

Teaching Activity Guide

The Great Divide

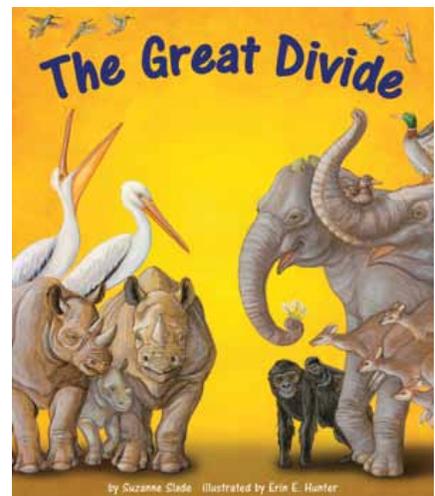


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by Suzanne Slade
illustrated by Erin E. Hunter

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 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 storytime 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.

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.

Silly Sentence Structure Activity: 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 information in the book.

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.

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.

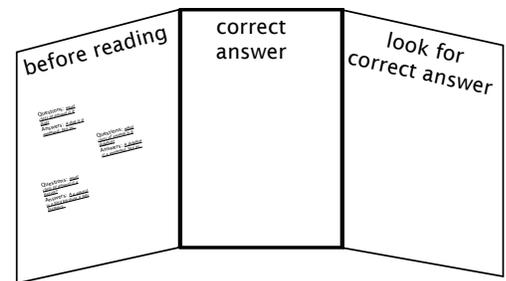
What Do Children Already Know?

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

A collective noun is a word used to describe a group of something. A group of students in a specific class with a specific teacher is a class. A group of related people that live together is a family. What are some other collective nouns that you can think of? List as many as you can think of.

What are some ways to divide something?

Language Arts & Science: Five Senses

Objective Core Language Literature 4: Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

Re-read the story and write down any words that relate to the five senses:

Animal	Touch	Taste	Sight	Smell	Hearing
					
					
					
					
					
					
					
					
					

Language Arts: 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. If you do not have classroom sets of the book, it is helpful to project an illustration on a whiteboard. Check Web site (www.ArbordalePublishing.com) for book “previews” that may be used.

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.

Cross-Curricular: 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, using the word correctly.
- 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.

Cross Curricular: Silly Sentences

Objective Core Language Arts: 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.

Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

1. _____ noun tells us how many _____ adjective groups there are or how many are in each group.
2. When _____ verb ing things into _____ noun s, the groups should be equal in _____ noun .
3. Division can also tell us into how many equal pieces something can be _____ verb (_____ noun s).
4. Division is the opposite of _____ noun , just as _____ noun is the opposite of _____ noun .
5. The numbers being _____ verb are called _____ noun and the answer to a multiplication problem is called the _____ noun .
6. In _____ noun , the factors are called _____ noun s and the product is called the _____ noun .

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 poem.
- 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?

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

DIVISION
GOAT
SEA TURTLE
JELLYFISH
GORILLAS
PELICAN
BALE
TROOP
POD
HERD
SCHOOL

More Collective Nouns

Collective nouns are words used to describe a group of something.

Animal	Collective Noun/Group
aardvark	pack, grouping
alligator	congregation, pod (of young), bask, congregation
alpaca	herd
american bison (buffalo)	herd
ant	army, colony, nest, swarm, byke
antelope	herd, cluster
ape	troop, shrewdness
armadillo	herd, arrangement, pack
ass/donkey	pace, band, drove, herd, coffle
baboon	troop, tribe, flange, congress
badger	cete, colony, sett, company
barnacles	splatter
bat	colony, cloud, cauldron
bear	sleuth, sloth
beaver	family, colony
bee	hive, swarm (in flight), bike, drift, grist, swarm, colony
bird	dissimulation (small birds only), fleet, flight, flock, parcel, pod, volery
bison	herd, troop
bison, buffalo	gang, herd, obstinacy
bitterns	siege
boar	singular, sounder
buffalo	herd, troop, gang, obstinacy
bush baby	congress, plot, gathering
butterfly	flutter, swarm, rabble or kaleidoscope (group of caterpillars is an army)
buzzards	wake
camel	flock, herd, caravan, train
caribou	herd
cat	clowder, clan, cluster, clutter, glaring, kindle (young)
caterpillars	army
cattle	herd, drift, drove, mob
cheetah	coalition

Animal	Collective Noun/Group
chicken	flock, brood (of hens), clutch (of chicks), peep (of chicks)
chickens	peep
chimpanzee	troop, group, harem
clam	bed
cobra	quiver, has
cockroach	intrusion
codfish	school
Collared peccary (javelina) same as wild pig	drove, herd, litter (of pups), sounder, drift, mob
cormorant	gulp, flight
coyote	pack, rout
crab	consortium
crane	herd, sedge, siege, flock
crocodile	bask, nest, congregation, float
crow	murder, muster
deer	herd, mob
desert tortoise	turn, dole, bale
dinosaur	herd (of plant-eaters), pack (of meat-eaters)
dog	pack, litter (young), kennel, gang, legion
dogfish	troop
dolphin	team, school, pod, herd, team, alliance (male), party (female)
donkey	drove, herd
dove	arc, dule, dole, flight, pitying
dragonfly	cluster, flight
duck	flock, team, brace, bunch, sord, raft
dugong	herd
eagle	aerie, convocation, brood
echidna	flock, parade, herd
eel	bed, swarm, array
elephant	herd, flock, parade
elephant seal	herd, pack, arrangement
elk	herd, gang
emu	mob

