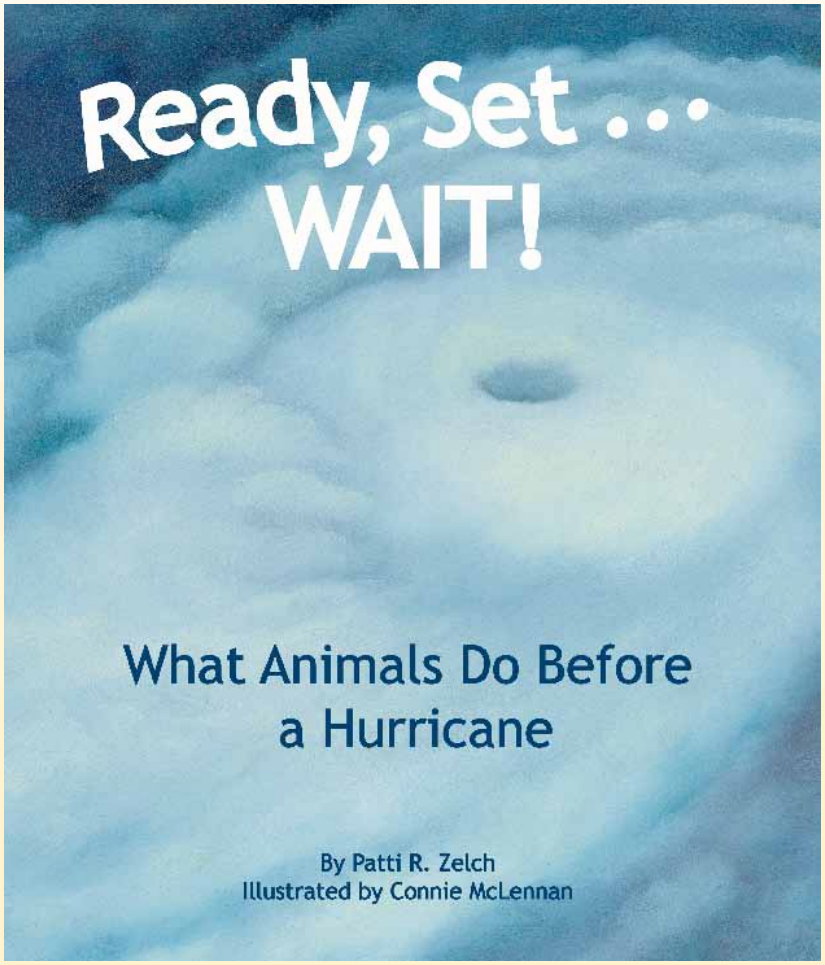
Teaching Activity Guide



This guide is designed for:

- teachers in the classroom
- homeschooling parents
- parents/grandparents who want to encourage their children to learn (some of the group activities can even be used for a book-themed birthday party!)
- librarians and bookstore employees for story times
- after-school program leaders
- zoo, aquarium, nature center, park & museum educators

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How to Use This Activity Guide

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.

Glossary/Vocabulary words: Words may be written 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 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.

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

Animal Card Games:

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

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

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

Who Am I? Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Without knowing what card they have, children should put on a "card necklace" so that the card is on his/her back. They have to ask other children "yes/no" questions to try to guess what animal they are. This is a great group activity!

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 it becomes the next actor.

Math Card Games (Make three 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, he or she 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 it on the table and recites the four facts related to the family. For example, if someone has a 2, 3, & 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."
- Play continues following the regular "go fish" rules.

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."

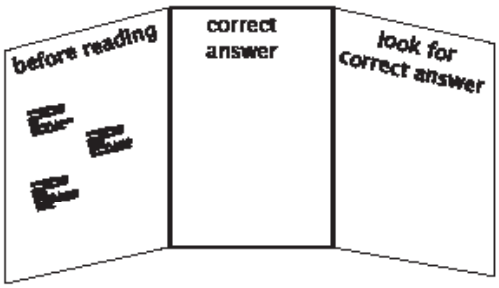
Do the children have any more questions about the subject ? If so, write them down to see if the question is answered in the book.

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

If the answer was correct, move that card to the "Information Verified" 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 the answers have been found and corrected, the card can be moved to the "correct answer" panel.



Pre-Reading Questions

What is a hurricane?

What is a tropical cyclone?

What is a typhoon?

What do people do to prepare for a hurricane?

How do we know if one is coming our way?

What do animals do to prepare for a hurricane?

What are some ways scientists think animals know a hurricane is coming?

What are some ways that wild animals can stay safe during a hurricane?

What are some ways that wild animals might get hurt during a hurricane?

What is a hurricane watch?

What is a hurricane warning?

What are scientists who study weather called?

What are scientists who stddy animal behavior called?

What is a storm surge?

Thinking it Through & Writing Prompts

Write a different ending to the story.

Write a song about a hurricane coming.

Describe the location of where you think this story took place. Can you find such a location on a map or globe?

Have you even seen any of these animals? If so, describe where you saw them and what they were doing (if you can remember).

What are some other wild animals that might have to deal with a hurricane?

What do you think they might do?

If you were a biologist, how would you research what the animals do before and during a hurricane?

The illustrator drew a “New England” lobster, not a tropical (Spanish) lobster (without the big front claws). That’s because the researchers studied New England lobsters. Do you think Spanish lobsters would have the same behavior before a hurricane? Why or why not? If you were a biologist, how do you think you would study this?

Comprehension Questions

What were the boy and his sister doing to get ready for the hurricane?

What was the dad doing?

What made the boy wonder about what wild animals would do durng the hurricane?

What did the fish do?

