



THIRD GRADE Activity Guide



Activity: Zoo Bingo!

PRE-ZOO

POST-ZOO

You could call out general animal categories (bird, mammal, carnivore, solitary, social, predator, prey, lays eggs, etc.), or the habitats or continents where animals exist. You might also use animal adaptations, categories (frugivore, producers, consumers, precocial, altricial), animal structures, or biomes. For a mid-game switcheroo, have the students trade cards with their neighbor!

Activity: The Wonder of Webs

PRE-ZOO

POST-ZOO

By representing an organism and forming a circle, students will connect themselves using string or yarn to visually represent how they depend on one another (a food/energy web).

Activity and Worksheet: Thumbs Up!

PRE-ZOO

POST-ZOO

The Thumbs Up! activity and worksheet will help your students conceptualize the importance of a certain advantageous anatomical primate structure—the opposable thumb!

Activity: Who Are You?

PRE-ZOO

POST-ZOO

ZOO-DO!

This activity would be great to do in one of the Zoo's open space areas (Patas Lawn, Playfield Lawn, or Nature Exploration Area), but can just as easily be played in your classroom!

Worksheet: Insect Zoo Word Search

PRE-ZOO

POST-ZOO

ZOO-DO!

Complete the worksheet before or after your Zoo visit, or have them work on the word search while navigating around the crawlies in the Insect Zoo!

Worksheet: Animath

PRE-ZOO

POST-ZOO

ZOO-DO!

These addition/subtraction and multiplication/division worksheets are filled with word problems rooted in Zoo Fun Facts.

Worksheet: Animals of Africa!

POST-ZOO

This worksheet explores the habitats of Africa and the animals that belong there.



Zoo BINGO!

Lesson Plan



Activity: Zoo Bingo!

PRE-ZOO

POST-ZOO

To adapt these bingo sheets to your grade level, call out different types of information and animal descriptions to get your students thinking critically about the animals they see on the card in front of them.

For **Kindergartners**, you might use patterns, colors, and textures, animal names, or general animal categories (mammal, insect, amphibian, four legs, two legs, has wings, lays eggs, etc.). Some other general animal groupings to call out: animals that fly, dig, crawl, hunt, hop/jump, climb, swim, animals that are fast, slow, etc.

For **First** and **Second** graders, you might use general animal categories (bird, mammal, carnivore, solitary, social, predator, prey, lays eggs, etc.), or the habitats or continents where animals exist.

For **Third**, **Fourth**, and **Fifth** graders, you might use animal adaptations, categories (frugivore, producers, consumers, precocial, altricial), animal structures, or biomes.

For a mid-game switcheroo, have the students trade cards with their neighbor!

Use Zoo Bingo as a warm-up to your Zoo visit in order to familiarize your students with the animals, or you can use them once you've returned to your classroom to review the animals you experienced at the Zoo!



ZOO BINGO!



Name: _____



All photos © Marianne Hale

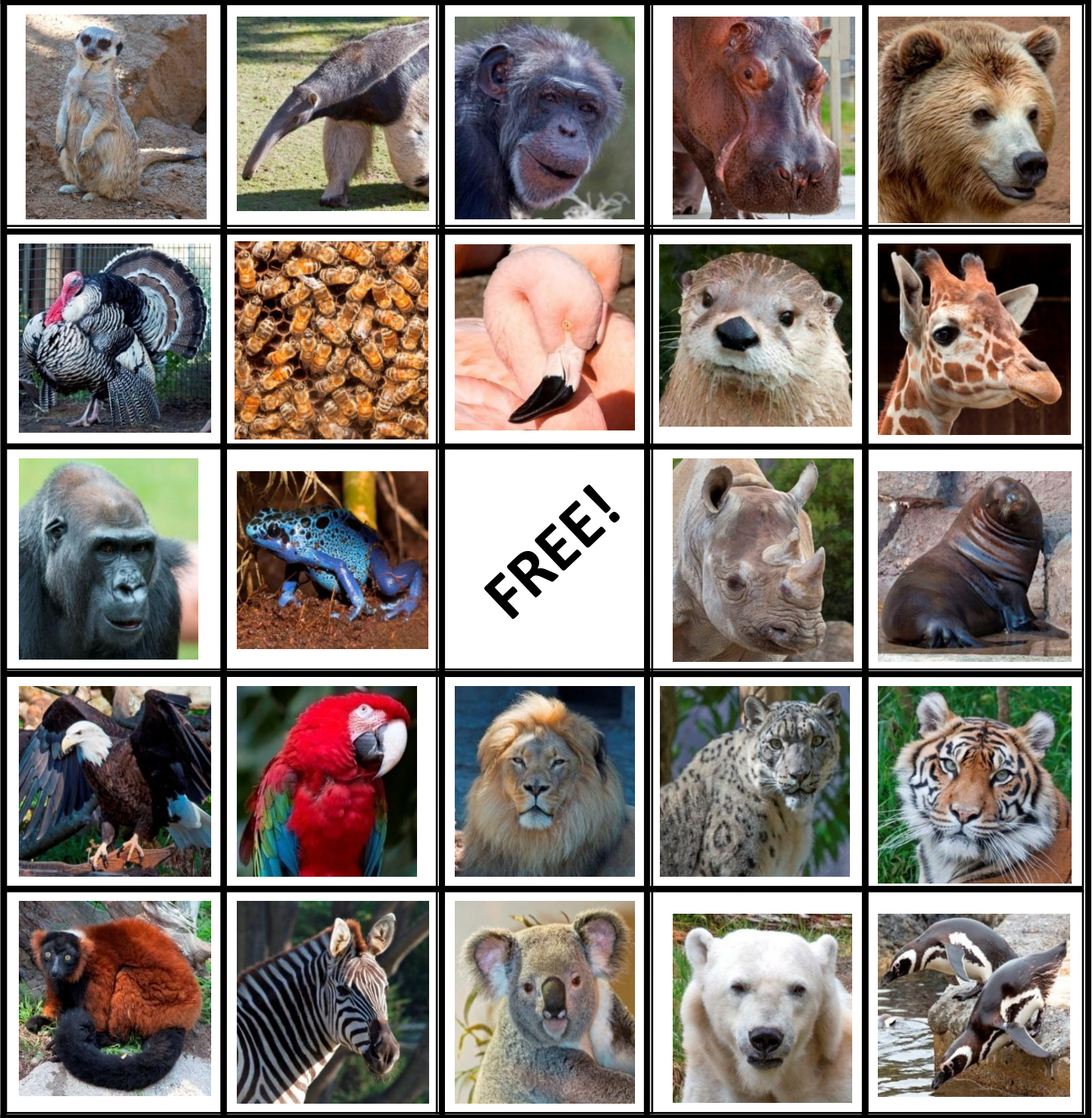
When you get 5 in a row, be sure to call out "Bingo"!