Animal	Collective Noun/Group
falcon	cast
ferret	business, fesyne
finch	charm, quiver
fish	draft, run, school, shoal
flamingos	stand, flamboyance
fly	cloud, swarm
fox	skulk, leash, troop
frog	army, colony, bundle
gaur	herd
gazelle	herd
geese	gaggle
gerbil	horde
Gila monster	lounge
giraffe	herd, corps, tower, group
gnat	swarm, cloud, horde
gnu	herd
goat	herd, tribe, trip
goldfinches	charm
goldfish	troubling
goose	flock, gaggle, skein (only while in flight), wedge (flying in a "V" formation)
gorilla	troop, band
grasshopper	cloud, swarm
grouse	covey
guinea fowl	rasp
guinea pig	group, herd
gull	colony, flock
hamster	horde
hare	down, husk, warren, band
hawk	aerie, cast, kettle, boil
hedgheg	array
hens	brood
heron	sedge, siege
hippopotamus	bloat, crash, herd, thunder
hog	drove, herd, litter (a group of young born to one mother)

Animal	Collective Noun/Group
hornet	nest, swarm
horse	stable, harras, herd, team (working horses), string or field (race horses)
hound	cry, mute, pack, brace
hummingbird	charm, chattering, drum
hyena	clan, cackle
jackal	pack
jackdaws	clattering, train
jay	band, party, scold
jellyfish	smack, smuck, smuth, fluther, bloom
kangaroo	troop, herd, mob
komodo dragon	bank
lapwings	desert
lark	exaltation
lemur	plot, congress, conspiracy
leopard	leap, prowl, spot
lion	pride
lizards	lounge
llama	herd, flock
lobster	risk
locust	host, swarm
loris	colony, drove, harem, troop
magpie	tiding, tribe, charm, gulp, flock, murder
mallard	team, sord, sute, brace, puddling, flush
manatee	herd
meerkat	comparison, mob, clan, gang, band
mice	nest
mole	labour, company, movement
monkey	barrel, troop, cartload
moose	herd
mosquito	swarm
mouse	nest, colony, harvest, horde, mischief
mule	barren, pack, span, rake
nightingale	watch, flock, route, match
okapi	herd
ostrich	flock, troop

Animal	Collective Noun/Group
otter	romp, bevy, lodge, family, raft
owl	parliament, stare, wisdom
ox	yoke, team, drove, herd, nye
oyster	bed, hive, cast, culch
parrot	company, flock
partridge	covey
peafowl	party, muster, ostentation, pride
pelican	scoop, pod, flock
penguin	colony, rookery
pheasant	brood (a family), nye (a large group), nye
pig	drove, herd, litter (of pups), sounder, drift, mob
pigeon	flock, kit
plovers	congregation
pony	herd, marmalade, string
porcupine	prickle
porpoise	herd, pod, school
prairie dog	coterie, town
pronghorn	herd
quail	bevy, covey, drift
quelea	flock, swarm
rabbit	warren, nest, colony, bevy, bury, drove, trace
raccoon	nursery, gaze
ram	flock
rat	colony, horde, mischief, pack, plague, swarm
rattlesnakes	rhumba
raven	unkindness , congress, conspiracy, parliament, murder
red deer	herd
red panda	pack
reindeer	herd
rhinoceros	crash, herd
salamander	band
sardines	family
sea lion	pod, colony, crash, flock, harem, bob, herd, rookery, team, hurdle
sea urchin	larva, pluteus (free-swimming stage), juvenile (young urchin)

Animal	Collective Noun/Group
seabirds	wreck
seal	pod, rookery, bob, herd, harem
seastar	group, school
shark	shoal, school, shiver
sheep	pack, drift, drove, flock, herd, mob, trip
shrew	colony, race, drove
skunk	surfeit
snake	bed, nest, pit
sparrow	host
spider	cluster, clutter
squid	roundup, audience
squirrel	squad, dray, scurry
starlings	chattering, murmuration
storks	mustering
swallow	flight
swan	bevy, game, herd, team, wedge (flying in a "V" formation)
swans	herd, eyrar
swine	souder, drift, herd
tapir	herd
termite	swarm (while flying), colony
tiger	ambush, streak
toad	knot, lump
trout	hoover
turkey	rafter
turtle	turn, dole, bale
vultures	venue, kettle (when circling)
wallaby	mob
walrus	herd, pod
wasp	swarm, hive, colony
weasel	pack, colony, gang, sneak
whale	gam, grind, herd, pod, school
wolf	pack, rout
wombat	wisdom, mob
woodpecker	descent
worm	bed, bunch, clew, squirm

Animal	Collective Noun/Group
wren	flock, herd
yak	herd
yellow jacket	colony
zebra	dazzle, herd. crossing, zeal

Find animals that use the same collective noun.

What are some “funny” or strange collective nouns?

How many of these collective nouns have you heard before?