What did the dolphins do?

What did the sharks do?

What did the lobsters do?

What did the manatees do?

What did the birds do?

What did the crocodiles do?

What did the butterflies do?

What did the rabbit and mice do?

Vocabulary Game

This activity 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 white board. 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.

Using the Words

The following activities may be done all at once or over a period of several days.

- Continue to add words to the vocabulary list as children think of them.
- 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 to create silly sentences, below).
- Now sort the vocabulary words into more specific categories. For example, nouns can be divided into plants, animals, rocks, minerals, etc. They can be divided into living/non-living, or into habitat-related words.
- 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

_____ _____ is the weight of the column of _____ that
noun noun
extends from the _____ (or sea level) to the top of the atmosphere.
noun
The lower the air pressure, the stronger the _____ is.
noun
_____ _____ is when the strong wind _____es ocean
noun verb
water onto land—much higher than the average high tide line.
These powerful storms develop over _____, _____ waters.
adjective adjective
The _____, storm surge, and heavy amounts of _____ and
noun noun
_____ can cause a tremendous amount of _____.
noun noun
Because the storms need _____ water, they begin to lose strength
adjective
when they hit _____.
noun
The strong winds _____ _____ in the northern
verb adverb
hemisphere and clockwise in the _____ hemisphere.
adjective
Hurricanes are also called _____ or tropical _____ depending
noun noun
on where they are in the world.
Hurricanes and tropical storms cause all kinds of _____. The stronger
noun
the winds and the bigger the _____, the more damage they cause.
noun
On land, winds can blow down _____s, rip out _____s, or tear
noun noun
roofs off _____s.
noun

Sequence Sentence Strips

Watch the news and listen to the radio to learn where the storm might be heading.
Once it looks like the storm is coming your way, you should start making preparations. Don't wait until it is too late.
A hurricane watch means that hurricane strength winds are possible in the area within the next 48 hours (2 days).
A hurricane warning means that hurricane strength winds are expected in the area within the next 36 hours (1 1/2 days).
Gather food that doesn't need to be refrigerated and can be eaten without being cooked. Remember to pack a can opener!

Fill as many containers with water as possible. That way you will have drinking water after the storm goes by. There should be at least one gallon of drinking water per person per day for a week.
You should pack a bag of toys, books, cards, and games that will keep you busy if there is no electricity.
If you live along the coast, you may have to evacuate (leave) your home in order to stay safe.
You wait!

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

HURRICANE

TROPICAL

CYCLONE

DAMAGE

CATEGORY

PREPARE

SHARK

FISH

DOLPHIN

RABBIT

WIND

STRONG

LAND

Edible Sorting and Classifying Activity

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 criteria 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 criteria? 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?

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 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		
	hard outer covering		
Color/patterns	stripes or spots		
	mostly one color		
	skin color changes		
	bright, vivid colors		
Gets oxygen	lungs		
	gills		
Body Temperature	warm-blooded (endothermic)		
	cold-blooded (ectothermic)		
Babies	born alive		
	hatch from eggs		
	born alive or hatch from eggs		
Metamorphis?	complete		
	incomplete		
	none		
Teeth	sharp		
	flat		
	no teeth (bill/beak)		
Food	plant eaters (herbivore)		
	meat eather (carnivore)		
	both (omnivore)		

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	flat		
	no teeth (bill/beak)		
Food	plant eaters (herbivore)		
	meat eather (carnivore)		
	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 eggs

warm-blooded

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

Reptiles:

dry scales or plates

backbone (vertebrate)

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

lungs to breathe

most hatch from leathery eggs

cold-blooded

Cold-blooded animals' body temperature comes from their surroundings

Fish:

most have scales covered with a thin layer of slime

backbone (vertebrate)

inside skeleton (endoskeleton)

gills to breathe

babies are either born alive or hatch from eggs

cold-blooded

Amphibians:

soft, moist skin

backbone (vertebrate)

inside skeleton (endoskeleton)

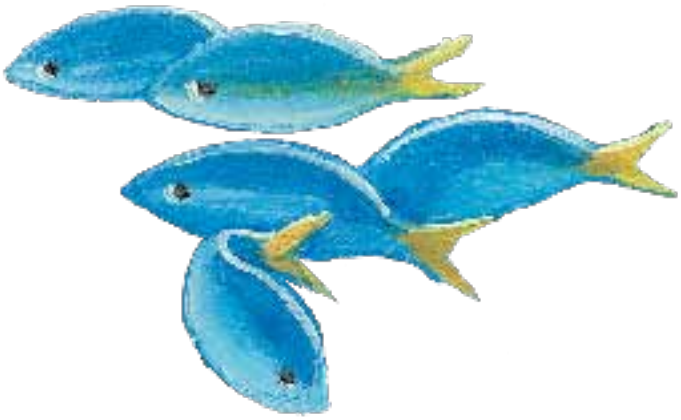
most hatchlings are called larvae or tadpoles and live in water, using gills to breathe

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

cold-blooded

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

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

body parts

teeth—depends on type of food it eats

feet, flippers, fins—ability to move

placement of eyes

how does it get oxygen (gills or lungs)

ears—or how it 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

poisinous 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.

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

My animal is:

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

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

hurricane	
my definition	my drawing

eye (of the hurricane)	
my definition	my drawing

storm surge	
my definition	my drawing

wind speed	
my definition	my drawing

A Hurricane is Coming! True or False?

Some animals might be able to sense the drop in atmospheric pressure to know that a hurricane is coming. But we rely on weathermen to tell us. Which of these sources help the weathermen (meteorologists) know if there is a hurricane coming?