ZOO BINGO!



Name: _____



All photos © Marianne Hale

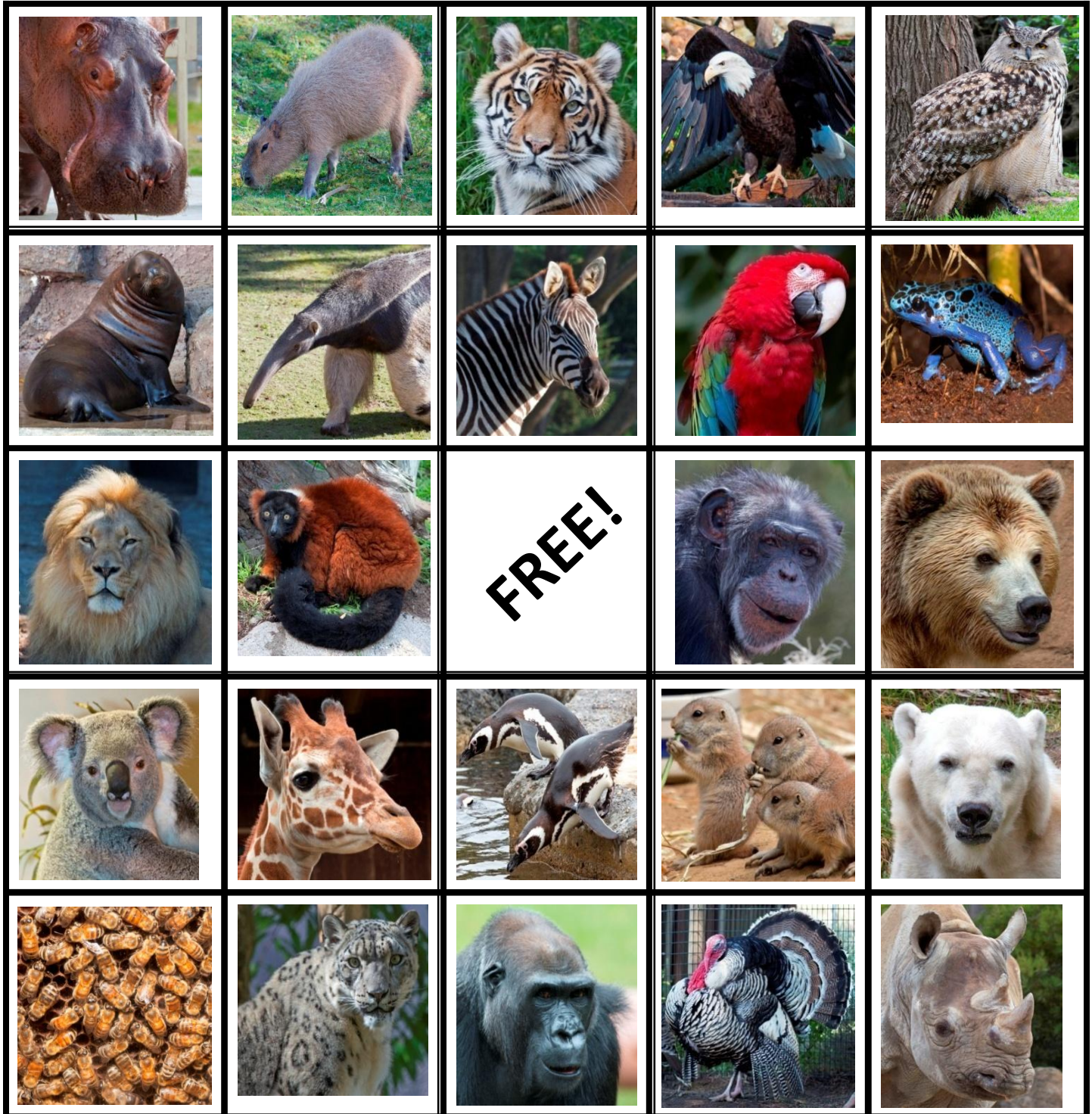
When you get 5 in a row, be sure to call out "Bingo"!



ZOO BINGO!



Name: _____



All photos © Marianne Hale

When you get 5 in a row, be sure to call out "Bingo"!

ZOO BINGO!



Name: _____



All photos © Marianne Hale

When you get 5 in a row, be sure to call out “Bingo”!

ZOO BINGO!



Name: _____



When you get 5 in a row, be sure to call out "Bingo"!

ZOO BINGO!



Name: _____



All photos © Marianne Hale

When you get 5 in a row, be sure to call out “Bingo”!



Zoo BINGO!

Teacher Key



Animals found on the Zoo Bingo sheets with the **GREEN** header are:

- Reticulated giraffe (*Giraffa camelopardalis reticulata*)*
- Green-winged macaw (*Ara chloropterus*)*
- Polar bear (*Ursus maritimus*)*
- Honey bees (*Apis mellifera*)*
- Western lowland gorilla (*Gorilla gorilla gorilla*)
- Snow leopard (*Uncia uncia*)*
- Black rhino (*Diceros bicornis*)*
- Koala (*Phascolarctus cinereus adustus*)*
- Red-ruffed lemur (*Varecia variegata rubra*)*
- Domestic turkey (*Meleagris gallopavo*)
- Nile hippopotamus (*Hippopotamus amphibious*)*
- Sumatran tiger (*Panthera tigris sumatrae*)*
- Bald eagle (*Haliaeetus leucocephalus*)
- Giant anteater (*Myrmecophaga tridactyla*)*
- Grizzly bear (*Ursus arctos*)*
- Chimpanzee (*Pan troglodytes*)*
- California sea lion (*Zalophus californianus*)*
- Chilean flamingo (*Phoenicopterus chilensis*)
- Grant's Zebra (*Equus quagga boehmi*)*
- North American river otter (*Lutra canadensis*)
- Poison dart frog (*Dendrobatidae*)*
- Magellanic penguin (*Spheniscus magellanicus*)*
- African lion (*Panthera leo*)
- Slender-tailed meerkat (*Suricata suricatta*)⁺

* This species is found on all three bingo cards.

⁺ This species is unique to this card.



Zoo BINGO!

