes by a matter of minutes each day, the moonrise and moonset change by about 50 minutes (almost an hour) each day. The Moon doesn't actually change shape during it's phases but it looks like it does to us on Earth.



The moon is closest to the Sun in its orbit during a New Moon. A New Moon rises about the same time as the Sun and sets about the same time as the Sun sets.

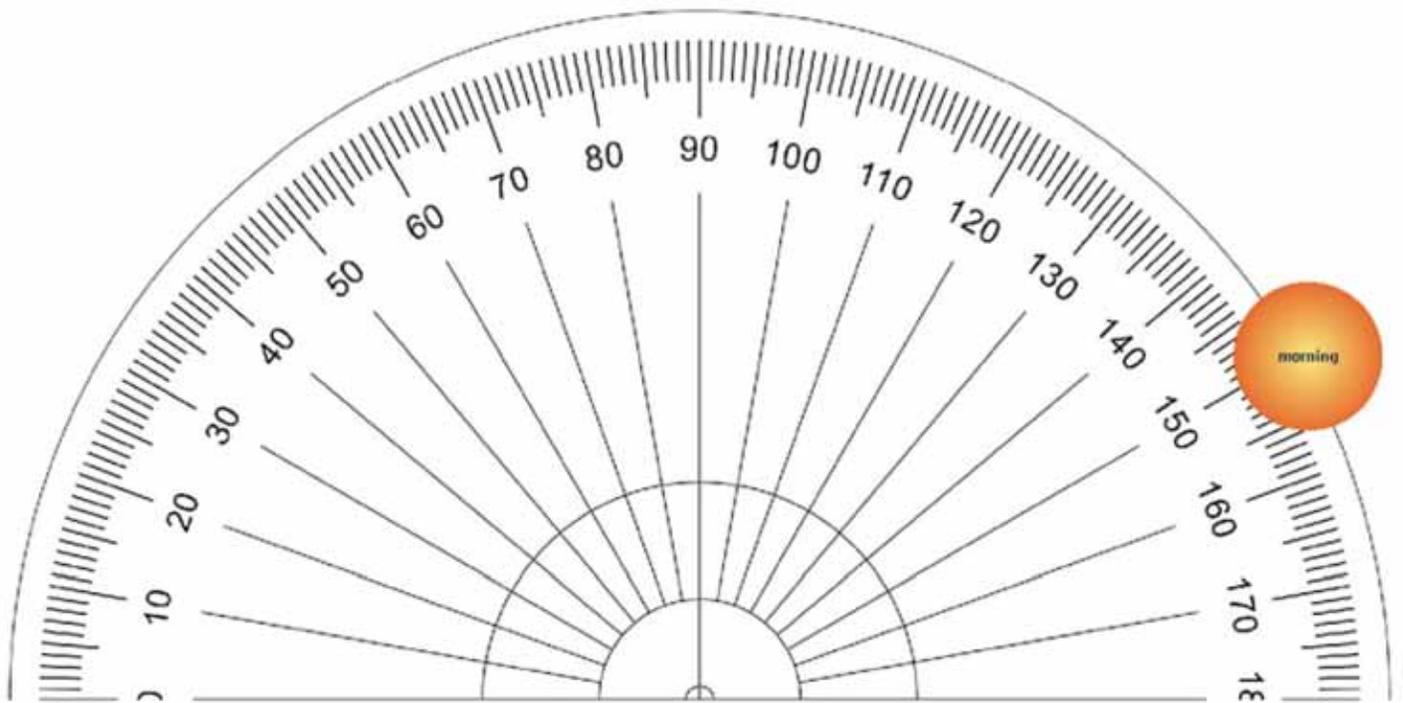
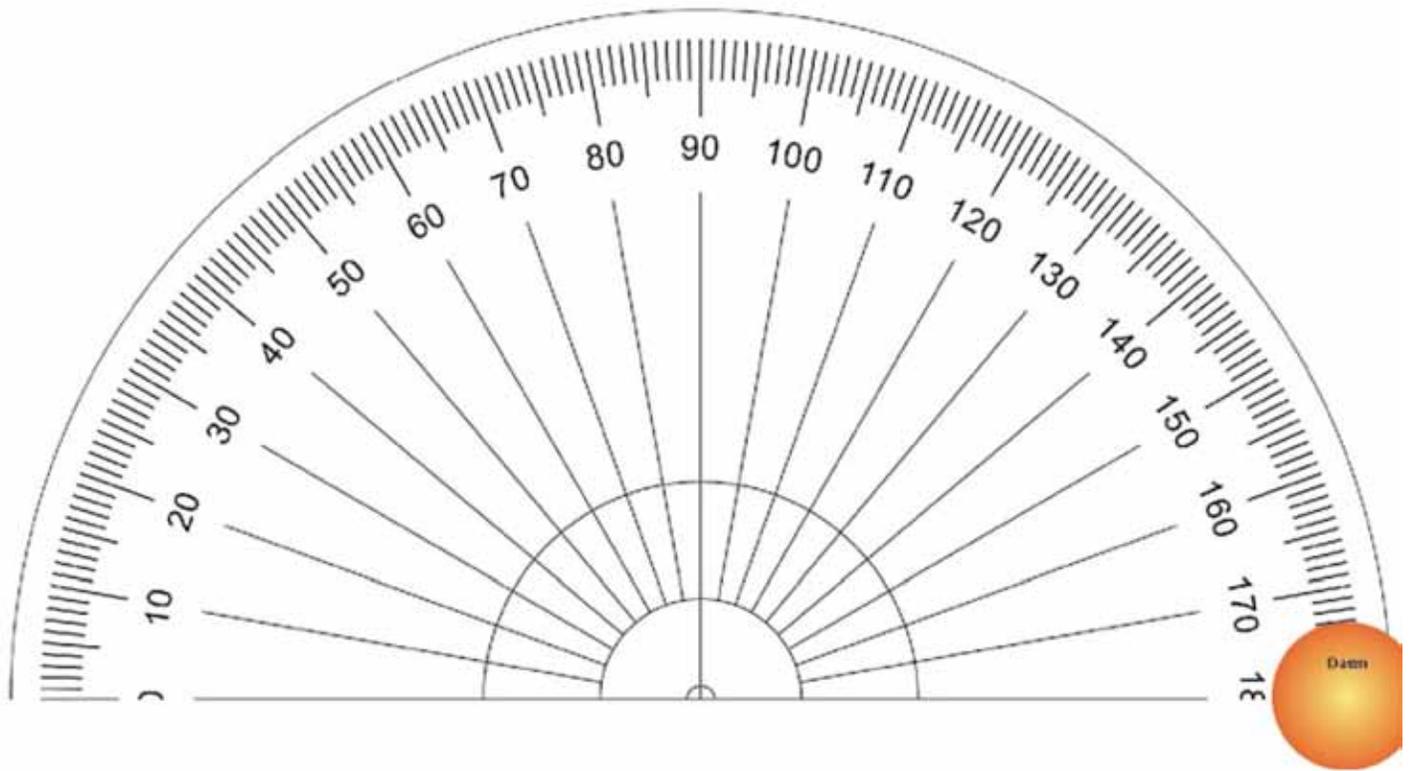
On the other hand, the full moon rises about the same time as the Sun sets and then sets about the time that the Sun rises the next morning.