1. Satellite images give them some information.

2. People called “Hurricane Hunters” fly airplanes into the storms to gather information.

3. Meteorologists learn how to use their ears to sense hurricanes as they develop

4. Ocean data buoys provide information about wind, water, and weather.

5. The US Navy has ships at sea whose only purpose is to watch for hurricanes.

Prove it! Testing a Hypothesis

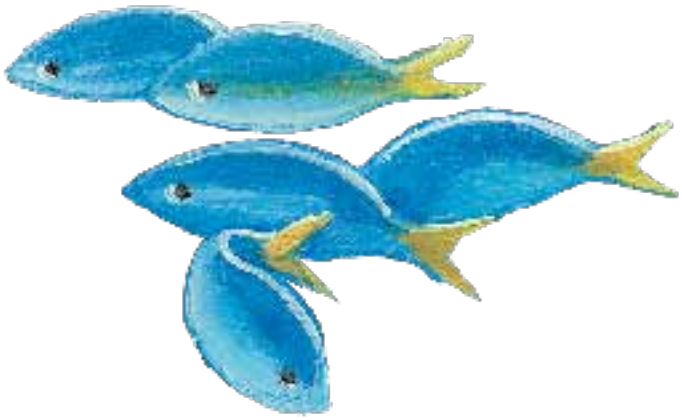
Animal Behavior: Scientific or Observation?

Your job is to prove or disprove each of the following animal behaviors as scientific or not. How will you do it?

What do animals do during natural disasters? Can animal behavior help us to predict certain natural disasters, such as earthquakes and tsunamis? These are questions that scientists would like to answer.

Scientists who study animal behavior are biologists. We learn a lot about animal behavior from the animals that live in zoos and aquariums. However, to learn more about wild animals, biologists sometimes put monitors or satellite tags on the animals so they can see where they go. In some cases, the animals have been injured or cared for in a wildlife rehabilitation hospital and are tagged before being released. In other cases, biologists go into the field, secure an animal, calm it, give it a physical examination, put the tag on, and then let the animal go. By following animal movements, biologists can get a good feel for how far and when animals travel, which helps us understand them better.

In order to understand animal behavior, biologists use the same scientific methods that you learn about:



My name: _____

My animal: fish

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Fishermen say that fishing is usually good right before a hurricane because the fish are really biting. They believe the fish are eating as much as possible before the storm stirs up the water, making it more difficult to find food. After Hurricane Charley hit Florida, scientists who had been monitoring fish sounds noted that the fish were louder during the storm and for three days after.

My hypothesis: _____

_____

_____

_____

How I will test it? _____

_____

_____

_____

Things I'll need: _____

_____

_____

Problems I might face: _____

_____

_____

My name: _____

My animal: butterflies

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Butterflies in a rainforest exhibit at the Florida Museum of Natural History hid in tree hollows and under rocks a few hours before the arrival of Hurricane Jeanne.

My hypothesis: _____

_____

_____

_____

How I will test it? _____

_____

_____

_____

Things I'll need: _____

_____

_____

Problems I might face: _____

_____

_____

My name:_____

My animal: crocodile

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: All of the endangered American crocodiles survived Hurricane Andrew. Scientists don't know where they went during the storm.

My hypothesis: _____

_____

_____

_____

How I will test it? _____

_____

_____

_____

Things I'll need: _____

_____

_____

Problems I might face: _____

_____

_____

My name: _____

My animal: birds

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Birders and ornithologists (bird scientists) have observed that some birds delay migration until after hurricanes have passed. They believe that the birds can detect the changes in the air pressure. The scientists have also found seabirds that the winds carried and left hundreds of miles from the area they normally live.

My hypothesis: _____

_____

_____

_____

How I will test it? _____

_____

_____

_____

Things I'll need: _____

_____

_____

Problems I might face: _____

_____

_____

My name: _____

My animal: lobster

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Scientists studying lobster movements and migrations observe that lobsters tend to move to deeper water areas before and during a storm. They believe that the deeper water is not only calmer and colder but that the saltwater is less affected by the rain.

My hypothesis: _____

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How I will test it? _____

_____

_____

_____

Things I'll need: _____

_____

_____

Problems I might face: _____

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_____

My name: _____

My animal: manatee

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Scientists used to think that manatees swam up river basins to wait out hurricanes. But manatee monitoring during Hurricanes Katrina (as it crossed Florida) and Wilma showed that they stayed offshore where food was plentiful and they could hunker down. Manatees can stay underwater for up to 15 to 20 minutes before coming up for air.

My hypothesis: _____

_____

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_____

How I will test it? _____

_____

_____

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Things I'll need: _____

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_____

Problems I might face: _____

_____

_____

My name: _____

My animal: shark

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: Scientists from Mote Marine Laboratory's Center for Shark Research have documented tagged sharks heading to deeper water before Tropical Storm Gabrielle and Hurricanes Gordon and Charley arrived. They believe the sharks sense the falling pressure of an approaching storm through their inner ears.

My hypothesis: _____

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How I will test it? _____

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Things I'll need: _____

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Problems I might face: _____

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My name: _____

My animal: dolphin

My question: What do wild animals do before or during a hurricane? Can I prove or disprove the theory of animal behavior before a hurricane?

The background research/observations: During the hurricane season of 2004, Harbor Branch Oceanographic Institute researchers observed that dolphins living in the Indian River stayed in deep water pockets in their home territory. The researchers also observed lagoon-living dolphins in the Florida Keys seeking deeper, calmer water, staying under water for as long as possible to avoid the wind and waves.

My hypothesis: _____

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How I will test it? _____

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Things I'll need: _____

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Problems I might face: _____

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Wind Charts

There are two different scales that relate to wind and wind speed.