Teacher Key



Animals found on the Zoo Bingo sheets with the **PURPLE** header are:

- Eurasian eagle owl (*Bubo bubo*)⁺
- Capybara (*Hydrochoerus hydrochaeris*)⁺
- Reticulated giraffe (*Giraffa camelopardalis reticulata*)*
- Green-winged macaw (*Ara chloropterus*)*
- Polar bear (*Ursus maritimus*)*
- Honey bees (*Apis mellifera*)*
- Snow leopard (*Uncia uncia*)*
- Black rhino (*Diceros bicornis*)*
- Koala (*Phascolarctus cinereus adustus*)*
- Red-ruffed lemur (*Varecia variegata rubra*)*
- Domestic turkey (*Meleagris gallopavo*)
- Nile hippopotamus (*Hippopotamus amphibious*)*
- Sumatran tiger (*Panthera tigris sumatrae*)*
- Bald eagle (*Haliaeetus leucocephalus*)
- Giant anteater (*Myrmecophaga tridactyla*)*
- Grizzly bear (*Ursus arctos*)*
- Chimpanzee (*Pan troglodytes*)*
- California sea lion (*Zalophus californianus*)*
- Grant's Zebra (*Equus quagga boehmi*)*
- Poison dart frog (*Dendrobatidae*)*
- Magellanic penguin (*Spheniscus magellanicus*)*
- African lion (*Panthera leo*)
- Black-tailed prairie dog (*Cynomys ludovicianus*)
- Western lowland gorilla (*Gorilla gorilla gorilla*)

* This species is found on all three bingo cards.

⁺ This species is unique to this card.



Zoo BINGO!

Teacher Key



Animals found on the Zoo Bingo sheets with the **BLUE** header are:

- Black rhino (*Diceros bicornis*)*
- Chimpanzee (*Pan troglodytes*)*
- Koala (*Phascolarctus cinereus adustus*)*
- California sea lion (*Zalophus californianus*)*
- Giant anteater (*Myrmecophaga tridactyla*)*
- Chilean flamingo (*Phoenicopterus chilensis*)
- Reticulated giraffe (*Giraffa camelopardalis reticulata*)*
- Magellanic penguin (*Spheniscus magellanicus*)*
- Black-tailed prairie dog (*Cynomys ludovicianus*)
- Snow leopard (*Uncia uncia*)*
- Red-ruffed lemur (*Varecia variegata rubra*)*
- Nile hippopotamus (*Hippopotamus amphibious*)*
- Sumatran tiger (*Panthera tigris sumatrae*)*
- Grizzly bear (*Ursus arctos*)*
- Grant's Zebra (*Equus quagga boehmi*)*
- North American river otter (*Lutra canadensis*)
- Poison dart frog (*Dendrobatidae*)*
- Green-winged macaw (*Ara chloropterus*)*
- Polar bear (*Ursus maritimus*)*
- Honey bees (*Apis mellifera*)*
- Komodo dragon (*Varanus komodoensis*)⁺
- South American coati (*Nasua nasua*)⁺
- Greater kudu (*Tragelaphus strepsiceros*)⁺
- Squirrel monkey (*Saimiri sciureus*)⁺

*This species is found on all three bingo cards.

⁺ This species is unique to this card.



The Wonder of Webs

Lesson Plan



Activity: The Wonder of Webs

PRE-ZOO

POST-ZOO

By representing an organism and forming a circle, students will connect themselves using string or yarn to represent how they depend on one another, eventually creating a complete food/energy web.

Time:

30 minutes – 1 hour

Materials needed:

- plant and animal cards (10 African Savanna cards attached)
- large ball of yarn or string

Procedure:

Assign each student or group of students an identity by giving each student a plant or animal card. It may be helpful to have a few facts on the back to help them familiarize with their organism. Stand in a circle. To start the web, the facilitator represents the sun. Model the game by saying that you are the sun passing the string to (choose a plant/producer) because you give the organism energy to grow. You hold onto the string and pass the ball to the student. That student is now responsible for making a reasoned energy transfer connection. This continues until everyone is holding the string. While sitting still, gently tug on the string, asking students to gently tug when they feel the tug. Watch the web wiggle— we're all connected! Discuss potential impacts to the web. What would happen if...no rain fell for months? A storm blew down trees? There is a fire? A foreign species entered the habitat? Identify one plant/animal that an invasive species will replace and watch how that affects the web's structure. An alternate web-creation option: Have many small food chains within the circle by cutting the end of the thread when it reaches a top carnivore or a decomposer. Then, start over again with the sun passing the thread to another producer.

<http://studyjams.scholastic.com/studyjams/jams/science/ecosystems/food-webs.htm>

http://education.nationalgeographic.com/education/encyclopedia/food-web/?ar_a=1

African lions live on the savannas and grasslands of Africa. Their coloration provides them excellent camouflage in this grassy environment. They eat large prey like zebras, wildebeest, gazelles, warthogs, and sometimes rodents.

The lion is the only large cat that lives in groups (called a pride); their roars to one another can sometimes be heard from 5 miles away! Lions are only active for 3-4 hours a day while the other 20 hours are spent resting and sleeping.



Photo © Marianne Hale

African lion
Panthera leo

Grant's zebras can be found in the grasslands, savannas, and open country of Africa. Called *grazers*, zebras eat tall coarse grasses which expose the shorter grasses preferred by wildebeest and gazelles. When being chased in groups, their swift running and distinctive black and white stripes make it difficult for predators to focus on one individual animal. Zebras have excellent senses of smell, hearing, and vision. Like most herd prey, these senses help them stay alert for threats and predators.



Photo © Marianne Hale

Grant's zebra
Equus quagga boehmi

Dung beetles are found on every continent except Antarctica! Since dung is *everywhere*, dung beetles live in many different habitats, including deserts, farmlands, forests, and grasslands. In the wild, dung beetles eat dung excreted by herbivores and omnivores. They also eat plants, mushrooms, and fruit. Most dung beetles search for dung using an excellent sense of smell. They collect fresh dung and roll it to underground burrows, using it to feed developing larvae. They can roll objects up to 50 times their weight!



Photo © Marianne Hale

Dung beetle
Scarabaeidae

Marabou storks have no voice box; instead, they use the loud clattering of their bills to communicate with one another. They are the largest of all storks, with a wingspan of up to 8.5 feet and a weight of up to 11 pounds!

They live in the lowlands, savannas, and waterways of Africa. They feed on carrion (dead animal material), termites, fish, frogs, and small mammals. They are also attracted to grass fires, where they march along the fire front searching for food.