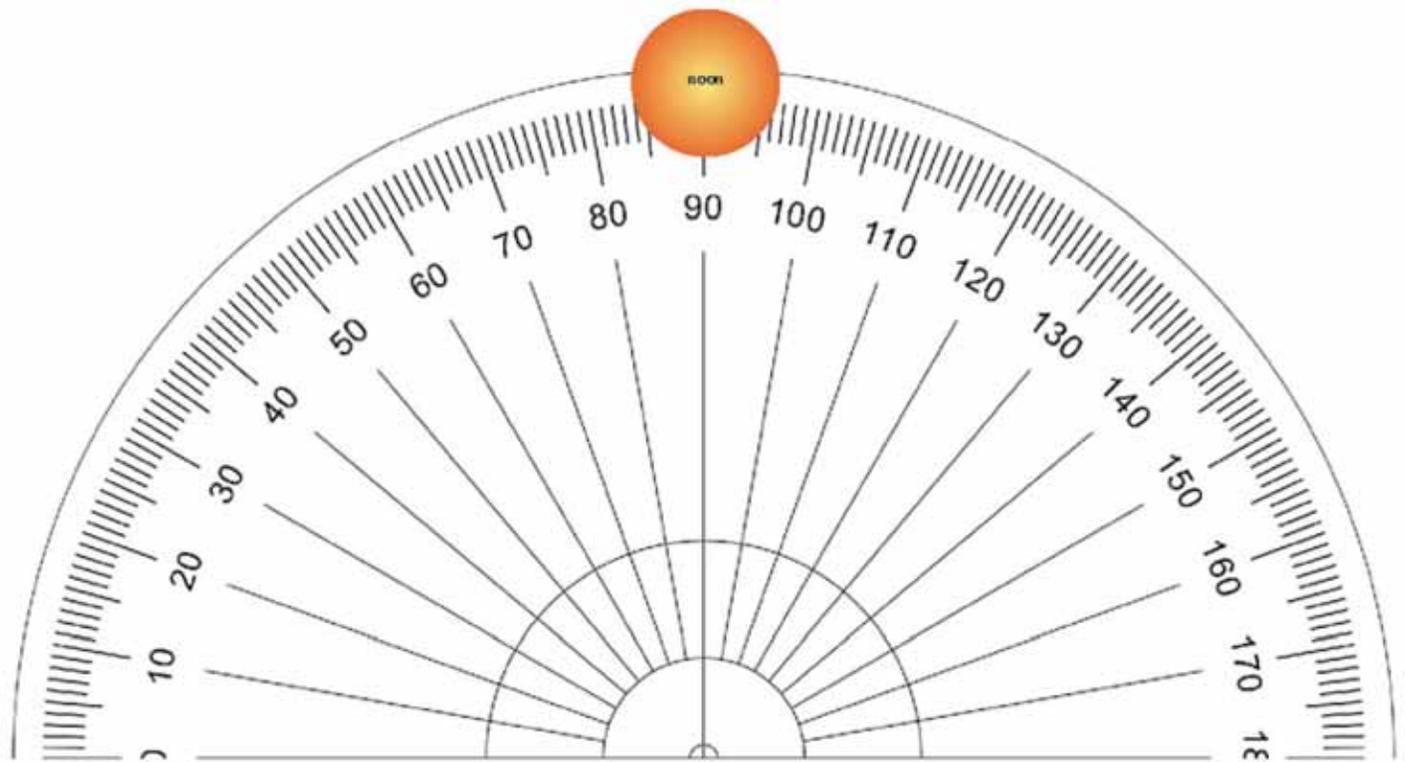
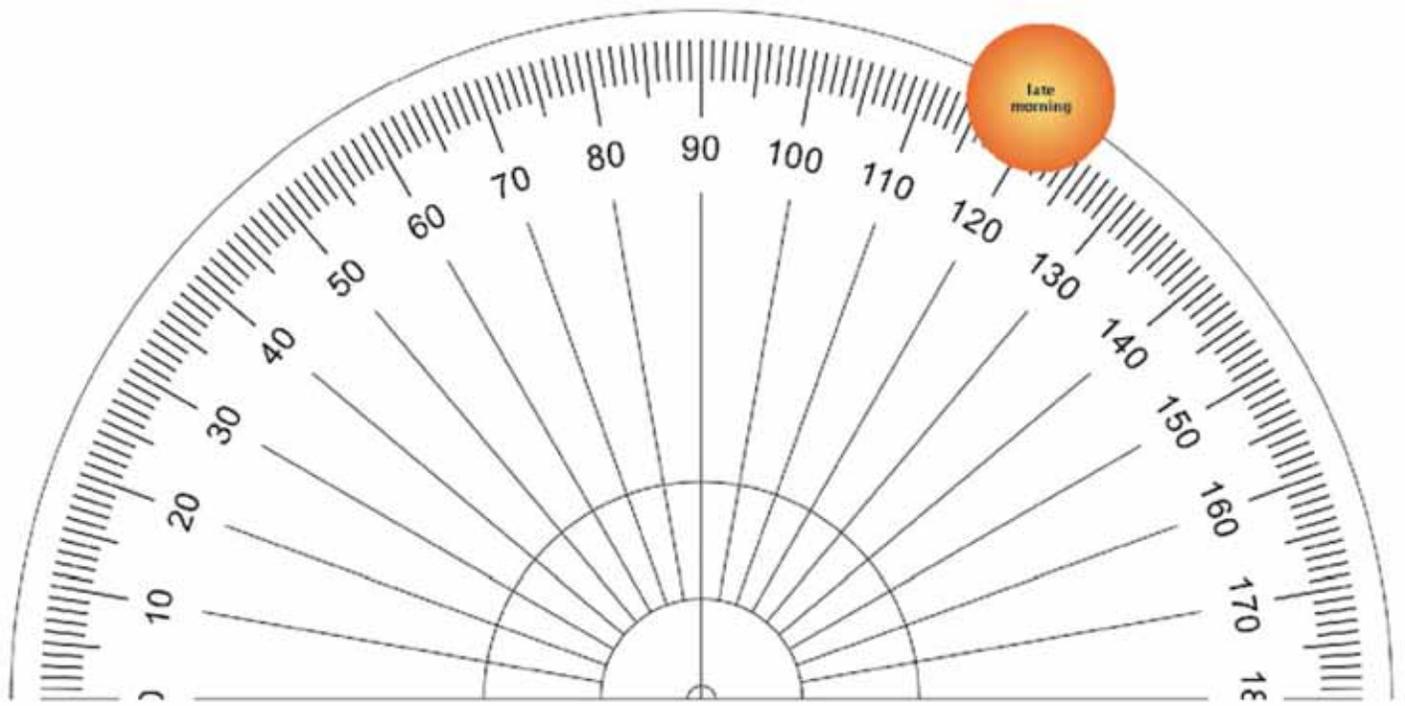
The moon in the story is a first quarter moon that rises in the early afternoon.

Use the protractor in Appendix D to show the Sun (and Moon if you can see) movement through the sky on a given day. Draw an approximation of where the Sun is and label the time. If you see the moon, make sure show what it looks like (phase), where it is, and the time.

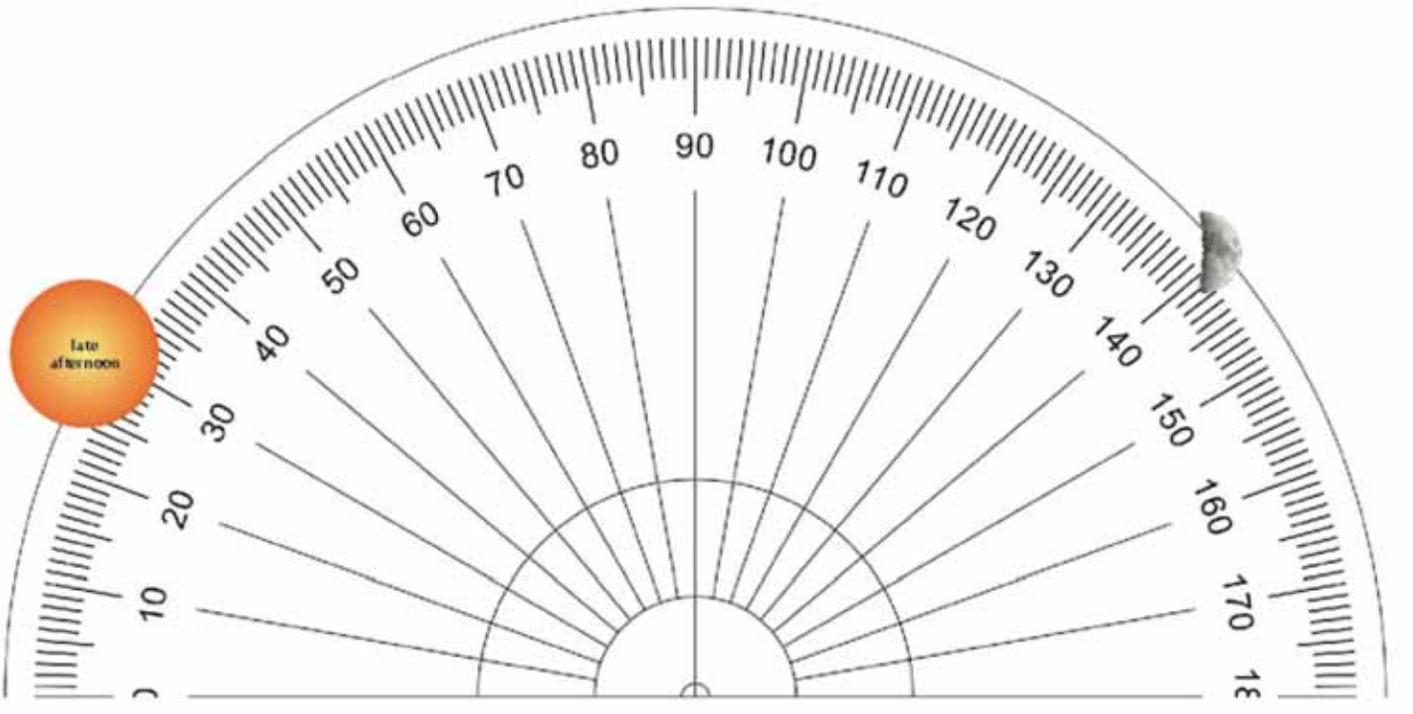
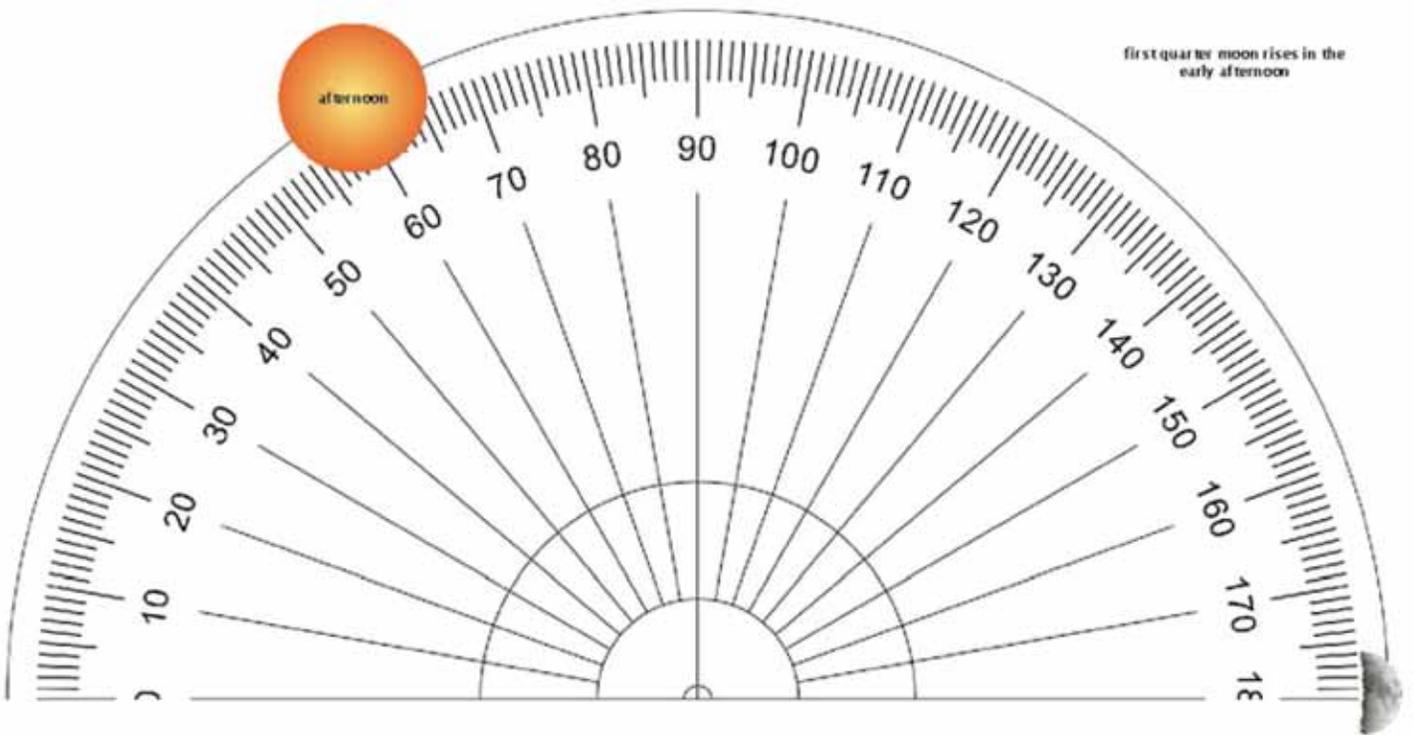
Using the protractor in Appendix D, draw the approximate locations of the Sun and New Moon moving through the sky together. Label that image "New Moon." Why do you think we can't see the New Moon?