The Beaufort Wind Force Scale was created by British Rear-Admiral Sir Francis Beaufort in 1805. Before that time, one sailor might describe wind speeds as “breezy” while another sailor might describe the same winds as “a strong breeze.” Since they didn’t have anenometers (a tool used to measure wind speeds), the original scale allowed sailors to measure speeds equally according to the effects of the wind on the sea and land. The original scale stopped as soon as there were hurricane force winds.

The Saffir-Simpson Scale was created by Herbert Saffir (an engineer) and Bob Simpson (the director of the US National Hurricane Center) and put into use in the early 1970s. This scale breaks hurricanes into five separate categories and describes the potential damage that may occur.

If you can feel wind felt on exposed skin and leaves rustle, the wind speed is probably between ? kilometers and miles per hour.

What is the wind speed for a gale?

Are the winds in a gale higher than or less than the winds in a hurricane?

Are winds in a storm higher than or less than the winds in a gale?

If the wind speed is a “strong breeze,” what is the wind speed in kilometers per hour and miles per hour?

What is the minimum wind speed per hour (kilometers and miles) for a hurricane?

Scale	#	Description	Sustained Wind speed	
			km/h	mph
Beaufort Scale	0	Calm	< 1	< 1
Beaufort Scale	1	Light air	1 – 5	1 – 3
Beaufort Scale	2	Light breeze	6 – 11	3 – 7
Beaufort Scale	3	Gentle breeze	12 – 19	8 – 12
Beaufort Scale	4	Moderate breeze	20 – 28	13 – 17
Beaufort Scale	5	Fresh breeze	29 – 38	18 – 24
Beaufort Scale	6	Strong breeze	39 – 49	25 – 30
Beaufort Scale	7	High wind, Moderate gale, Near gale	50 – 61	31 – 38
Beaufort Scale	8	Gale, Fresh gale	62 – 74	39 – 46
Beaufort Scale	9	Strong gale	75 – 88	47 – 54
Beaufort Scale	10	Storm, Whole gale	89 – 102	55 – 63
Beaufort Scale	11	Violent storm	103 – 117	64 – 72
Beaufort Scale	12	Hurricane	≥ 118	≥ 73
Saffir-Simpson Scale	1	Category 1 Hurricane	119-153	74 - 95
Saffir-Simpson Scale	2	Category 2 Hurricane	154-177	96 - 110
Saffir-Simpson Scale	3	Category 3 Hurricane	178 - 209	111 - 130
Saffir-Simpson Scale	4	Category 4 Hurricane	210 - 249	131 - 155
Saffir-Simpson Scale	5	Category 5 Hurricane	> 249	> 155

Scale	#	Sea conditions	Land conditions
Beaufort Scale	0	Flat	Calm, smoke rises vertically
Beaufort Scale	1	Ripples without crests	Wind motion visible in smoke
Beaufort Scale	2	Small wavelets, crests of glassy appearance, not breaking	Wind felt on exposed skin, leaves rustle
Beaufort Scale	3	Large wavelets, crests begin to break; scattered whitecaps	Leaves and smaller twigs in constant motion
Beaufort Scale	4	Small waves with breaking crests, fairly frequent whitecaps	Dust and loose paper raised, small branches begin to move
Beaufort Scale	5	Moderate waves of some length, many whitecaps, small amounts of spray	Branches of a moderate size move, small trees begin to sway
Beaufort Scale	6	Long waves begin to form, white foam crests are very frequent, some airborne spray	Large branches in motion, whistling heard in overhead wires, umbrella use becomes difficult, empty plastic garbage cans tip over
Beaufort Scale	7	Sea heaps up, foam from breaking waves blown into streaks along wind direction, moderate amounts of airborne spray	Whole trees in motion, effort needed to walk against the wind
Beaufort Scale	8	Moderately high waves with breaking crests forming spindrift, well-marked streaks of foam are blown along wind direction, considerable airborne spray	Some twigs broken from tree, cars veer on road
Beaufort Scale	9	High waves whose crests sometimes roll over, dense foam is blown along wind direction, large amounts of airborne spray may begin to reduce visibility	Some branches break off trees, and some small trees blow over, construction/ temporary signs and barricades blow over
Beaufort Scale	10	Very high waves with overhanging crests, large patches of foam from wave crests give the sea a white appearance, considerable tumbling of waves with heavy impact, large amounts of airborne spray reduce visibility	Trees are broken off or uprooted, saplings bent and deformed, poorly attached asphalt shingles peel off roofs
Beaufort Scale	11	Exceptionally high waves, very large patches of foam, driven before the wind, cover much of the sea surface, very large amounts of airborne spray severely reduce visibility	Widespread vegetation damage, many roofing surfaces are damaged; asphalt tiles that have curled up and/or fractured due to age may break away completely
Beaufort Scale	12	Huge waves, sea is completely white with foam and spray, air is filled with driving spray, greatly reducing visibility	
Saffir-Simpson Scale	1		Some structural damage
Saffir-Simpson Scale	2		Widespread structural damage
Saffir-Simpson Scale	3		Extensive structural damage
Saffir-Simpson Scale	4		Devastating structural damage
Saffir-Simpson Scale	5		Catastrophic structural damage