Photo © Marianne Hale

Marabou stork
Leptoptilos crumeniferus

Hamerkop, the world's smallest species of stork, are carnivores all the way! They hunt in aquatic habitats, focusing on fish, shrimp, frogs, tadpoles, and insects. Sometimes, they will even probe their beaks through mud to catch invertebrates.

Hamerkop are known for their magnificent nests! Measuring up to 6.5 feet wide and 6.5 feet deep, their nests are structurally strong enough to hold the weight of a person!



Photo © Marianne Hale

Hamerkop
Scopus umbretta

Giraffes—the tallest land animal ranging from 12 to 18 feet tall—are advantageous acacia munchers. Their tongue, an impressive 16-18 inches long, is bluish-purple to prevent sunburn and especially strong to strip leaves from branches. They prefer acacia trees, mimosa trees, and apricot trees.

In order to reach drinking water, giraffes have to spread their legs very far apart and bend very low. This leaves them vulnerable to predators, so they don't drink very often—they can survive for weeks without water.



Photos © Marianne Hale

Reticulated giraffe
Giraffa camelopardalis reticulata

Their claws are perfect for digging and their wet nose is great at sniffing out prey. Meerkats feast on anything from scorpions, beetles, spiders, worms, and reptiles—they are totally carnivores! Their coat is camouflaged: dark skinned bellies and light fur act as a solar panel while dark marks around their eyes serve as sunglasses.

Meerkats are social, diurnal animals that live in large groups. While individuals may be the teacher, babysitter, or hunter, meerkats spend time in families. They share the responsibility of looking out for predators. A meerkat mob will sometimes use the dust to create a cloud for cover from predators.

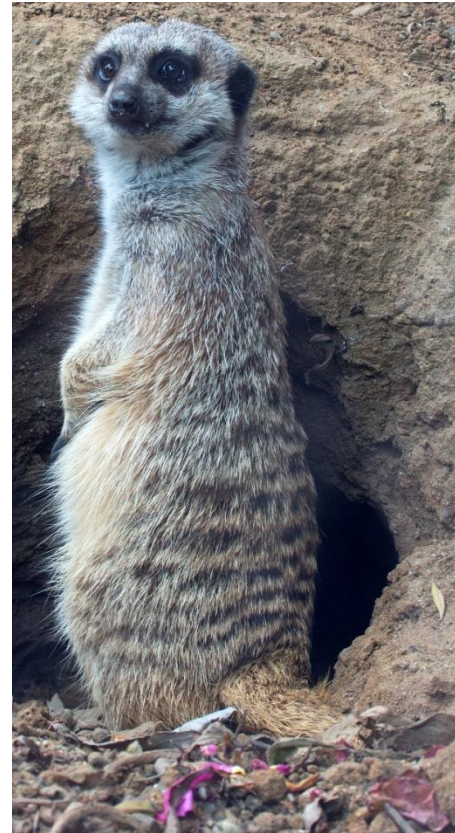


Photo © Marianne Hale

Slender-tailed meerkat
Suricata suricatta

Scimitar-horned oryx are incredibly well adapted to hot, dry environments. Their hooves make them excellent sand navigators, they can raise their body temperature to avoid sweating, and they only have to drink water every few weeks. They are named after their long, curved horns. They eat grasses, herbs, roots, and buds. Oryx will travel many miles in search of new grasses that sprout up quickly after sudden rain. While they used to be found in large herds, scimitar-horned oryx are now extinct in the wild.



Photo © Marianne Hale

Scimitar-horned oryx
Oryx dammah

There are more than 800 species of Acacia trees found around the world. In order to survive on the dry savannas of Africa, Acacia senegal trees have deep roots to reach down to water. They are very resistant to drought and can tolerate a wide range of temperatures. Their branches have thick, fire resistant bark. Their branches also have long, sharp needles that make it hard for herbivores to reach the leaves.



Photo © Allan Grey, Flickr

Acacia senegal
Senegalia senegal

Male kudu have incredible spiral horns! They can be up to 6 feet long and usually twist twice. Graceful jumpers, kudus can easily leap over 8 feet high in a single bound. Their large, sensitive ears and camouflage help protect them from predators. If alarmed, they stand very still and are difficult to spot. They are powerful swimmers and have a keen sense of hearing.

Like zebras, antelopes, and other grazers, kudus are strict herbivores. They eat leaves, flowers, fruits, and shoots from a variety of trees, bushes, and grasses. Their teeth are specialized for pulling and grinding.



Photo © Marianne Hale

Greater Kudu
Tragelaphus strepsiceros



Thumbs Up!

Lesson Plan



Activity & Worksheet: Thumbs Up!

PRE-ZOO

POST-ZOO

Materials:

- light duty tape (masking or painter's tape)
- stop watches or timers (one per group)
- Thumbs Up! student worksheet
- images of primates and primate hands (some included)

Procedure:

Have students view the hands of several primates and describe as many similarities and differences as possible. Many primates also have 'opposable toes' that are especially useful in tree climbing. Helping them to grip branches and climb, opossums have specialized toes on their hind feet. Also, a portion of a giant panda's wrist bone aids them in grasping bamboo.

Help students conceptualize how useful an opposable thumb is for humans by gently taping down students' thumbs and having them try to complete a variety of timed tasks. Some 'task' examples: write their name, open a door using a knob, button a button, tie a shoelace, seal a plastic bag, pull up a zipper, unscrew a bottle cap, pick a coin up off of a flat surface, open a jar.

Divide the class into groups. Each student will then take turns timing, attempting activities, and recording their own data. Each task should be completed first with the use of their thumbs (control time). Next, create 'partial' thumbs by taping the lower part of their thumbs to the side of their hands so that only the top joint of the thumbs can move; this represents chimpanzees—opposable thumbs with limited flexibility. Lastly, they should complete the tasks with their entire thumb taped to the side of their hand.

On their data sheet, they should have three times written for each activity. After they have had some time to reflect on these different times, students can discuss a variety of ideas.

- How did my hypotheses stand up to the tests?
- How does having an opposable thumb help humans?
- How do my opposable thumbs help me use tools?