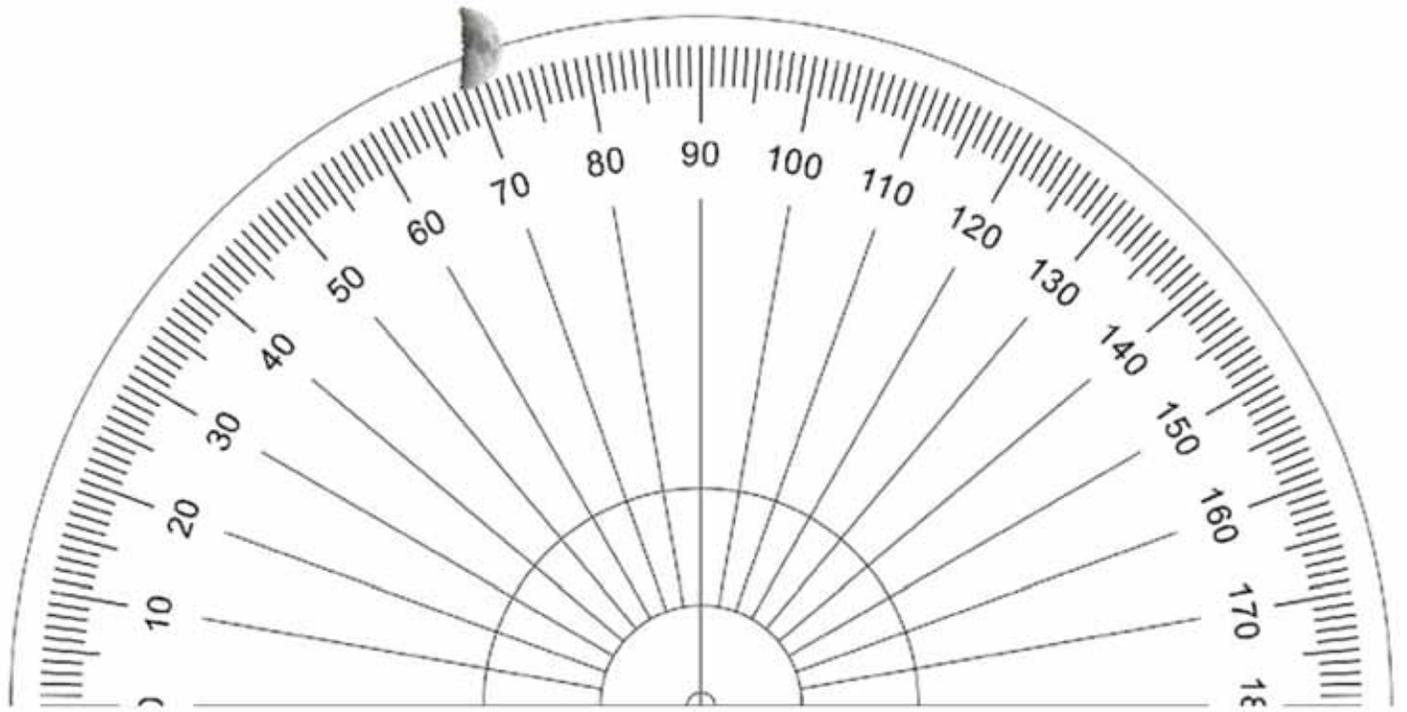
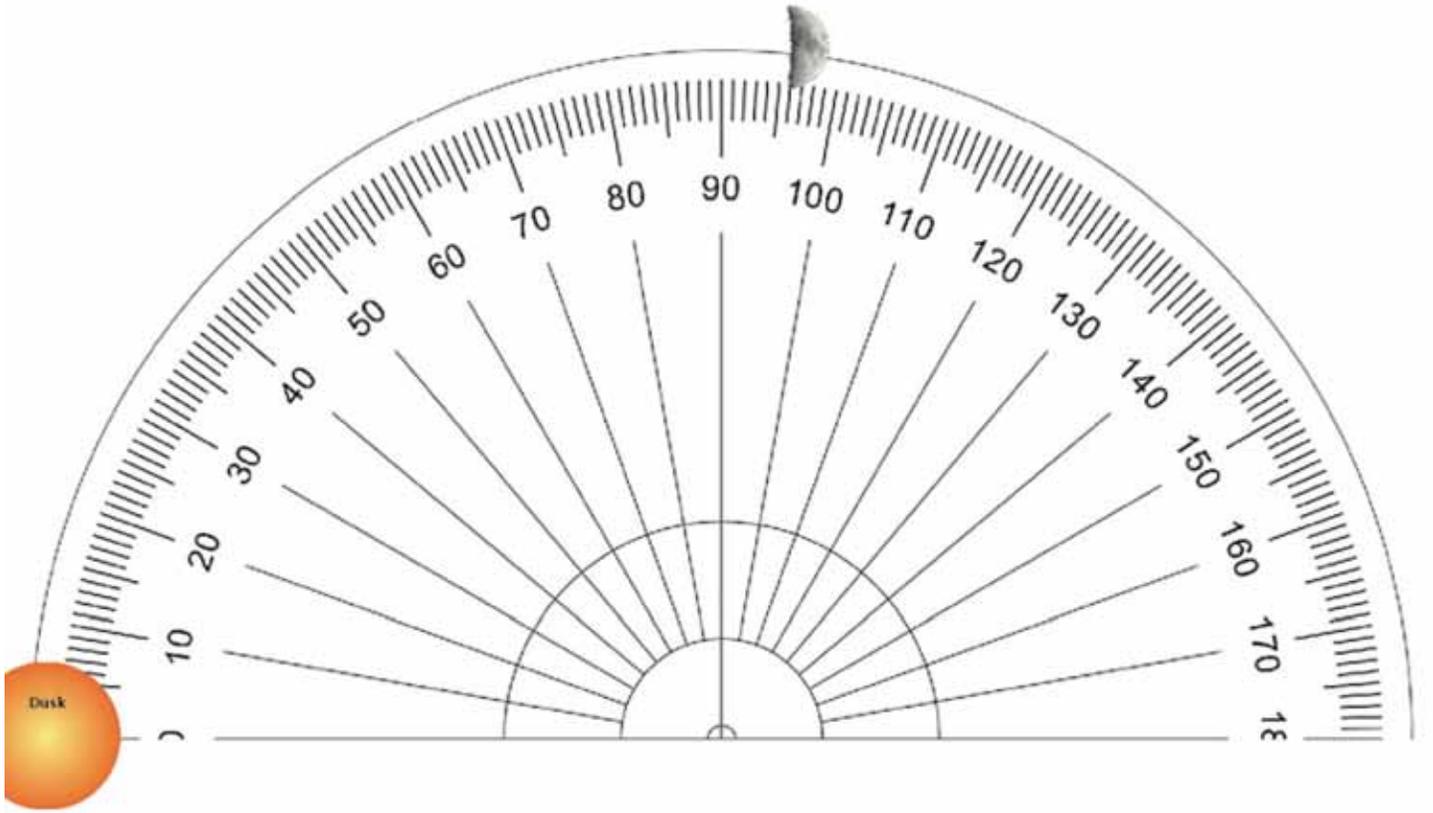
Using the protractor in Appendix D, draw the Sun setting and the Moon rising about the same time. Label that image "Full Moon." Why do you think we can't see the Full Moon at the same time as the Sun?