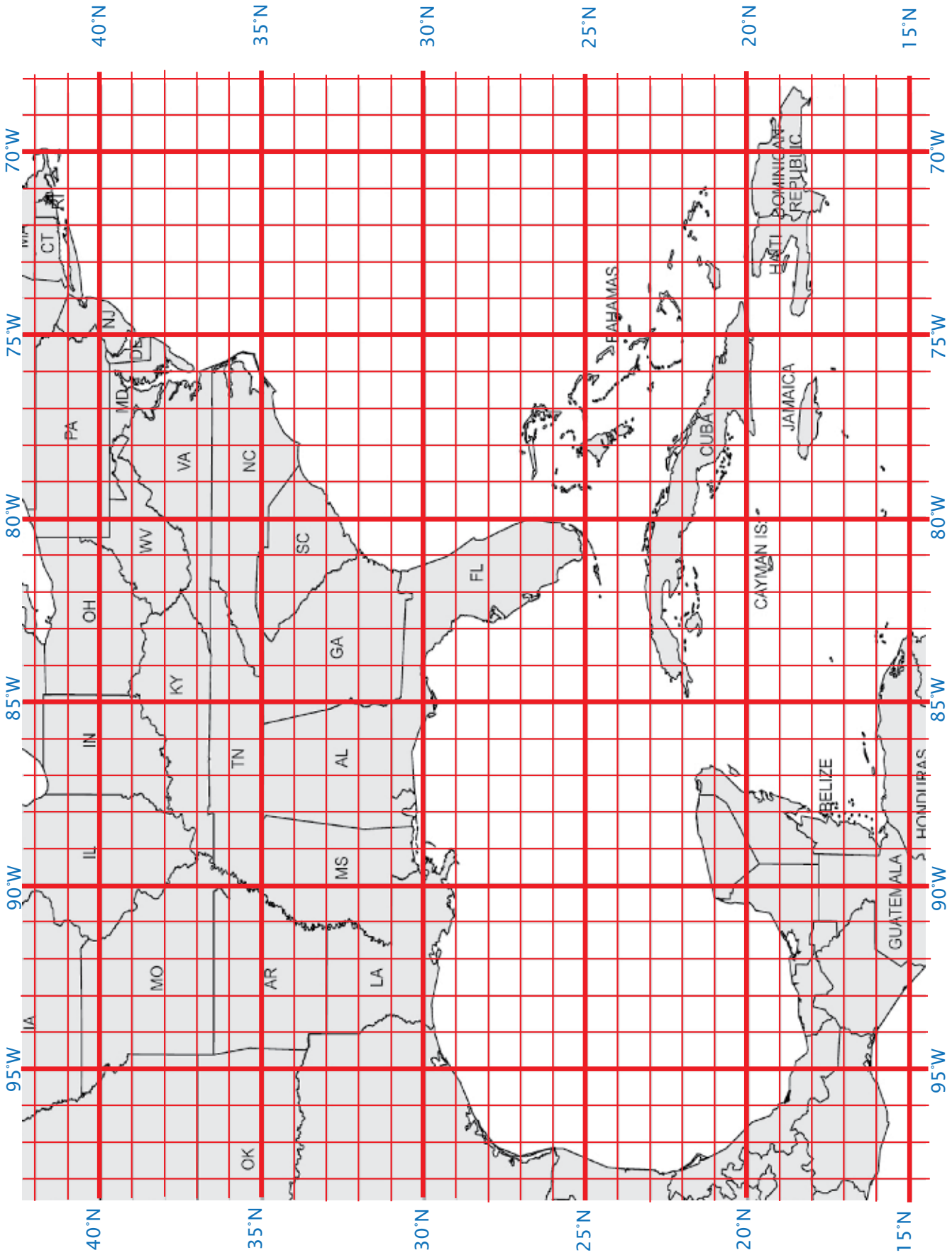
Match the Season to the Calendar

Color in the month block to show the various storm seasons throughout the year:

- Hurricane Season runs from June 1 to November 30 with the peak in September.
- Hurricane Season runs late May/early June to late October/early November with the peak in late August/early September.
- Severe cyclonic storm Two seasons a year: April to June with a peak in May, and again from late September to early December with a peak in November.
- Severe tropical cyclone Season runs from June 1 to November 30 with the peak in September.
- Tropical cyclone Season runs from late October/early November to May with two peaks: one in mid-January and the second in mid-February.
- Severe tropical cyclone Season runs from late October/early November to early May with a peak in late February/early March.
- Typhoons can happen at any time of year, but most happen between July and November with a peak in late August/early September.

	January	February	March	April	May	June	July	August	September	October	November	December
Atlantic Hurricane Season												
Pacific Hurricane Season												
Severe Cyclonic Storm Seasons												
Severe Tropical Cyclone Season												
Tropical Cyclone Season												
Severe Tropical Cyclone Season												
Typhoon Season												

Atlantic Hurricane Tracking Chart



If it is Hurricane Season and there's an active hurricane, please feel free to use this tracking chart to track the hurricane's path.

If it is not Hurricane Season or if there's not an activie hurricane, use the following data from Hurricane Ike (September, 2008) to plot its path on the Atlantic Hurricane Tracking Chart, previous page.

The wind speed is given in knots per hour.

One knot equals 1.15 mile per hour.