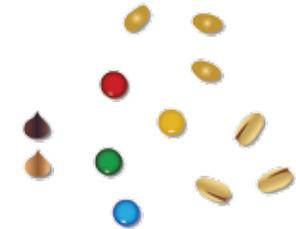
Write a poem about an animal and its collective noun (like a rhumba of rattlesnakes).

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?

- Are there some items that fit more than one group or don't fit any group?
- 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.

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 and belongs to one of the other 35 phylums.

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		
	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		
Metamorphis?	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		
	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		
	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		
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	both (omnivore)		

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

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

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

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

Animals break into the vertebrate or invertebrate classification at the Phylum level. There are 35 different phylums of invertebrates but these are some of the more familiar ones:

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 tracheae
- 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

Arthropod

Arachnia (Spiders):

- no backbone
- one or two body segments
- pincers or fangs near mouth
- 4 pairs of legs
- no antennae

Arthropod

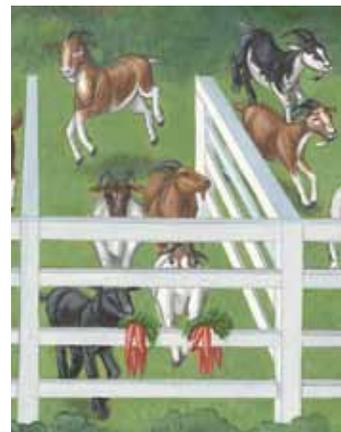
Crustaceans (Crabs):

- hard outer covering
- no backbone (invertebrate)
- outside skeleton (exoskeleton)
- mouthparts adapted for chewing
- 5 or more pairs of legs
- claws
- 2 pairs of antennae
- 2 compound eyes on stalks
- adults have 2 or 3 body segments
- hatch from eggs
- cold-blooded

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

Physical or Behavioral?

Circle whether you think the adaptation is physical (P) or behavioral (B) or both:

1. P/B/both Sea turtles come to the surface of the ocean to breathe oxygen from the air using lungs.
2. P/B/both Purple jellyfish catch small fish and crustaceans with their stinging tentacles.
3. P/B/both Hummingbirds have long slender bill to collect nectar from flowers.
4. P/B/both Rhinos spend most of the day in water to stay cool.
5. P/B/both Male mallards are bright colored while females are brown to hide on the nest. If danger comes, the male draws attention away from the nest.
6. P/B/both Wallaby mothers keep their joeys safe and sound in a pouch until the young are big enough and old enough to be on their own.
7. P/B/both Gorillas live in social groups with many females and one male.
8. P/B/both River toads release poison to protect themselves.
9. P/B/both Elephants use their trunks to sense the world around them and to drink water.
10. P/B/both American white pelicans scoop prey into their bill and gular pouch.
11. P/B/both Snow leopards have short front legs with large paws for walking on snow and long back legs for leaping.
12. P/B/both Billy goats use their horns to fight each other for dominance.

Pick an animal from the book and answer the following questions:
My animal is:

<p>Where (in what kind of habitat) does your animal live?</p>	<p>What is one of its physical adaptations and how does it help the animal live in its environment?</p>
<p>What is another of its physical adaptations and how does it help the animal live in its environment?</p>	<p>What is another of its physical adaptations and how does it help the animal live in its environment?</p>

What behavioral adaptations (if any) were mentioned in the story?

collective noun

my definition

my drawing

division

my definition

my drawing

troop

my definition

my drawing

pod

my definition

my drawing

Math

It's best to memorize the basic multiplication and division facts. Until then, you can use a multiplication table to help find the answer. The top row and left-side column of numbers (in yellow) represent the factors. To find the product run your finger over and down to where the row and column meet.

If you want to divide, find the factor used to divide and then run your finger over or down until you find the product number. Then run your finger over or up to find the other factor.

If ten leatherback sea turtles are in five bales, how many in each bale?

If twelve hummingbirds are in four charms, how many in each charm?

If nine leopards are in three leaps, how many in each leap?

If twelve ducks are in two teams, how many in each team?

If six rhinos are in three crashes, how many in each crash?

If sixteen wallabies are in two mobs, how many in each mob?

If twenty gorillas go off in five different directions, how many in each band?

If sixteen toads are at four different puddles, how many in each knot?

If fifteen elephants are in three rings, how many in each herd?

If fourteen pelicans are in two flocks, how many in each flock?

If eighteen jellyfish are in three smacks, how many in each smack?

x	1	2	3	4	5	6	7	8	9	10	11
1	1	2	3	4	5	6	7	8	9	10	11
2	2	4		8					18	20	22
3	3						21	24	27	30	33
4	4	8				24	28	32	36	40	44
5	5				25	30	35	40	45	50	55
6	6			24	30	36	42	48	54	60	66
7	7		21	28	35	42	49	56	63	70	77
8	8		24	32	40	48	56	64	72	80	88
9	9	18	27	36	45	54	63	72	81	90	99
10	10	20	30	40	50	60	70	80	90	100	110
11	11	22	33	44	55	66	77	88	99	110	121

The Great Divide

x	1	2	3	4	5	6	7	8	9	10	11
1	1	2	3	4	5	6	7	8	9	10	11
2	2	4	6	8	10	12	14	16	18	20	22
3	3	6	9	12	15	18	21	24	27	30	33
4	4	8	12	16	20	24	28	32	36	40	44
5	5	10	15	20	25	30	35	40	45	50	55
6	6	12	18	24	30	36	42	48	54	60	66
7	7	14	21	28	35	42	49	56	63	70	77
8	8	16	24	32	40	48	56	64	72	80	88
9	9	18	27	36	45	54	63	72	81	90	99
10	10	20	30	40	50	60	70	80	90	100	110
11	11	22	33	44	55	66	77	88	99	110	121

If ten leatherback sea turtles are in five bales, how many in each bale?