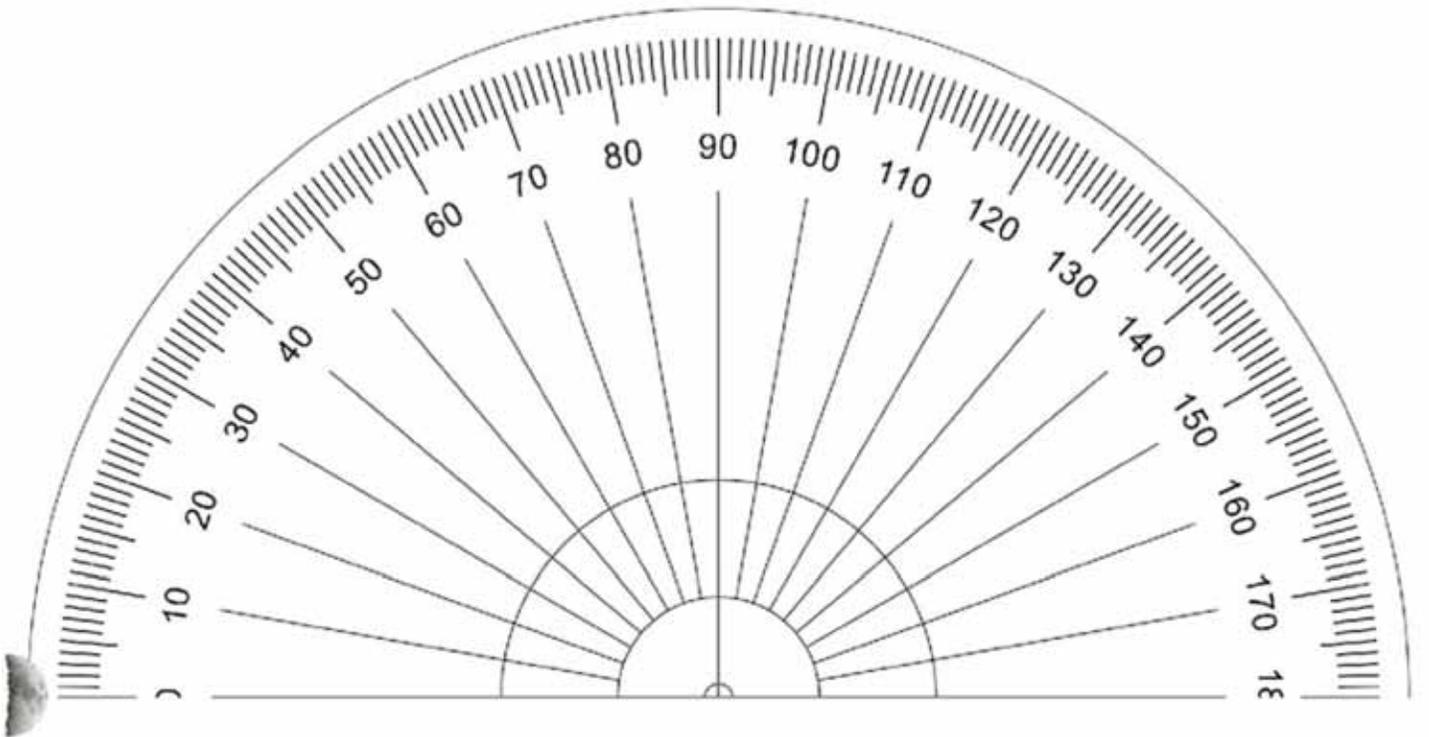
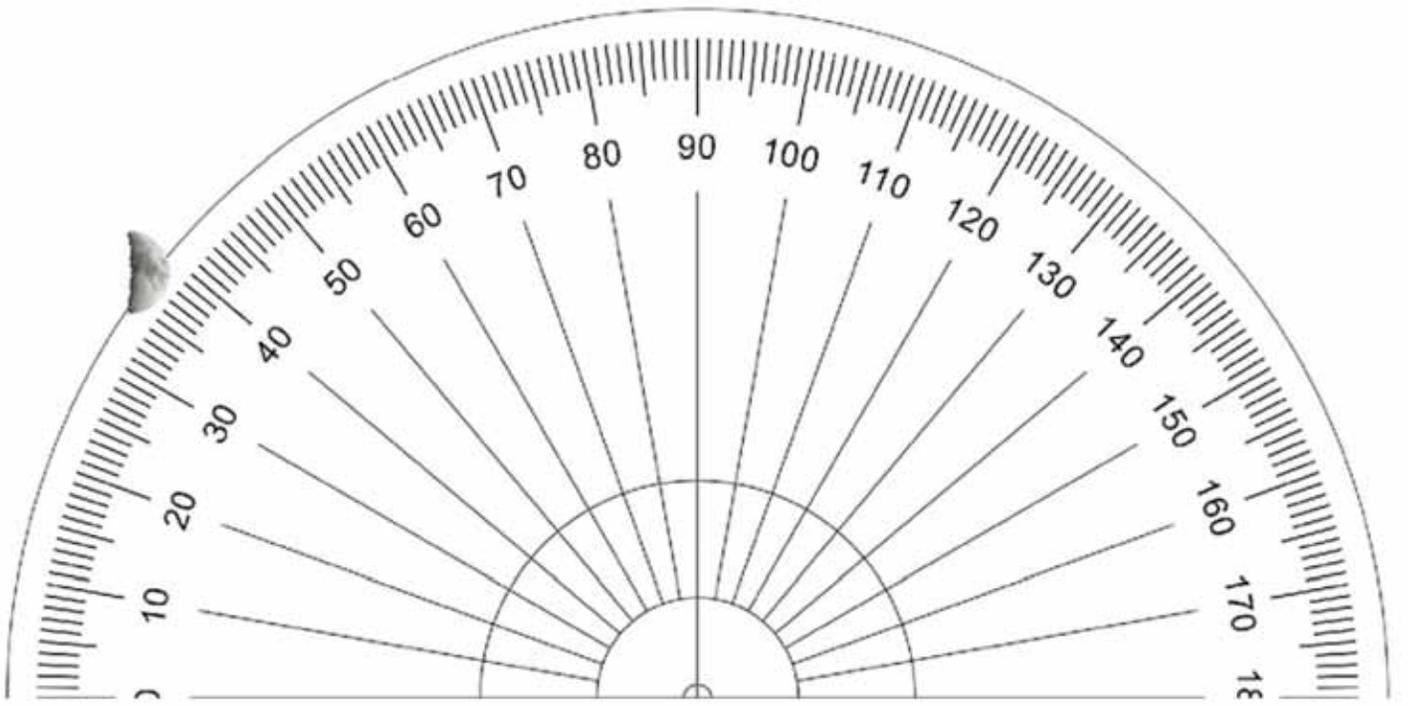




first quarter moon rises in the early afternoon







STEM: Build a Bird Bath

As we've seen in the book, not all birds take baths in water—but many do. YOU can make a bird bath for your backyard or school playground.

Birds don't need a lot of water. In fact, the water should not be deep at all, just two inches or less of water will do the trick. You should change the water and clean it every two to three days.

What will you use to hold the water? Can you recycle something? Here are some ideas: an old pie tin, an old lid to a garbage can, or even the saucer to an old flower pot . . . anything flat and wide that will hold up to an inch of water should do.

What will the birds stand on to drink or while they take their baths? You could use stones, or small branches to mimic what they'd stand on in the wild.

Birds love water that moves. You could hang a full container of water over the bird bath and poke a small hole so a small amount of water dribbles into the bath. What are some things that will hold water that you can hang? How will you poke a small hole to let water drip out? What will happen if you poke too big of a hole?

Where will you put the birdbath? You want to be able to see if easily so you can watch the birds. Most birds like drinking or bathing on the ground but you need to make sure that cats can't get them. Some people put the bird baths up a few feet. Is there something sturdy on which you can place the bird bath—maybe a tree stump or even an old bucket? If you set it on something, make sure it is attached or can't fall.



Math: Measuring (compare & contrast)

Objective Core Mathematics Measurement:

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

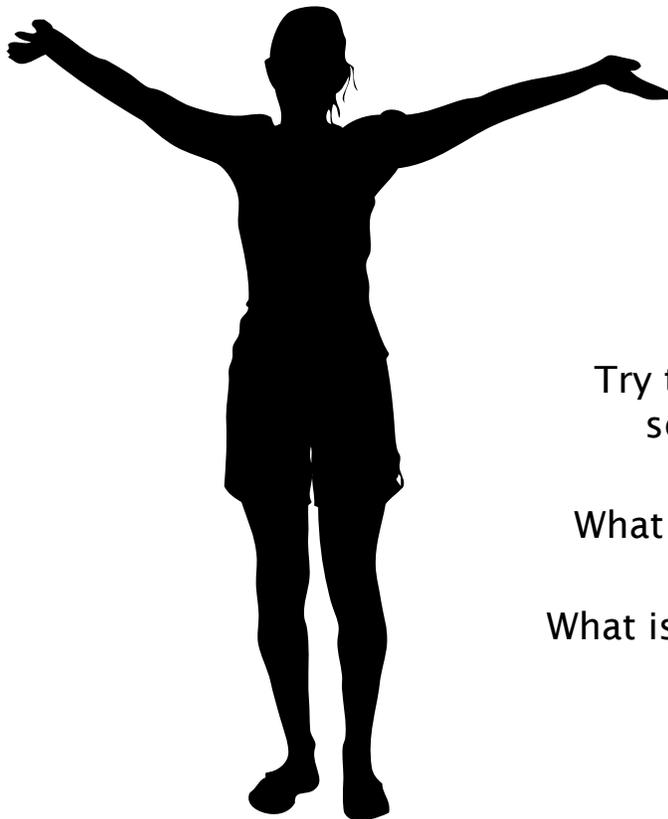
Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length

What standard measuring tool would you use to measure something in:

Inches or centimeters

Feet or meters

Pounds or kilograms



Try to imagine how big or small something is compared to something you know.