Western lowland gorilla
Gorilla gorilla gorilla



Western lowland gorilla
Gorilla gorilla gorilla



Western lowland gorilla
Gorilla gorilla gorilla



Red ruffed lemur
Verecia rubra



Red ruffed lemur
Verecia rubra





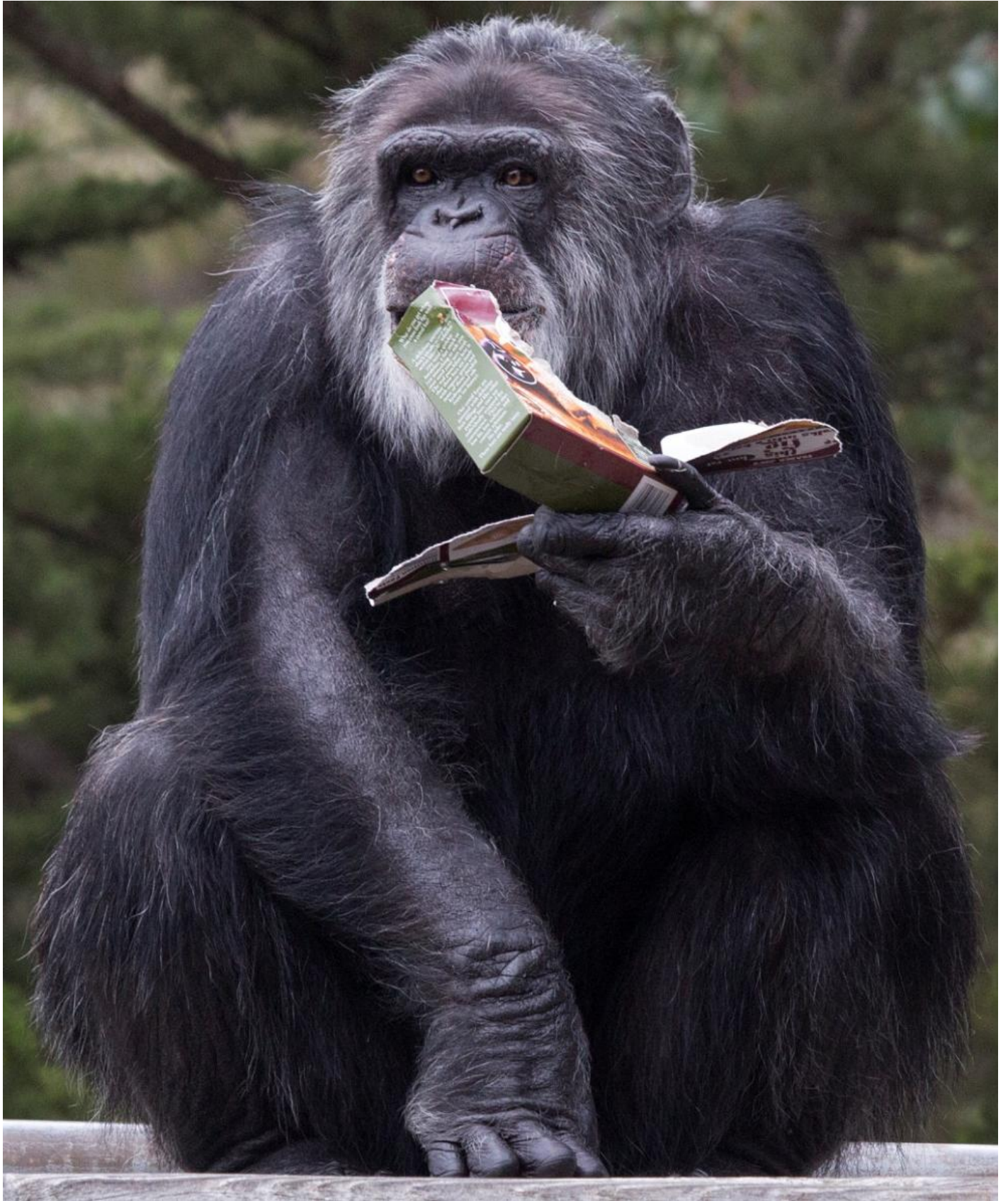
Red-fronted brown lemur
Eulemur rufifrons



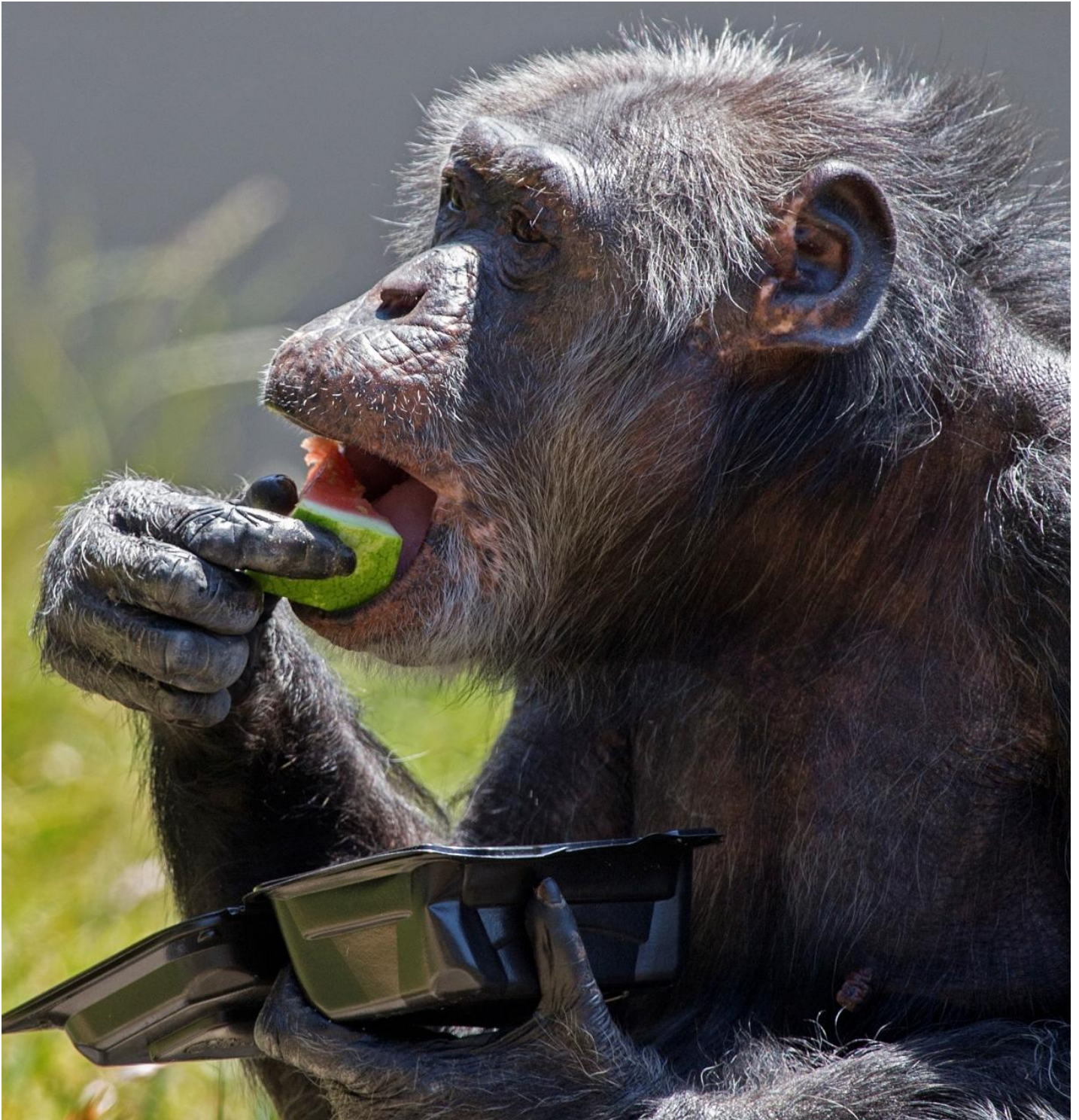
Black and white ruffed lemur
Verecia variegata