If twelve hummingbirds are in four charms, how many in each charm?

If nine leopards are in three leaps, how many in each leap?

If twelve ducks are in two teams, how many in each team?

If six rhinos are in three crashes, how many in each crash?

If sixteen wallabies are in two mobs, how many in each mob?

If twenty gorillas go off in five different directions, how many in each band?

If sixteen toads are at four different puddles, how many in each knot?

If fifteen elephants are in three rings, how many in each herd?

If fourteen pelicans are in two flocks, how many in each flock?

If eighteen jellyfish are in three smacks, how many in each smack?

Division Patterns

You can also find the missing factor using the division chart, below. The top row (in blue) represents the product. The left-side column of numbers (in yellow) represent the known factor. To find the “missing factor” or the division answer, run your finger over and down to where the row and column meet.

Why aren't there numbers in all the squares?
Can you find any patterns in the numbers?

What do you notice about the factor of “1?”

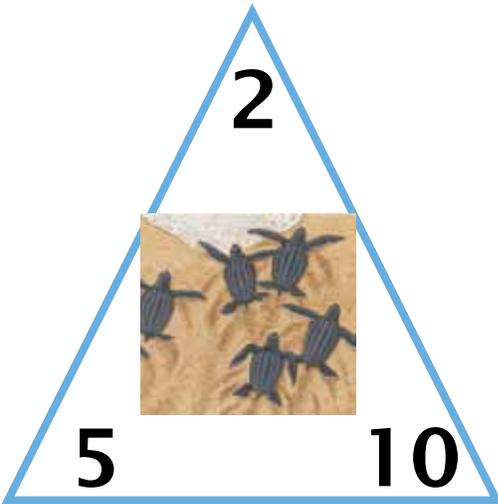
What number is a factor for all even numbers? Color all even factors one color.

Which numbers can only be divided by itself and 1? Those numbers are called prime numbers.

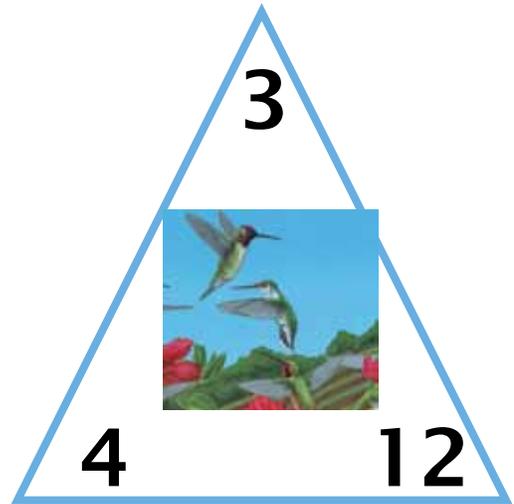
/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2		1		2		3		4		5		6		7		8		9		10
3			1			2			3			4			5			6		
4				1				2				3				4				5
5					1					2					3					4
6						1						2						3		
7							1							2						
8								1								2				
9									1									2		
10										1										2

$1 \div 1 = 1$	$2 \div 2 = 1$	$3 \div 3 = 1$	$4 \div 4 = 1$	$5 \div 5 = 1$	$6 \div 6 = 1$	$7 \div 7 = 1$	$8 \div 8 = 1$	$9 \div 9 = 1$
$2 \div 1 = 2$	$4 \div 2 = 2$	$6 \div 3 = 2$	$8 \div 4 = 2$	$10 \div 5 = 2$	$12 \div 6 = 2$	$14 \div 7 = 2$	$16 \div 8 = 2$	$18 \div 9 = 2$
$3 \div 1 = 3$	$6 \div 2 = 3$	$9 \div 3 = 3$	$12 \div 4 = 3$	$15 \div 5 = 3$	$18 \div 6 = 3$	$21 \div 7 = 3$	$24 \div 8 = 3$	$27 \div 9 = 3$
$4 \div 1 = 4$	$8 \div 2 = 4$	$12 \div 3 = 4$	$16 \div 4 = 4$	$20 \div 5 = 4$	$24 \div 6 = 4$	$28 \div 7 = 4$	$32 \div 8 = 4$	$36 \div 9 = 4$
$5 \div 1 = 5$	$10 \div 2 = 5$	$15 \div 3 = 5$	$20 \div 4 = 5$	$25 \div 5 = 5$	$30 \div 6 = 5$	$35 \div 7 = 5$	$40 \div 8 = 5$	$45 \div 9 = 5$
$6 \div 1 = 6$	$12 \div 2 = 6$	$18 \div 3 = 6$	$24 \div 4 = 6$	$30 \div 5 = 6$	$36 \div 6 = 6$	$42 \div 7 = 6$	$48 \div 8 = 6$	$54 \div 9 = 6$
$7 \div 1 = 7$	$14 \div 2 = 7$	$21 \div 3 = 7$	$28 \div 4 = 7$	$35 \div 5 = 7$	$42 \div 6 = 7$	$49 \div 7 = 7$	$56 \div 8 = 7$	$63 \div 9 = 7$
$8 \div 1 = 8$	$16 \div 2 = 8$	$24 \div 3 = 8$	$32 \div 4 = 8$	$40 \div 5 = 8$	$48 \div 6 = 8$	$56 \div 7 = 8$	$64 \div 8 = 8$	$72 \div 9 = 8$
$9 \div 1 = 9$	$18 \div 2 = 9$	$27 \div 3 = 9$	$36 \div 4 = 9$	$45 \div 5 = 9$	$54 \div 6 = 9$	$63 \div 7 = 9$	$72 \div 8 = 9$	$81 \div 9 = 9$