What are some other things about the same size?

What is something that weighs about the same?

How big is it?

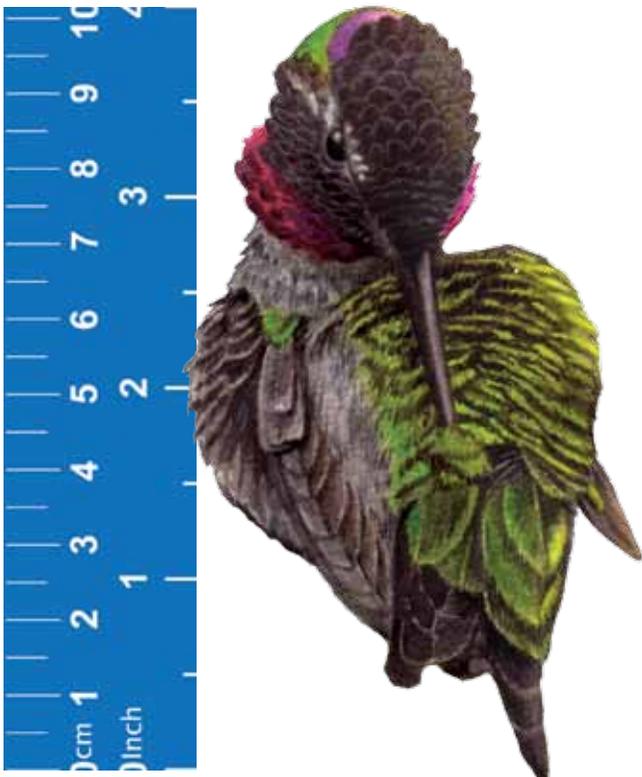
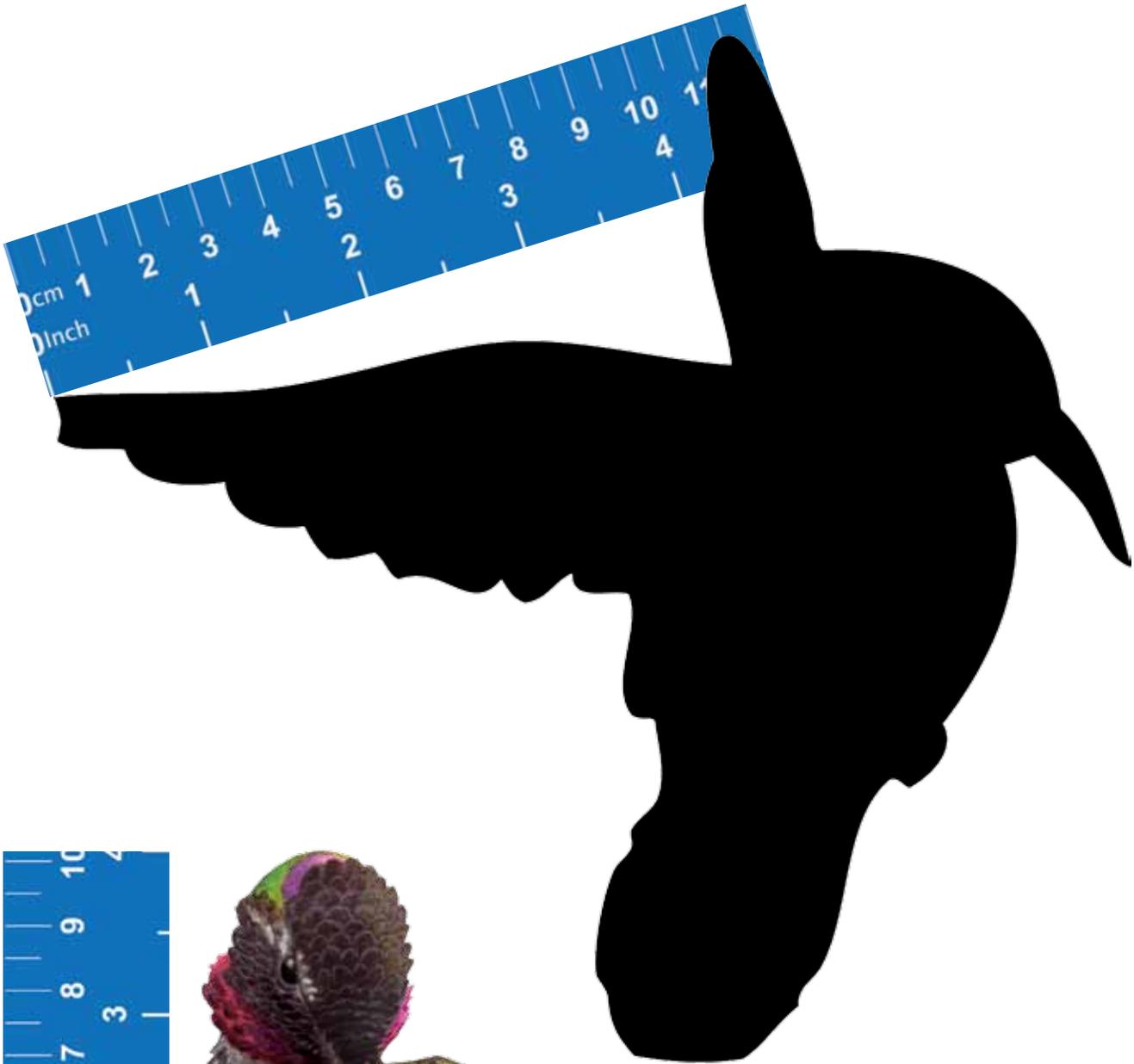
Using the right measuring tool (yard stick or measuring tape) and chalk, mark off how big something is on the playground, sidewalk, or driveway.

If you were to lie down on or next to the line, how many times would you have to lie down in order to equal the size?



An Anna hummingbird's wingspan is 4.7 inches
but it's only about 4 inches tall.

Can you find something around you that is about 4 inches tall or wide?



A turkey vulture's wingspan is about 70 inches.

What tool (ruler or measuring tape) would you use to measure something that size?

How many feet and inches is that?

Can you find something around you that is about 70 inches?

How tall are you?

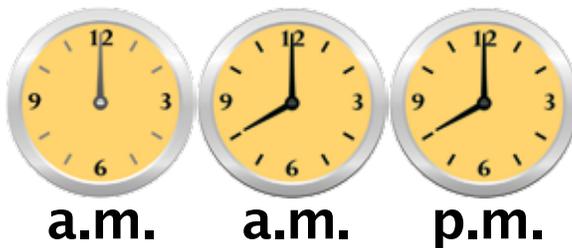
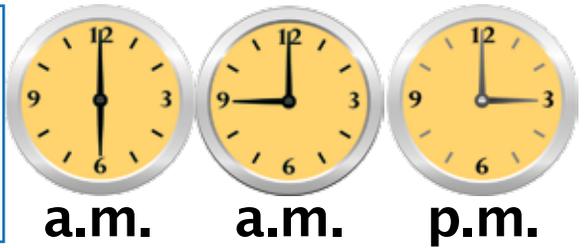


What Time?

Objective: telling time to the hour on analog clocks

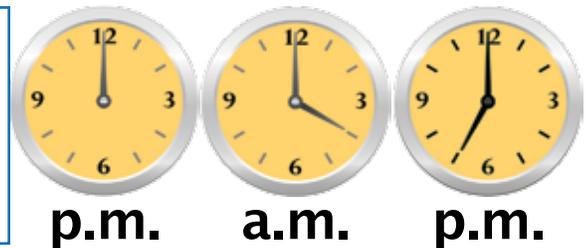
Which clock shows the correct time?

1 The turkey vulture sun bathes around dawn. What are you usually doing around dawn?



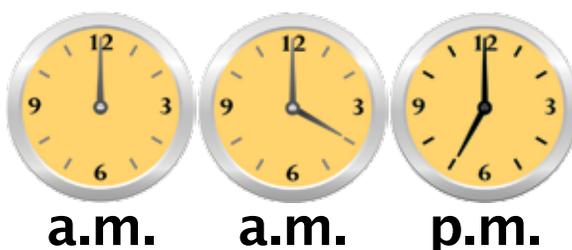
2 The desert tortoise peeks out of its burrow hoping for a late-morning rain bath.