Chimpanzee
Pan troglodytes



Chimpanzee
Pan troglodytes



Chimpanzee
Pan troglodytes



Emperor tamarin
Saguinus imperator



Emperor tamarin
Saguinus imperator



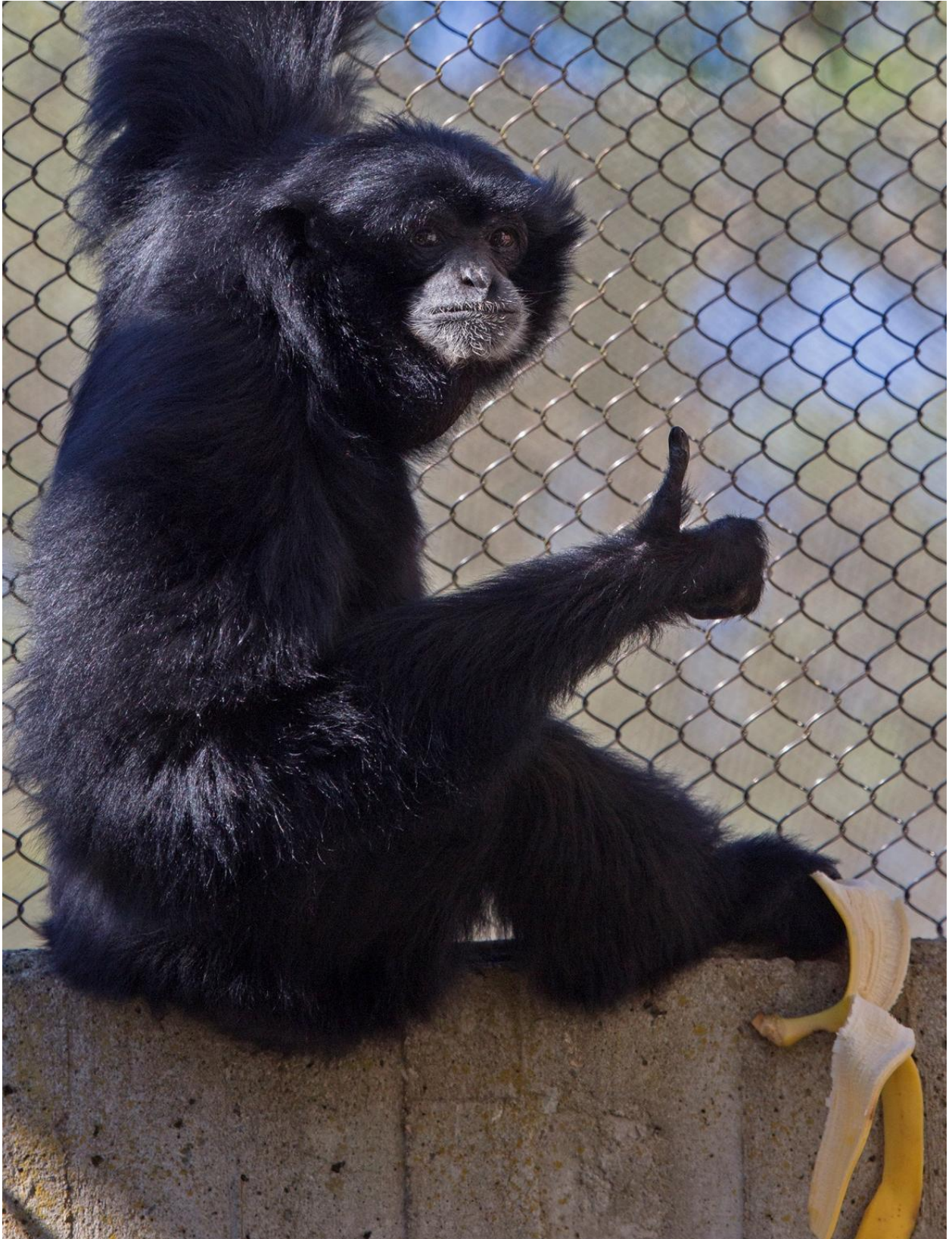
Pied tamarin
Saguinus bicolor



South American squirrel monkey
Saimiri sciureus



Siamang
Symphalangus syndactylus



François' langur
Trachypithecus francoisi



Chimpanzee



Human



Orangutan



Gorilla



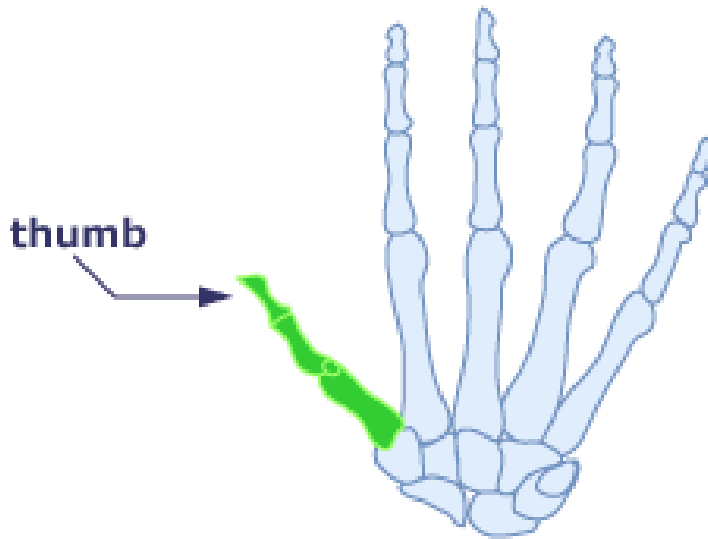
Siamang



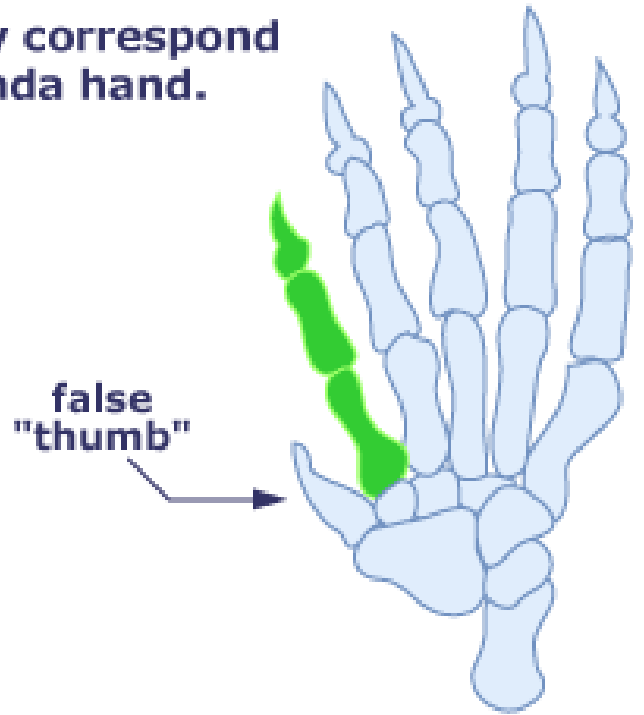
Baboon



■ Human thumb bones actually correspond to the sixth finger on the panda hand.



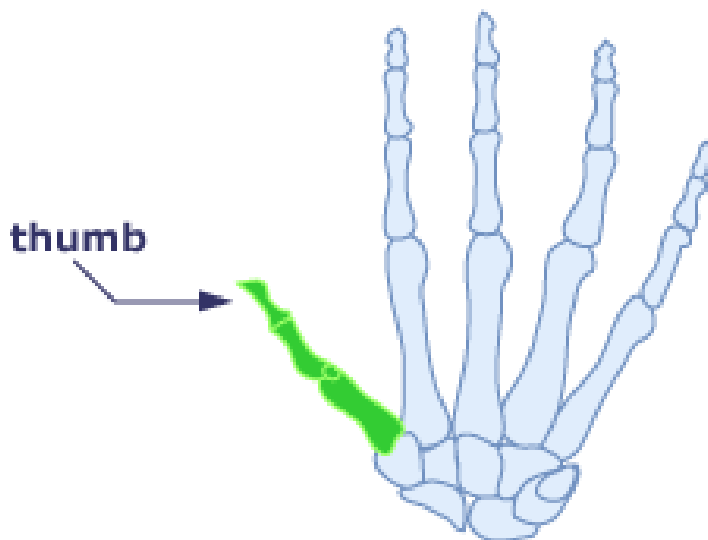
Human hand



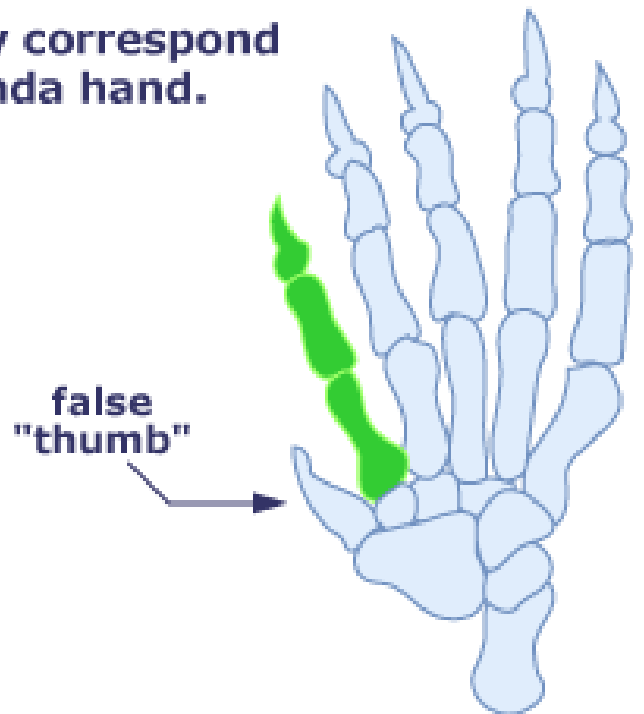
Panda hand

© http://evolution.berkeley.edu/evolibrary/article/analogy_06

■ Human thumb bones actually correspond to the sixth finger on the panda hand.



Human hand



Panda hand

© http://evolution.berkeley.edu/evolibrary/article/analogy_06



Thumbs Up!

Student Worksheet



Just how useful are our thumbs? Challenge: complete a variety of activities without them and see how much your use of thumb impacts your time!

Without your thumbs, which activity do you hypothesize will take you the longest to complete? Which activity do you think will take the least time?

Fill out the tables below. First, do all of the activities with use of your thumb. Next, do all of the activities with your 'partial' thumb. Lastly, do all the of the activities with no thumb.

Activity 1: _____

	Time to Complete Activity
With thumb	
With partial thumb	
With no thumb	

Activity 2: _____

	Time to Complete Activity
With thumb	
With partial thumb	
With no thumb	

Activity 3: _____

	Time to Complete Activity
With thumb	
With partial thumb	
With no thumb	



Who Are You?

Lesson Plan



Activity: Who Are You?

PRE-ZOO

POST-ZOO

Zoo-Do!

This activity would be great to do in one of the Zoo's open space areas (Patas Lawn, Playfield Lawn, or Nature Exploration Area), but can just as easily be played in your classroom!

Materials:

- Optional: index cards or labels with animals written on them (1 per student)

Procedure:

As a class, one student thinks of an animal (or plant or fungi) and the other students have twenty questions to try and figure out what the organism is. The student who successfully guesses the animal gets to 'brainstorm' during the next round.