Tracking Hurricane Ike, September 2008

N	W	Month	Date	Wind Speed	PR	Storm Level
21.5	69	September	6	115 kph	950	Hurricane Category 4
21	74	September	7	105 kph	946	Hurricane Category 3
21.2	79.1	September	8	75 kph	964	Hurricane Category 1
22.7	83.3	September	9	65 kph	966	Hurricane Category 1
24.2	85.8	September	10	85 kph	958	Hurricane Category 2
25.8	88.9	September	11	85 kph	952	Hurricane Category 2
27.5	93.2	September	12	95 kph	954	Hurricane Category 2
31.7	95.3	September	13	50 kph	974	Tropical Storm

What to Pack in a Disaster Bag

Preparing for the storm (and after):

- masking electrical tape (for windows if no plywood)
- hammer and nails
- plywood or storm shutters
- containers to fill with water
- fill plastic containers, sealable plastic bags, etc. with water and freeze (helps keep meats frozen if you lose electricity and serves as cold water to drink as it thaws)

Supplies while waiting and during the storm

- battery-operated radio to listen to news
- toys, board games, books, cards
- sleeping bags and blankets

Supplies for after the storm (there will probably not be any electricity)

- candles and matches
- first aid supplies
- fresh batteries
- flashlights
- bleach (without additives)
- fuel and fuel can
- paper towels
- close-toed shoes
- work gloves
- change of clothes for a few days
- garbage bags
- emergency cooking supplies
- portable cooler (grill, camp stove)

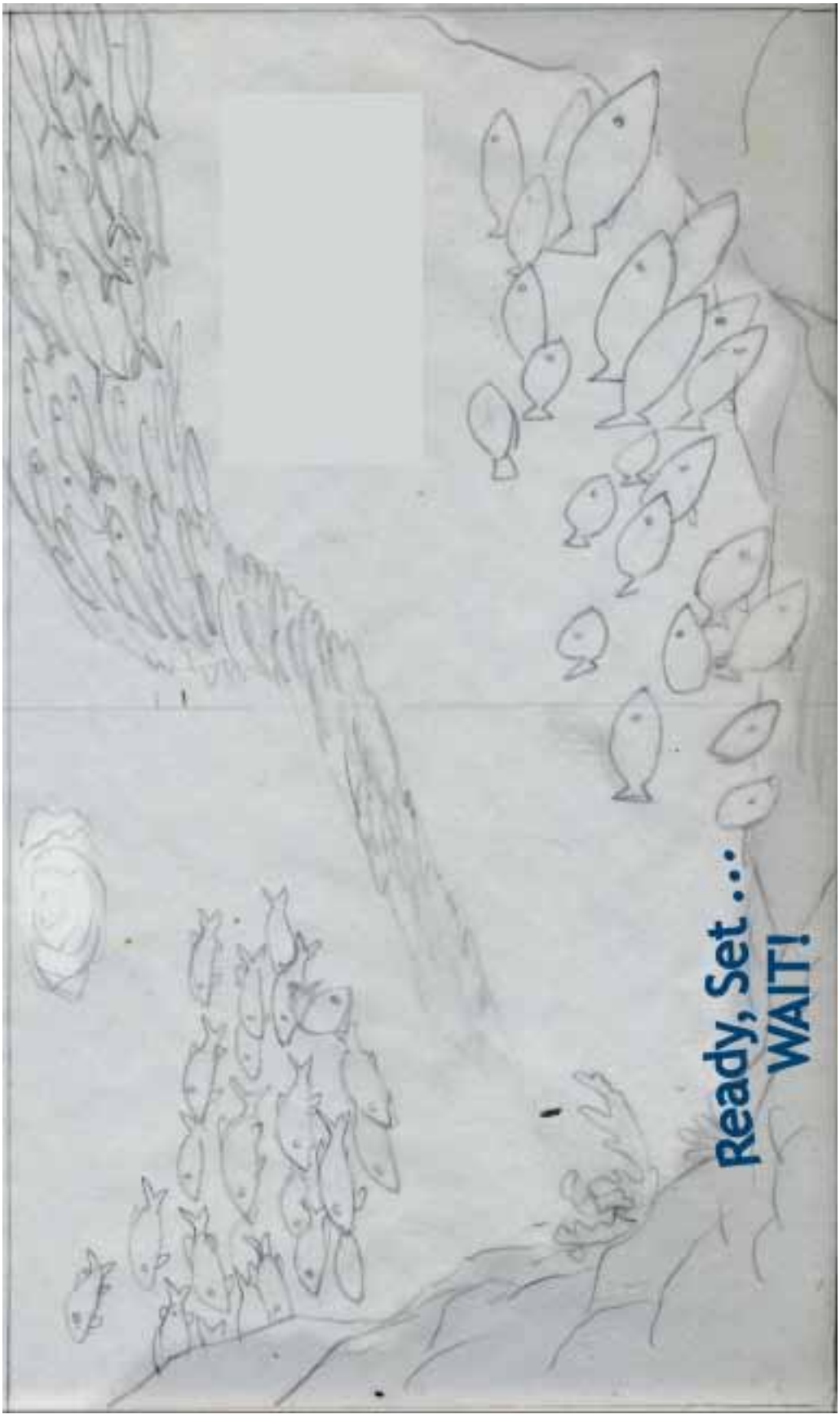
Supplies depending on the family:

- baby supplies (food, diapers)
- prescription medicines
- pet food

Food and drink (while waiting and after):

- bottled water or filled water containers(7 to 10 gallons per person)
- juices
- canned foods (with manual can opener)
- dried fruit and nuts
- peanut butter and jelly
- crackers/bread
- protein bars

Coloring Pages



Ready, Set . . .
WAIT!