3 The roadrunner dashes from shade to shade, hiding from the hot, noon sun.



4 Late-afternoon heat shimmers above the dry ground.

5 Under the glittering evening stars, the western banded gecko shakes his head.

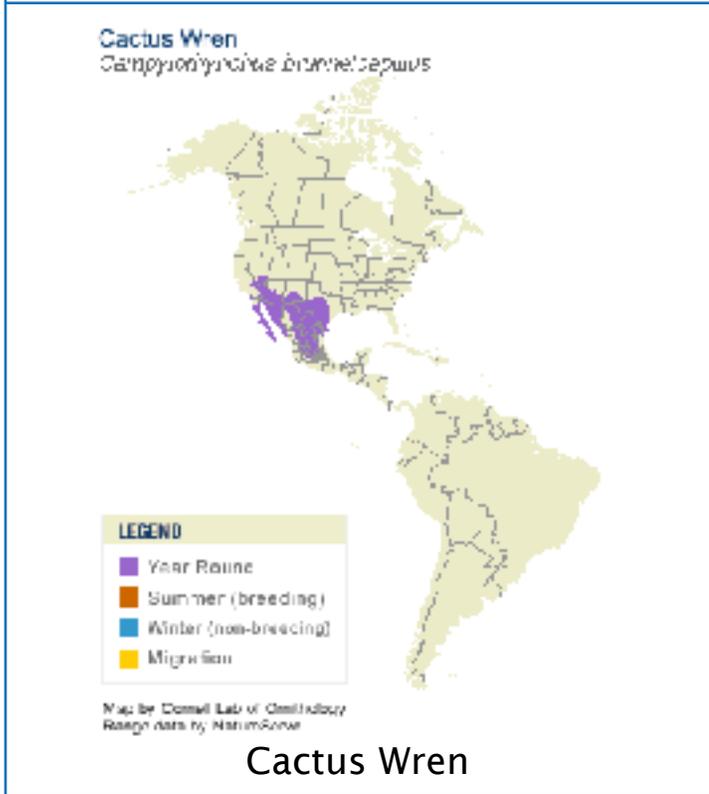
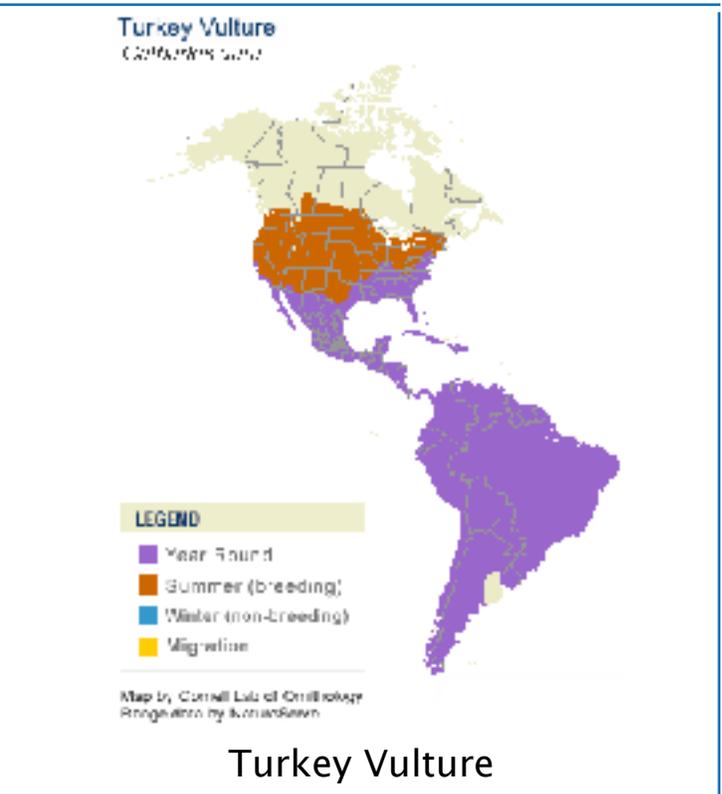
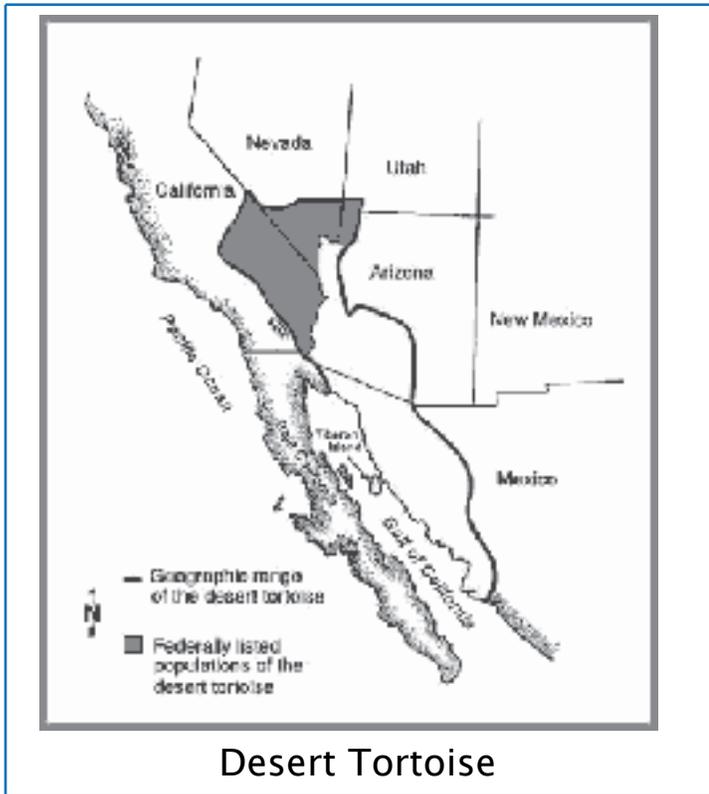


6 By midnight, the bat is full and roosts in a crevice..

Map Activity

Using these maps as a reference, color the areas where these animals live on the blank map (in appendix). Click on the animal name to go to the map source.

Do any of these animals live in habitats other than deserts? How can you tell?



North American Deserts

Using the map in the book as a reference, color the deserts on the blank map (in appendix).

There are four major deserts in North America:

The Sonoran Desert is in parts of Arizona and California and the state of Sonora in Mexico. More rain falls on the Sonoran Desert than any other desert. The Sonoran Desert gets cool, hot, windy, and sometimes damp but it is usually dry. Normally, it is hot in the day and cold at night.

The Mojave Desert is in Southeastern parts of California, as well as parts of Nevada, Arizona, and Utah. The Mojave Desert gets hot and cold, strong seasonal winds, and clear skies, but is hotter in the summer than in the winter. The Mojave gets an average less than 12 inches of rain per year (average 5 inches/year).

The Great Basin Desert covers large parts of the western United States. It is bordered by the Sierra Nevada Mountain Range on the west and the Rocky Mountains on the east. It is a cold desert with 7-12 inches of precipitation (rain in the summer and snow in the winter).

The Chihuahuah Desert is in parts of Mexico, New Mexico, Texas, and Southeastern Arizona. It has hot summers with freezing cold winters and receives less than 10 inches of rain a year.

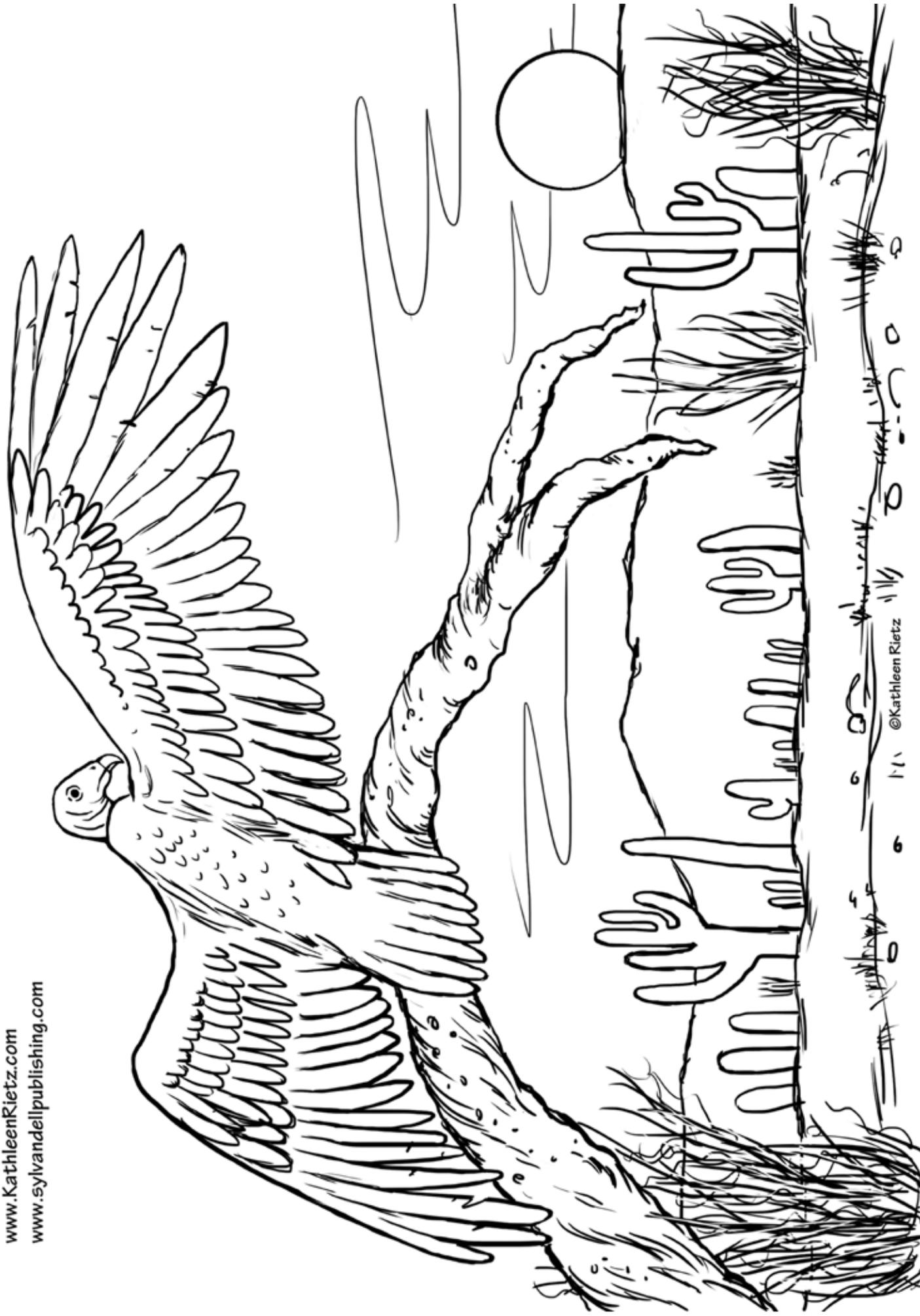
While not shown on the map, there are areas in the Arctic (Canada and Alaska) that are also considered “desert.” Do you think that would be a hot desert or a cold desert? Why?