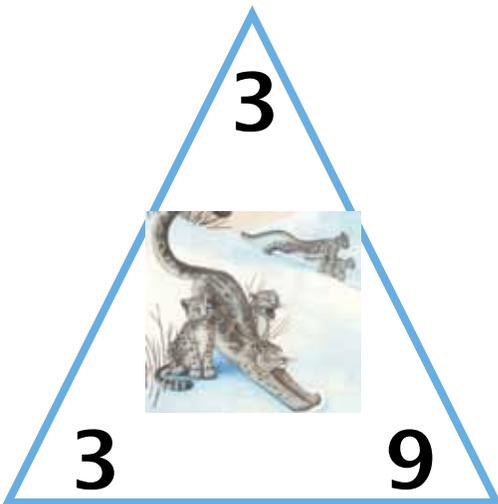
Division: Opposite of Multiplication



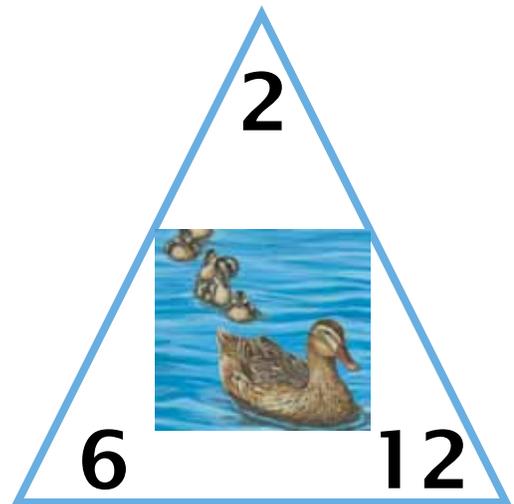
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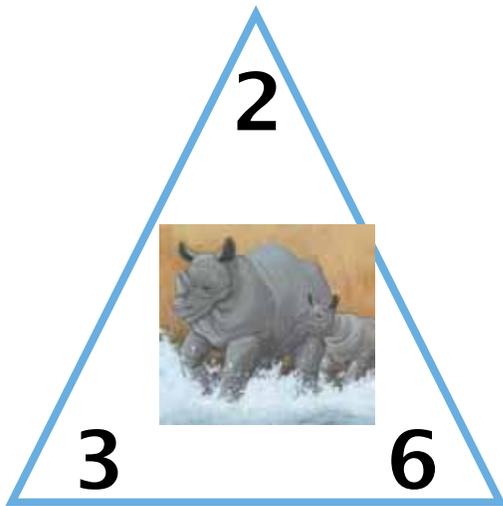
If twelve hummingbirds are in four charms, how many in each charm?



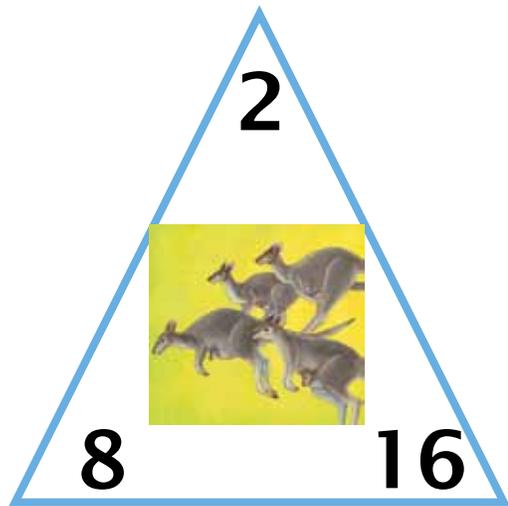
If nine leopards are in three leaps, how many in each leap?



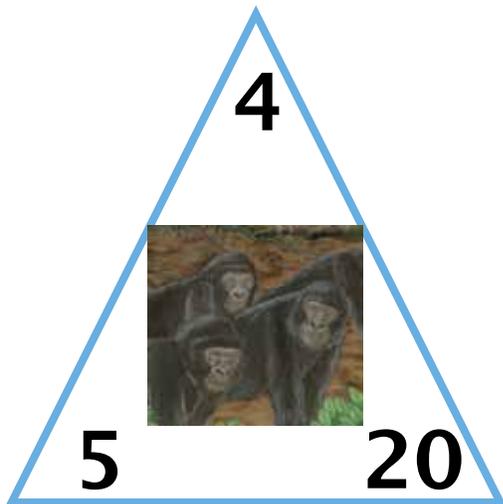
If twelve ducks are in two teams, how many in each team?