A variation: Pre-make sheets of labels/cards with animals written on them. When the students are ready to play, a label is put on each student's back (or a card is held up to their forehead so they are unable to see which animal they have been assigned). To encourage mingling, each student can only ask one question per classmate. This will keep students moving and will require them to shape their questions based on the answers they have received previously.



INSECT ZOO WORD SEARCH



Name: _____

T P L L B D R Q R R N V B S B
 A N E G T L H K B M X M G F A
 C C A C F X A N M K Q U Q D R
 P W F R W B X C L A B I U C C
 A D I W E I E F K R B N P A T
 V W N K G T U M E W G M K D I
 F G S O N S S T X B I C P O M
 G U E X U K A E E D U D X E R
 W R C C G W Y E V R R Z O M E
 G W T D T C T F O R E O E W H
 U O P N V L X K X V A L I N D
 V C A E E B Y E N O H H T L N
 R I U C L A G N A Z Q V D X A
 G F O O O D G I A O Y R X E L
 D A R K L I N G B E E T L E R

RED HARVESTER ANT	DUNG BEETLE	BLACK WIDOW
LAND HERMIT CRAB	HONEY BEE	DARKLING BEETLE
GIANT WATER BUGS	LEAF INSECT	



ANIMATH

Addition and Subtraction



Name: _____

RAPID READERS

Our chimpanzees are handed a stack of 12 magazines. In an hour, they have finished looking at 3 magazines. How many do they have left to look through? By the end of the day, they have looked through 8 more magazines. How many do they have left over?

My work and answer:



HOP ABOUT

The Australian WalkAbout is full of different species! You see 9 red kangaroos, 1 gray kangaroo, 3 wallabys, 2 wallaroos, and 1 emu. How many total animals do you see in the Walkabout?

My work and answer:



BIG DADDY

At 2 years old, our Komodo Dragon had a 24-inch body. If his total length was 47 inches, how long was his tail?

My work and answer:



WIDE WINGS

If a bald eagle has a wingspan of 80 inches and a turkey vulture has a wingspan of 65 inches, what is the difference of their wingspans?



My work and answer:



ANIMATH

Addition and Subtraction



Name: _____

PRAIRIE DOG SNACK

There are 42 prairie dogs enjoying an afternoon yam snack when a gull flies overhead and scares 39 of them into burrows. How many prairie dogs stayed above ground?

My work and answer:



AFRICAN ADVENTURE

In the three-acre African Savanna, you see 4 Reticulated giraffes, 4 Greater kudus, 2 Scimitar-horned oryx, 3 Grant's Zebras, 5 Yellow-backed duikers, 5 Ostriches, 2 Eastern African crowned cranes, and 4 Marabou storks. How many total animals do you see in the African Savanna?



My work and answer:

BUSY BEES

35 honey bees are very busy pollinating the cardoon flowers in Greenie's Conservation Corner. As you walk by, 18 honey bees fly away. How many honey bees are left at Greenie's?



My work and answer:



MARCHING PENGUINS

If there are 52 adult penguins on Penguin Island and 5 new chicks join them after March of the Penguins, how many penguins are now on Penguin Island?

My work and answer:

ANIMATH

Multiplication and Division



Name: _____



TAIL PRIDE

African Lion's tails are around 3.5 feet long. If there are 3 lions in the Zoo's pride, how many inches of African Lion tail are swishing at the Zoo?

My work and answer:



LEAPING LEMURS

Ring-tailed, black, red ruffed, black and white ruffed, blue-eyed black, and red-fronted brown lemurs all live in Lipman Family Lemur Forest. If there are 6 of each type of lemur, how many lemurs live at the San Francisco Zoo?

My work and answer:

LOTS OF LEGS

Australian walking sticks have 6 legs. In the Insect Zoo, you can find 6 walking sticks. How many walking stick legs are crawling in the Insect Zoo?

My work and answer:



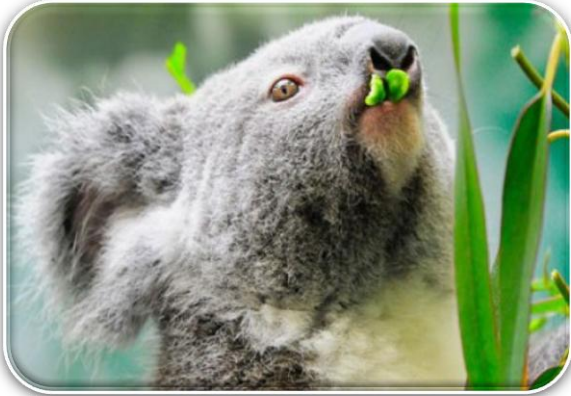
SPECIAL DELIVERY

Each morning, 3654 pounds of food leave the commissary for our hoofed animals. If each exhibit receives 203 pounds of food, how many hoofed animal exhibits are there?

My work and answer:



Name: _____



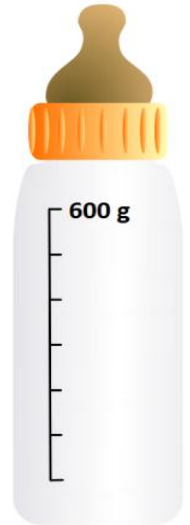
WHAT'S FOR LUNCH?

Very hungry koalas can eat up to 160 branches of eucalyptus every day. If the Zoo has 5 koalas, how many branches of eucalyptus are they fed on a daily basis? If each branch is 4 feet long, how many feet of branches do the keepers feed the koalas every day?

My work and answer:

GULPING GORILLA

A baby gorilla drinks 150g of milk every day. How many days would it take her to finish this bottle?



My work and answer:



GOODNIGHT GOATS

If there are 15 goats in the Fisher Family Farm and at night they sleep 3 per stall, how many stalls must there be in the barn?

My work and answer:

JUMP FOR JOY

If a snow leopard can jump 20 feet in a single leap, how many times would it need to jump to reach 100 feet?



My work and answer:

Name: _____

Use the **Color Code** to color the map. Cut out the animals on the right side of the page. Use the **Map Key** to glue each animal to a square pointing to its biome.

Color Code

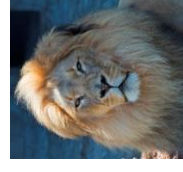
desert = brown

rain forest = green

savanna = yellow



Map Key	
	dung beetle
	chimpanzee
	giraffe
	Waldrapp ibis



African lion



chimpanzee



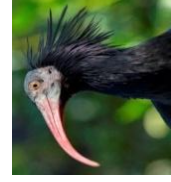
dung beetle



giraffe



gorilla



Waldrapp ibis