from the book **Desert Baths**

www.DarcyPattison.com

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Glossary

| word | Definition | Part of Speech | Spanish |
|-----------|---|----------------|------------------|
| acid | sour, sharp, biting to the taste (descriptive characteristics); has a pH of less than 7 and functions as the proton donor | noun | acido |
| active | having lots of energy, doing a lot of things | adjective | activo |
| animal | any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli | noun | animal |
| anointing | a bird behavior of rolling in or adding ant to feathers to help clean the feathers | noun | baño de hormigas |
| ant bath | a bird behavior of rolling in or adding ant to feathers to help clean the feathers | noun | baño de hormigas |
| attract | to pull towards, to make something move closer | verb | atraer |
| bat | a flying, nocturnal mammal (the only mammal to fly) | noun: animal | murciélago |
| bath | water in a bathtub | noun | ducha, baño |
| bathe | to wash oneself in water in a bathtub | verb | bañar, duchar |
| bladder | a small organ that holds urine in bodies, a small bag to hold liquid | noun | vejigas |
| blanket | to cover completely | verb | cubrir |
| blanket | a thick cover used to keep warm in bed | noun | cobija |
| bloom | a flower | noun | flor |
| bloom | to produce flowers | verb | florecer |
| blossom | to produce flowers | verb | florecer |

| word | Definition | Part of Speech | Spanish |
|-------------|---|-----------------------|----------------------------------|
| bug | a subgroup of insects | noun: animal | bicho (insecto en Puerto Rico) |
| burrow | an animal's hole or excavation in the ground used as a shelter or place to live | noun | madriguera |
| cactus | a plant that grows in deserts and has thick stems and sharp points called spines | noun: plant | cactus |
| canyon | a deep valley with steep sides. | noun | cañón |
| catch | to stop and keep ahold of something or someone | verb | coger, atrapar, pescar (to fish) |
| cave | underground (or underwater) dark hole or tunnel in rocks that is big enough for a human to stand | noun: habitat | cueva |
| clean | to remove dirt; Dolch Sight word, grade 3 | verb | limpiar |
| clear | easy to see, free of clouds | adjective | claro |
| climate | average weather condition at a place over a period of years based on temperature, wind velocity and precipitation | noun | ambiente |
| cloud | visible collection of tiny water droplets or ice crystals in the atmosphere | noun | nube |
| cold | opposite of hot; Dolch Sight word, grade 2 | adjective | frío |
| cool | neither very warm or very cold | adjective | fresco |
| coyote | a wolf-like wild dog native to North America | noun: animal | coyote |
| crevice | a narrow crack in rock or in a wall | noun | grieta |

| word | Definition | Part of Speech | Spanish |
|---------------------|--|-----------------------|------------------------------|
| dawn | the first appearance of light in the morning followed by sunrise | noun | amanecer |
| day | 1) (math) a unit used to measure time; 1 day = 24 hours; 2) (science) the time it takes the Earth to rotate on its axis; 3) the portion of the Earth's rotation where sunlight is visible | noun | día |
| desert | land area that receives less than 10-12 inches (25-30 cm) of rain per year | noun: habitat | desierto |
| desert tortoise | a threatened land tortoise (turtle) that digs large, deep burrows (found from Florida west to the Mojave desert); many other animals rely on this animal's burrow for their survival; keystone species | noun: animal | tortuga de tierra de Florida |
| dew | moisture that condenses after a warm day and appears during the night on cool surfaces as small drops | noun | rocío |
| diamondback rattler | large deadly rattlesnake with diamond-shaped markings | noun: animal | casabel diamante |
| dig | break up and move earth with a tool or machine, or with hands , paws, snout, etc. | verb | cavar |
| dirt | ground, soil | noun | tierra |
| doe | adult female of some species, e.g. antelope, gerbil, hamster, hare, mouse, pronghorn, rabbit, rat, squirrel, goat, kangaroo, sheep, deer | noun | cierva |
| drink | to bring liquid into the body usually through the mouth; Dolch Sight word, grade 3 | verb | beber, tomar |

| word | Definition | Part of Speech | Spanish |
|--------------------|--|-----------------------|---------------------------|
| dry | not wet or moist | adjective | seco |
| dusk | twilight, as day turns to night | noun | crepúsculo |
| dust | very small pieces of dirt | noun | polvo |
| early | near the beginning of a time period | adjective | temprano |
| eat | to bite and swallow food as nourishment | verb | comer |
| energy | the ability to do work or cause a change; it can take many forms and can be converted from one form to another | noun | energía |
| evening | the period of time at the end of the day, usually from about 6 p.m. to bedtime | noun | por la noche |
| eyelids | the protective covering of eyes | noun: body part | párpado |
| fawn | the young of an animal such as deer | noun | cervato |
| flap (wings/ fins) | to move quickly up and down | verb | aletear |
| flutter | to move back and forth | verb | aletear |
| fly | to move quickly through the air; Dolch Sight word, grade 1 | verb | volar |
| forage | to wander in search of food | verb | forrajear, buscar forraje |
| germ | a form of bacteria that spreads disease among people or animals | noun | microbio |
| glisten | to shine or sparkle brightly | verb | brillan |
| glittering | bright and shining with a lot of quick flashes of light | adjective | brillantes |
| graze | to eat growing grass | verb | apacentar |
| heat | a form of energy that can cause temperature to increase | noun | calor |
| heavy | something that weighs a lot | adjective | pesado |

| word | Definition | Part of Speech | Spanish |
|---------------------------------|---|-------------------------|--------------------------------|
| hide | to put something or be somewhere that none can find or see | verb | esconder |
| high | a long way from the ground | adjective | alto |
| hole | an opening in or through something | noun | hueco, agujero |
| hot | having a high degree of heat or a high temperature, ; Dolch Sight word, grade 3 | adjective | calor |
| hummingbird | tiny bird with bright, iridescent feathers and long slender bills; wings are specialized for vibrating flight | noun: animal | colibrí |
| hunt | to chase or search for animals for the purpose of catching or killing | verb | cazar |
| hygiene | the state of cleanliness that prevents illness and maintains health | noun | higiene |
| javelina, (collared peccary) | a small pig-like mammal that can live in tropical rainforests, grasslands, and deserts in North, Central and South America | noun: animal | pecarí de collar, jabalí |
| land | an area of ground | noun | terrestre |
| lick | to move the tongue across something to eat it, clean it, or make it wet | verb | lamer |
| long, longer, longest | a considerable time or distance | adjective | largo, más largo, el más largo |
| mammal | a warm-blooded vertebrate that breathes with lungs and is covered with hair/ fur (at some point in its life); females produce milk to feed their live offspring | noun: classification | mamífero |

| word | Definition | Part of Speech | Spanish |
|-------------|--|-----------------------|---|
| midday | noon, when the morning ends and the afternoon starts | noun | medio día |
| midnight | twelve o'clock at night | noun | medio noche |
| moist | slightly wet | adjective | mojado |
| mud | soft, wet earth | noun | lodo, barro |
| mule deer | a type of deer found in Western US | noun | ciervos mulas |
| night | time of darkness between sunset and sunrise | noun | noche |
| nocturnal | active at night | adjective | nocturno |
| noon | midday, when the morning ends and the afternoon begins | noun | medio día |
| nutrient | a substance that provides the nourishment needed for the survival of an organism | noun | nutrientes, alimentos nutritivos, sustancia nutritiva |
| pallid bat | a North American bat with have larger eyes than most other species of bats and pale, long, wide ears | noun | murciélago pálido |
| parasite(s) | animals or plants that feed off of and harm other living organisms | noun | parásito(s) |
| perch | to rest on a pole or something high, | verb | perca, mojerra |
| plant | any member of the kingdom Plantae that usually produce their own food through photosynthesis | noun: plant | planta |
| pollinate | to transfer pollen grains from a stamen to a stigma or ovule of a plant | verb | polinizar |
| preen | to clean feathers with a bill, like a bird does | verb | acicalarse, limpiarse |

| word | Definition | Part of Speech | Spanish |
|---------------------|---|-----------------------|----------------------------|
| prickly pear cactus | a low-growing cactus with long, flat stem "pads" and sharp spines | noun: plant | nopales, tunas o chumberas |
| quart (qt) | a customary unit to measure capacity; 1 quart = 2 pints. | noun | cuarto de galón |
| rain | liquid precipitation in the form of drops | noun | lluvia |
| reptile | a cold-blooded, air-breathing animal with scales or plates and a backbone; most hatch from eggs (snakes, turtles, crocodiles) | noun: classification | reptil |
| rise | to move upward to a higher position | verb | elevarse |
| roadrunner | a small brown and white bird with a long tail that runs very fast and lives in deserts in North America | noun: animal | correcaminos |
| roost | where bats, owls, and other flying creatures take rest | noun | posadero |
| run | to move faster than a walk; Dolch Sight word, Kindergarten | verb | se ejecuta, correr |
| scaled quail | a North American desert-living quail | noun: animal | codorniz |
| scattering | a small number of things spread over a large area | noun | salpicada |
| scrape | to rub across a surface | verb | raspar |
| season | one of the four natural weather divisions of the year, spring, summer, fall, and winter. | noun | estaciones |
| set | the sun going down below the horizon | verb | meter, poner |
| shade | a shelter from the heat | noun | sombra |
| shady | situated in or full of shade | adjective | sombreado |
| shed | to cast off, to separate | verb | quitarse |
| shimmer | to look like a light shaking | verb | resplandecer |