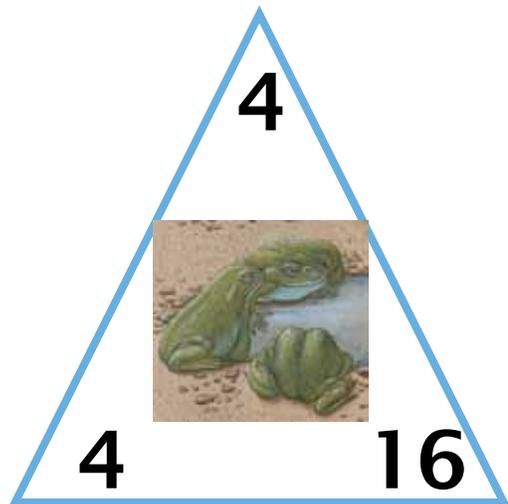
If six rhinos are in three crashes, how many in each crash?



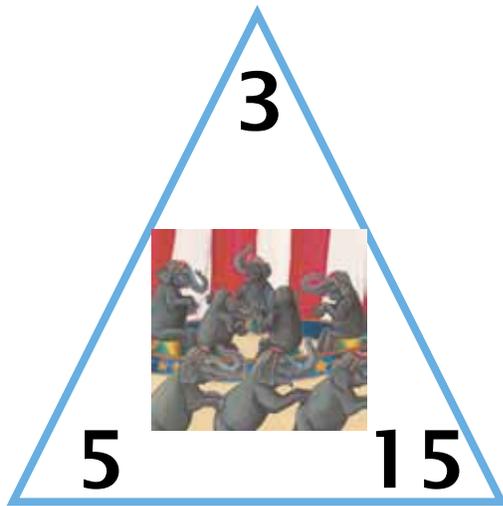
If sixteen wallabies are in two mobs, how many in each mob?



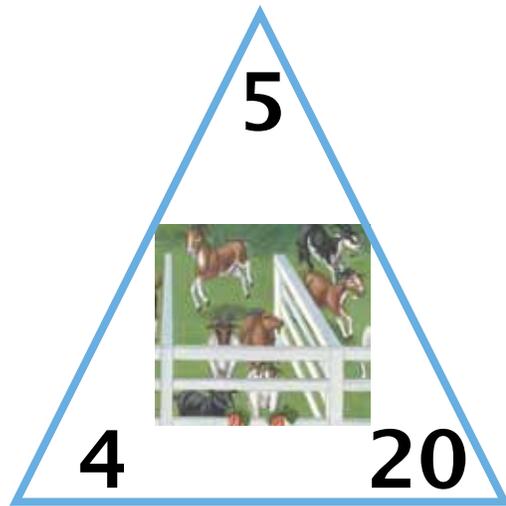
If twenty gorillas go off in five different directions, how many in each band?



If sixteen toads are at four different puddles, how many in each knot?



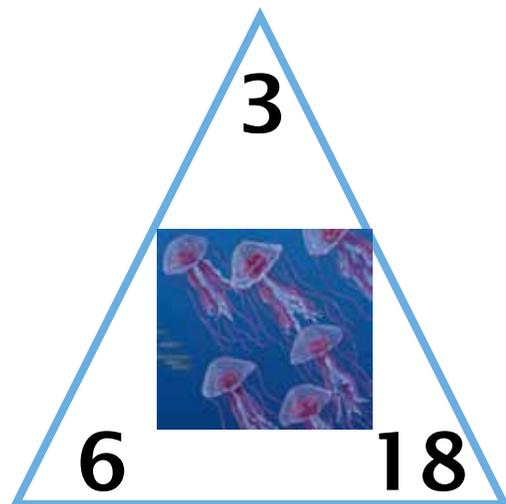
If fifteen elephants are in three rings,
how many in each herd?



If twenty billygoats are in four pens, how
many in each tribe?



If fourteen pelicans are in two flocks,
how many in each flock?



If eighteen jellyfish are in three smacks,
how many in each smack?

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 animals live in the same state or province as you?