Glossary

Word	Definition	part of speech	Spanish
adapt	to change, to alter, to adjust to a changing environment or situation	verb	adaptar
adaptation	a physical or behavioral feature of a plant or animal that allows it to survive in its environment	noun	adaptación
air	the invisible gaseous substance surrounding the earth, a mixture mainly of oxygen and nitrogen	noun	aire
air pressure	the weight of the air: the more air, the higher the pressure, the less air, the lower the pressure	noun	presión
anemometer	a weather instrument that measures wind speed.	noun	anemómetro
animal	any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli	noun	animales
antennae	the long, thin, jointed projections from an insect's head that inform it about the feel, sound, taste, smell, temperature, and humidity in the world outside of its skeleton (plural is antenna)	noun: body part	antena
anticyclone	a clockwise rotating area of air with good weather; it is the opposite (anti) of a cyclone, also called ridge or high pressure.	noun	anticiclón
approach	to come near to, to move toward	verb	acercarse
aquatic	an organism that lives or grows in water	adjective	acuático
Atlantic Ocean	a large body of salt water that separates the Americas from Europe and Africa	noun	Atlántico
atmosphere	the air surrounding Earth	noun	atmósfera
atmospheric pressure	the pressure exerted by the atmosphere at a given point; measured in millibars (avg = 1013.25 mb) or inches of mercury (avg = 29.92 Hg)	noun	presión atmosperhic
barometer	a device for measuring air pressure	noun	barómetro
barometric pressure	another word for atmospheric pressure because it is measured with an instrument called a barometer.	noun	presión atmosperhic
battery(ies)	a small device to make electricity	noun	pila
Beaufort wind scale	a system for estimating and reporting wind speeds based on the visible effects of wind upon land objects (such as vegetation) and/or sea surface conditions such as white caps and foam. The scale was devised by Sir Francis Beaufort (1777-1857), hydrographer to the British Royal Navy.	noun	Escala de Beaufort
behavior	an organism's actions and responses to its environment and other organisms in that same environment	noun	conducta
below	under something	adverb	debajo
biologist	a scientist who studies living organisms	noun	biólogo/a
bird	a warm-blooded vertebrate that breathes oxygen with lungs, has a beak, feathers, two wings, two legs, and lays eggs; birds are the ONLY animals that have feathers; not all birds fly	noun: classification	ave, pájaro
bolt	to move or jump quickly	verb	echar el cerrojo
breathe	to take in/absorb oxygen	verb	respirar
brew	to prepare by sitting in hot water	verb	fabricar
buffer	natural "sponges" that hold water to prevent flooding, remove poisonous chemistry from the air and water, egg marshes, mangroves, wetlands	noun	
building	a permanent structure with a roof and walls	noun	edificio
burrow	an animals' hole or excavation in the ground used shelter or habitation	noun	madriguera
butterfly(ies)	a type of insect--hundreds of different types	noun: animal	mariposa
calm	1) no wind or rain, 2) no emotional outbursts	adjective	calmo
catastrophic	extremely harmful	adjective	catastrófico

Word	Definition	part of speech	Spanish
category 1 [Minimal]	Damage primarily restricted to shrubbery, trees, and unanchored mobile homes; no substantial damage to other structures; some damage to poorly constructed signs Low lying roads inundated; minor damage to piers; small craft in exposed anchorages torn from moorings	adjective	categoría 1
category 2 [Moderate]	Considerable damage to shrubbery and tree foliage, some trees blown down; major damage to exposed mobile homes; extensive damage to poorly constructed signs and some damage to windows, doors and roofing materials of buildings, but no major destruction to buildings Coastal roads and low lying escape routes inland cut off by rising water about 2 to 4 hours before landfall; considerable damage to piers and marinas flooded; small craft in protected anchorage torn from moorings Evacuation of some shoreline residences and low lying areas required	adjective	categoría 2
category 3 [Extensive]	Foliage torn from trees; large trees blown down; poorly constructed signs blown down; some damage to roofing, windows, and doors; some structural damage to small buildings; mobile homes destroyed. Serious flooding along the coast; many small structures near the coast destroyed; larger coastal structures damaged by battering waves and floating debris Low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; flat terrain 5 feet or less above sea level flooded up to 8 or more miles inland Evacuation of low lying residences within several blocks of shoreline may be required	adjective	categoría 3
category 4 [Extreme]	Shrubs, trees, and all signs blown down; extensive damage to roofs, windows, and doors, with complete failure of roofs on many smaller residences; mobile homes demolished Flat terrain 10 feet or less above sea level flooded inland as far as 6 miles; flooding and battering by waves and floating debris cause major damage to lower floors of structures near the shore; low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; major erosion of beaches Massive evacuation of all residences within 500 yards of the shore may be required, as well as of single story residences in low ground with 2 miles of the shore	adjective	categoría 4
category 5 [catastrophic]	Trees, shrub, and all signs blown down; considerable damage to roofs of buildings, with very severe and extensive damage to winds and doors; complete failure on many roofs of residences and industrial buildings; extensive shattering of glass in windows and doors; complete buildings destroyed; small building overturned or blown away; mobile homes demolished Major damage to lower floors of all structures less than 15 feet above sea level within 1500 feet of the shore Low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; major erosion of beaches Massive evacuation of residential areas on low ground within 5 to 10 miles of the shore may be required	adjective	categoría 5
cavity	a hole in a tree that can be used by animals for shelter	noun	cavidad, hueco