| word | Definition | Part of Speech | Spanish |
|----------------|--|-----------------------|----------------|
| shuffle | to walk without lifting feet | verb | mover patas |
| skin | a natural protective covering of the body; site of the sense of touch | noun: body part | piel |
| sleep | to rest, to be dormant; Dolch Sight word, grade 2 | verb | dormir |
| soar | to fly about | verb | cernerse |
| star | a huge ball of hot gases that gives off energy including light and heat | noun | estrella |
| store | to save something in a special place | verb | archivar |
| stretch | to make something longer or wider | verb | estirar |
| sun | the star closest to Earth, the center of our solar system; a ball of hot, glowing gases giving Earth heat and light. | noun | sol |
| sunbath | to warm in the heat of the sun | noun | baño de sol |
| sunlight | light from the sun, gives heat and warmth | noun | luz del sol |
| sunset | when the sun goes down below the horizon and night begins | noun | atardecer |
| survive | to remain alive or in existence | verb | sobrevivir |
| temperature | the warmth or coldness of something; measured with a thermometer | noun | temperatura |
| thick | heavy, full | adjective | grueso |
| time | a system of measuring duration or a specific portion of duration (e.g., year, season, day, hour, minute, second). | noun | tiempo |
| turkey vulture | a large bird found in most of North America | noun: animal | zopilote |

| word | Definition | Part of Speech | Spanish |
|----------------------|---|-----------------------|-------------------------|
| vegetation | plants and trees | noun | vegetación |
| wake | to no longer be asleep | verb | despertar |
| wallow | to lie down and roll around in water, dirt, or mud | verb | revolcar |
| warm | pleasantly hot | adjective | caliente |
| water | a fluid necessary for the life of most animals and plants | noun | agua |
| week | a unit used to measure time; 1 week = 7 days. | noun | semana |
| west | towards the setting sun, usually shown on the left of a map | noun | occidente, oeste |
| western | in or from the western part of a country | adjective | occidental |
| western banded gecko | a type of gecko living in the southwestern United States | noun: animal | salamanquesa de franjas |
| wings | the two forelimbs (like arms) of most birds and of bats that are specialized for flight; many insects have wings; butterflies have four | noun: body part | alas |

Answers

Silly Sentences

1. Some deserts are hot and some are cold, but all deserts have a dry climate.
2. Deserts receive an average of less than 10 to 12 inches (25 to 30 cm) of rain per year!
3. The deserts of the American Southwest average between 2 to 8 inches of rain a year.
4. Desert plants and animals must survive with little water.
5. In some ways, clouds act like a blanket at night.
6. Thick, heavy clouds help keep warm temperatures on land.
7. When there are no clouds at night, the land loses all the heat from the sun that had built up all day. Because deserts are so dry, they don't have many clouds.
8. Deserts that get very hot during the day can get very cold at night.

Parts of Speech

1. noun, 2. verb, 3. noun, 4. verb, 5. noun, 6. verb, 7. noun, 8. verb, 9. verb, 10. noun

Word Search

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

DAWN 6,D VULTURE 3,H DESERT 6,D BATHE 2,J
 CLEAN 4,D DUST 4,G SUN 7,G PREEN 3,F
 SOAR 8,E FAWN 8,A DUSK 2,I

Desert Adaptation True or False?

All are true

Desert True or False?

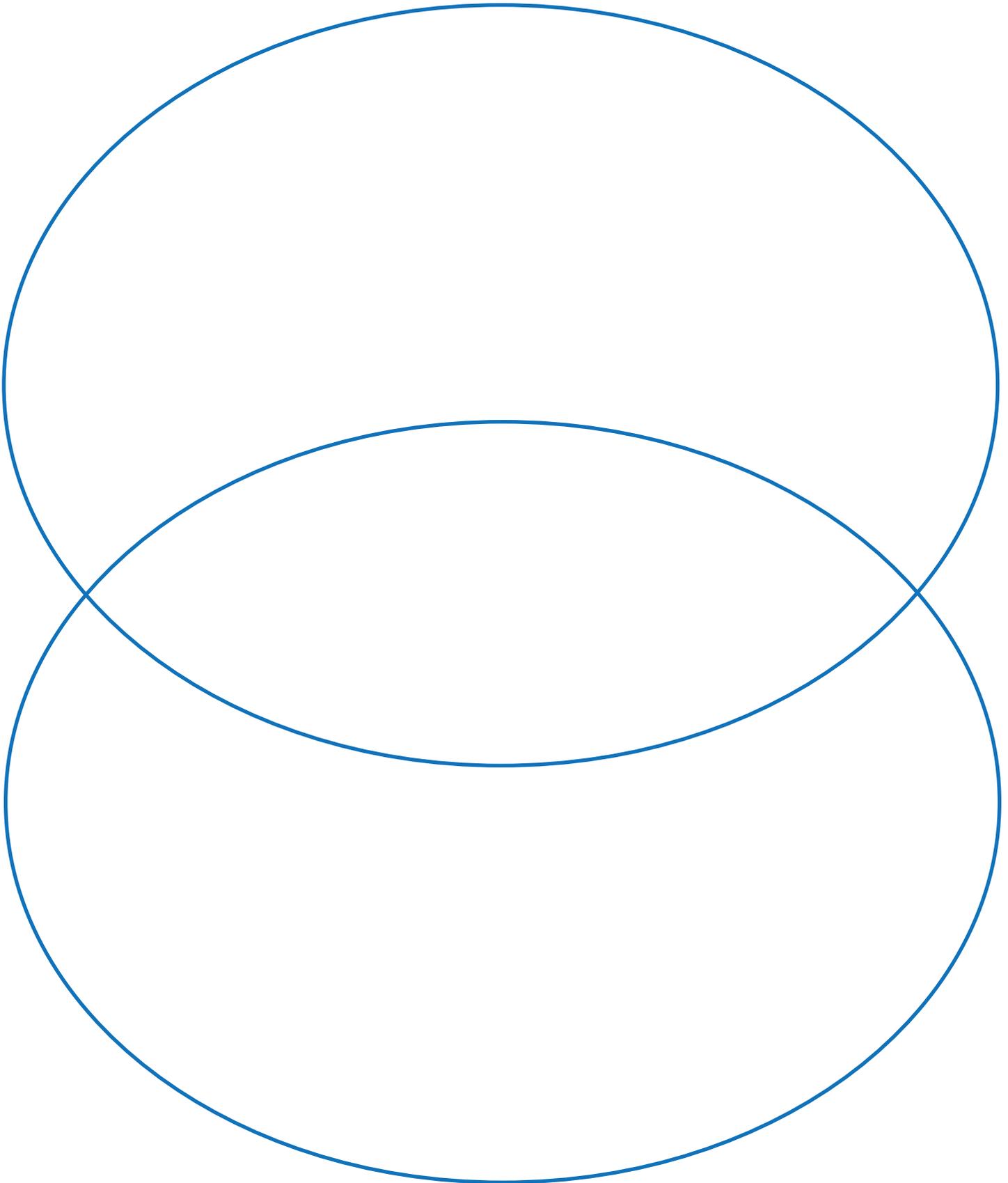
1. The desert is always hot and dry./ False. Many deserts are not always hot, but they are dry.
2. The only animals that can live in the desert are lizards and snakes./ False: All kinds of animals live in the desert: insects, reptiles, birds, and mammals.
3. An adult desert tortoise can survive for years without water./ True. They can store up to a quart of water in their bladder.
4. Animals are active in the Sonoran Desert at all hours of the day./ True.
5. A sun bath is when a bird spreads out its wings in the sunlight to maintain body temperature and feather health./ True. Sunning can make parasites in the feathers move to other parts of the bird's plumage, allowing the bird easier access to remove the parasites, called preening. Sunbathing can also be used to dry feathers.
6. All deserts get less than 10-12 inches of rain a year./ True.
7. All animals need water to get clean./ False. Humans typically need water to get clean, but some animals don't. Some animals get clean by licking themselves, rolling in mud, or even having ants clean them.
8. Roadrunners need to find a bird bath to take a bath./ False. Roadrunners take dust baths.
9. Nocturnal animals do most of their hunting at night./ True.
10. Diamondback snakes shed their skin one to three times per years./ True.

What Time?

| | | | |
|---|--|--|--|
| <p>1 The turkey vulture sun bathes around dawn.</p> |  <p>a.m.</p> | <p>2 The desert tortoise peeks out of its burrow hoping for a late-morning rain bath.</p> |  <p>a.m.</p> |
| <p>3 The roadrunner dashes from shade to shade, hiding from the hot, noon sun.</p> |  <p>p.m.</p> | <p>4 Late-afternoon heat shimmers above the dry ground.</p> |  <p>p.m.</p> |
| <p>5 Under the glittering evening stars, the western banded gecko shakes his head.</p> |  <p>p.m.</p> | <p>6 By midnight, the bat is full and roosts in a crevice..</p> |  <p>a.m.</p> |

Appendix B—Venn Diagram

Compare and contrast two desert animals



Appendix C—U.S. Map



Appendix D—Tracking Sun and Moon Movement