leatherback sea turtles



Colorado River Toads

Mallard
Anas platyrhynchos



Map by Cornell Lab of Ornithology
Range data by NatureServe

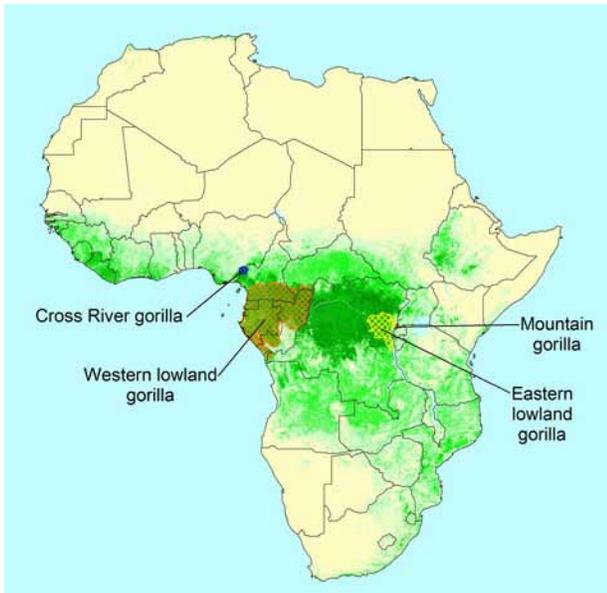
Mallard Ducks

American White Pelican
Pelecanus erythrorhynchos



Map by Cornell Lab of Ornithology
Range data by NatureServe

American White Pelican



Gorillas



Wallabies

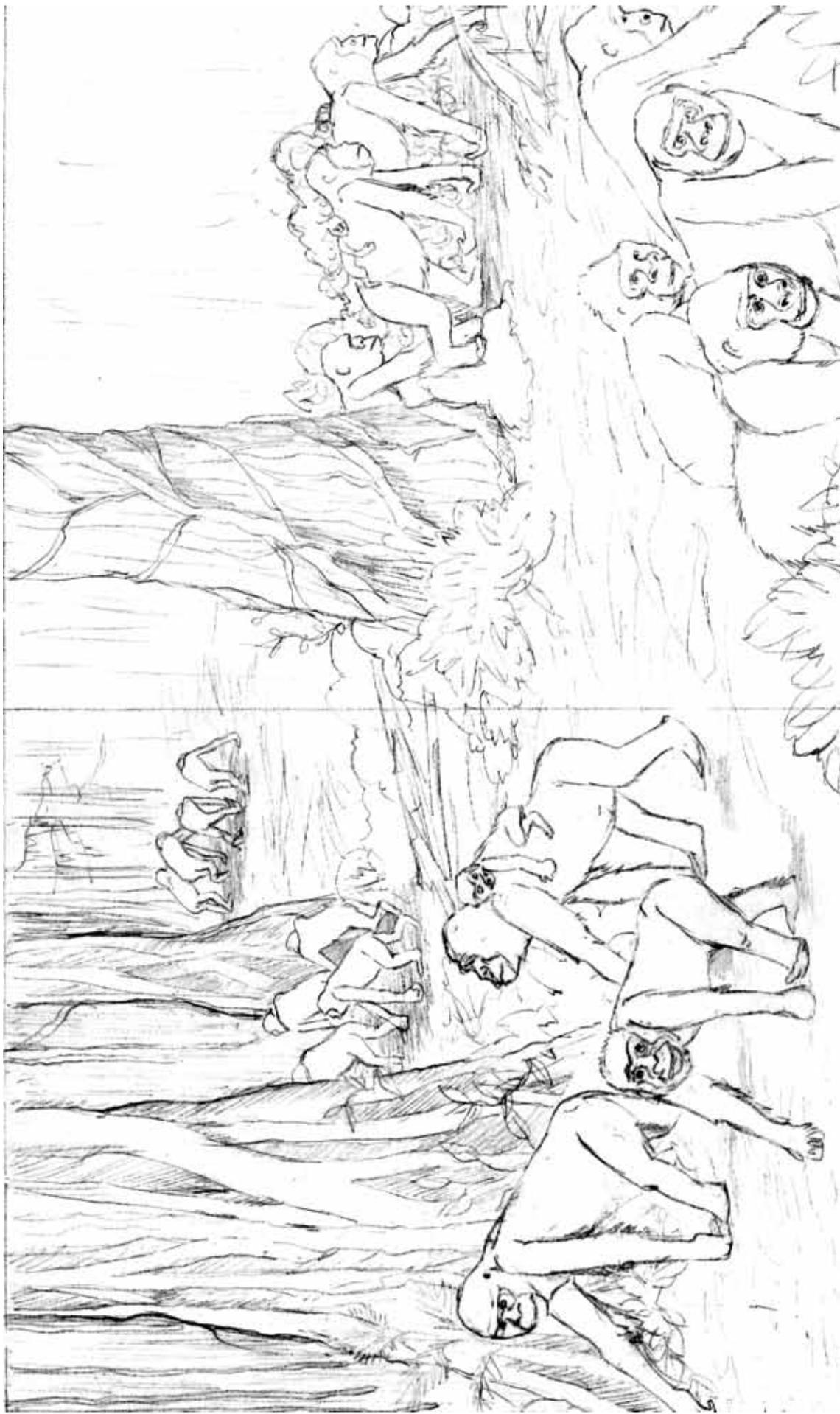


Rhinos



African Elephant

The Great Divide



The Great Divide



Glossary

Word	Definition	Part of Speech	Spanish
addition	a mathematical operation of combining two or more numbers into a sum.	noun	adición
billy goat	adult male goat	noun: animal	cabrón
break	to split into pieces	verb	romper, quebrar
clan	a close-knit group of interrelated families	noun: collective	clan
collective noun	a word used to describe a group of something	noun	nombre colectivo
divide	to separate things into equal groups	verb	dividir
dividend	a number to be divided by another number (divisor).	noun	dividendo
divisible	If a number has a whole number answer when divided by a second number, the first number is divisible by the second number; x is divisible by y if and only if $x = qy$ where y is a whole number.	adjective	divisible
division	a mathematical operation involving two numbers that tells how many groups there are or how many are in each group.	noun	división
divisor	the number by which the dividend is divided	noun	divisor
duck	a small, web-footed swimming bird	noun: animal	pato
equal	the same value	adjective	ser, ser igual a
factor	a number or expression that is multiplied by another to result in a product	noun	factor

Word	Definition	Part of Speech	Spanish
fish	a type of animal (classification) that lives in water, is cold-blooded, has scales, and breathes air through gills	noun: classification	pez (vive) pescado (comida)
flamingo	a large pink or red water bird with a long neck and long legs (tropical)	noun: animal	flamenco
flock (birds)	a group of birds	noun: collective	bandada
flock (sheep)	a group of sheep or goats	noun: collective	rebaño
fox	small to medium-sized canids (dog), with a long narrow snout, and a bushy tail.	noun: animal	zorro
fraction	a number that represents part of a whole, part of a set, or a quotient in the form $\frac{a}{b}$ which can be read as a divided by b.	noun	fracción
gorilla	a large, plant-eating primate found in Africa	noun: animal	gorila
group	a number of individuals or objects that are assembled together or that have some unifying relationship.	noun	grupo
herd	a group of certain large animals elephants, llamas, etc.	noun: collective	rebaño
hummingbird	tiny bird with bright, iridescent feathers and long slender bills; wings are specialized for vibrating flight	noun: animal	colibrí
invertebrate	animal without a backbone; about 97% of all known species are invertebrates	noun: classification	invertebrado

Word	Definition	Part of Speech	Spanish
jellyfish	clear, free-floating marine invertebrate	noun: animal	medusas, aguasmalas, el agua mala
leatherback sea turtle	the largest of all sea turtles	noun: animal	tortuga laúd
leopard	a large wild animal from Africa and Southern Asia that has golden fur with black spots	noun: animal	malla, leopardo
lion	a large social cat of the sub-Saharan Africa	noun: animal	león
llama	a large South American animal with a long neck and a thick coat, used for wool, meat, and carrying things	noun: animal	llama
meerkat	a small desert-living mammal (mongoose family) that lives in large social groups (mob or pack) in the southern part of Africa.	noun: animal	suricata
multiple	the product (answer) one whole number multiplied by another whole number	noun	múltiplo
multiplication	a mathematical operation to combine groups of equal amounts; repeated addition; the opposite of division	noun	multiplicación
multiply	to add a number to itself a particular number of times	verb	multiplicar
number	the concept of an amount, quantity, or how many items there are in a collection	noun	número
opposite	completely different	adjective	opuesto
pack	collective noun for wolves	noun: collective	manada

Word	Definition	Part of Speech	Spanish
peacock	a large male bird with long, brightly-colored blue-green tail feathers	noun: animal	pavo real
pelican	a large seabird	noun: animal	pelicano
penguin	a black and white, ocean-living bird that flies through water instead of air	noun: animal	pingüino
pride	a group of lions that live together	noun: collective	manada de leones
product	the number (answer) that is obtained when two or more numbers (factors) are multiplied	noun	producto
repeated addition	addition of equal groups; often used to model the concept of multiplication.	noun	suma repetida
rhinoceros	a large animal with very thick gray skin and one or two horns on its nose. It lives mainly in southern Asia and Africa.	noun: animal	rinoceronte
rookery(ies)	a breeding place or colony of animals such as penguins, sea lions, and seals; collective noun for penguins, seals, etc.	noun: collective	colonia de grajos
school (of fish)	collective noun for fish	noun: collective	cardumen, banco, la mancha
squirrel	small to medium sized rodents (mammals) with large, bushy tails	noun: animal	ardilla
subtraction	a mathematical operation that finds the difference between two quantities or how much more one quantity is than a second quantity.	noun	sustracción

Word	Definition	Part of Speech	Spanish
wallaby	a small, kangaroo-like animal from Australia	noun: animal	walabí
weasel	a small, active meat-eating animal	noun: animal	Mustela
whale	a marine mammal that breathes through one or two blowholes on the top of its head	noun: animal	ballena
wolf	a large carnivore, related to dogs; threatened or endangered wolves include gray, red, and Mexican	noun: animal	lobo

Answers

Silly Sentences

1. **Division** tells us how many **equal** groups there are or how many are in each group.
2. When **dividing** things into **groups**, the groups should be equal in **number**.
3. Division can also tell us into how many equal pieces something can be **broken (fractions)**.
4. Division is the opposite of **multiplication**, just as **subtraction** is the opposite of **addition**.
5. The numbers being **multiplied** are called **factors** and the answer to a multiplication problem is called the **product**.
6. In **division**, the factors are called **divisors** and the product is called the **dividend**.

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

DIVISION
 GOAT
 SEA TURTLE
 JELLYFISH
 GORILLAS
 PELICAN
 BALE
 TROOP
 POD
 HERD
 SCHOOL

Appendix A—“What Children Know” Cards

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

Appendix B—U.S. Map



Appendix C—North America Map



Appendix D—World Map