Word	Definition	part of speech	Spanish
characteristic	a distinguishing trait, feature, quality, or property that compares or contrasts one object to another	adjective	característica
characteristic	a distinguishing trait, feature, quality, or property	noun	característica
classify	to arrange or organize according to class or category	verb	clasificar, ordenar
clockwise	rotating in the same direction as the hands of a clock	adverb	dextrorso
cloud	collection of tiny water droplets or ice crystals in the atmosphere	noun	nube
coastline	outline of the coast (where the land meets the sea)	noun	línea costera
column	tall, vertical, upright	noun	columna
construct	to assemble, to put together	verb	edificar, construir
coriolis effect	result of an apparent force that as a result of the earth's rotation deflects moving objects (as projectiles or air currents) to the right in the northern hemisphere and to the left in the southern hemisphere	noun	efecto de coriolis
counterclockwise	rotate in the opposite direction from the way a clock moves	adverb	sinistrórsum
crawl	to move slowly with the body near the ground	verb	arrastrarse, serpear, ir a gatas
crocodile	reptiles found in tropical, swampy waters	noun: animal	Cocodrilo
curl	to twist into a circular form	verb	escarolar
cyclone	a rotating area of air with high winds with unsettled weather: also called hurricane	noun	ciclón
damage	to make something worse	verb	dañar, hacer daño
damage	something made worse	noun	daño
debris	remains of plants and animals	noun	
deep	to a great depth	adjective	profundo
destroy	to put an end to, to kill	verb	destruir
detect	to discover or to feel something	verb	detectar
disturbance	an area in the atmosphere exhibiting signs of potential cyclone development.	noun	alteracione
dolphin	a small, toothed whale (cetacean)	noun: animal	delfín, delfínido, cetáceo
doppler radar	radar that measures speed and direction of a moving object, such as wind, rain	noun	radar doppler
ear	a body part used to hear	noun: body part	oreja
equator	an imaginary circle around the Earth, halfway between the North and South Poles.	noun	ecuador
erode	to wear away at something, as water erodes a rock	verb	erosionar
estuarine	pertaining to an estuary, an area open or adjacent to the sea, typically at the mouth of a river, subject to tidal movement	adjective	estuarios
estuary	a semi-enclosed body of water that has a free connection with the open sea and within which seawater (from the ocean) is diluted measurably with freshwater that is derived from land drainage (egg, the Chesapeake Bay)	noun	estuario
evacuate	to move from an unsafe location to a safe location	verb	evacuar
exhibit	to show	verb	exhibicíon, exposicíon
extensive	large range or effect	adjective	extensivo
extreme	far beyond normal	adjective	extremo
eye	(1) the organs with which we see, (2) The center of a tropical storm or hurricane, with a roughly circular area of light winds and rain-free skies.	noun	ojo
eyewall	an organized band of storms surrounding the eye of a tropical cyclone: the strongest part of the storm, contains cumulonimbus clouds, intense rainfall and very strong winds	noun	pared del ojo
fall	to move down suddenly, to lower, to drop	verb	bajar, descender

Word	Definition	part of speech	Spanish
fish	a type of animal (classification) that live in water, cold-blooded, most have scales, breathe air through gills	noun: animal	pez (vive) pescado (comida)
fishermen	people who hunt or catch fish	noun	pescadores
flash flood	flooding with a rapid water rise	noun	aluvión, riada
flashlight	a small, battery-powered light	noun	linterna eléctrica
flock (birds)	a group of birds	noun: collective	bandada
flood	rising water over dry land	noun	inundación
flutter	to move back and forth	verb	aletear
forecast	a prediction of future, as in a weather forecast made by meteorologists.	noun	pronóstico
gale	winds with speeds from 28 to 55 knots (32 to 63 miles per hour)	noun	ventarrón
gather	to collect in one place	verb	recoger
glide	to move smoothly without any apparent effort	verb	deslizarse, planear
ground	the solid part of the Earth's surface	noun	tierra
Gulf Stream	the warm, fast-moving current that flows from south to north off the southeast Atlantic coast of the United States	noun	Corriente del Golfo
gust	a sudden significant increase in wind speed	noun	ráfaga
hemisphere	half of the Earth, broken into North/South or East/ West	noun	hemisferio
heron	a type of bird often seen in wetlands	noun: animal	garza
hole	an opening in or through something	noun	hueco
hollow	openings (in trees, rocks\)	noun	huecos
howl	a long, loud noise	noun	aullido
hurricane	a tropical cyclone with sustained winds of 74 miles per hour (65 knots) or greater in the North Atlantic Ocean, Caribbean Sea, Gulf of Mexico, and in the eastern North Pacific Ocean.	noun	huracán
hurricane season	the time of the year having a high incidence of hurricanes	noun	temporada de huracanes
hurricane warning	a hurricane is expected in the warning area within 36 hours or less (this was changed in 2010 from 24 hours to 36 hours).	noun	advertencia de huracán
hurricane watch	a hurricane is possible in a given area within 48 hours (increased from 36 hours in 2010).	noun	alerta de huracán
hypothesis	a prediction in combination with a reason why events will occur	noun	hipótesis
inner	inside	adjective	interior
instinct	behavior patterns with which an animal is born	noun	instinto
landfall	when a hurricane first goes over land.	noun	recalada
latitude	the location north or south in reference to the equator, which is designated at 0 degrees	noun	latitud
lightning	a visible discharge of electricity produced by a thunderstorm	noun	relámpago
lobster	a marine crustacean	noun: animal	langosta
low (weather)	an area of low-atmospheric pressure	noun	de baja presión
manatee	an endangered plant-eating marine mammal found in some tropical waters	noun: animal	manatí
mangrove	tropical evergreen trees found in swamps	noun: plant	manglares
marine mammal	a mammal that lives in the ocean and depends on the ocean for food	noun: classification	mamíferos marinos
marsh	low-lying soft, wet land, at times covered by water, grasses, sedges, cattails or rushes	noun: habitat	marisma
mercury	the only metal liquid at normal temperatures	noun	mercurio
meteorologist	a scientists who studies the weather and atmospheric conditions	noun	meteorólogo
method of proof	a process used to prove or disprove a mathematical statement or scientific hypothesis	noun	método de la prueba

Word	Definition	part of speech	Spanish
migration	animal movement to a different location during seasonal changes to better find food, and/or to breed or nurse young: may be repeated within a species from year-to-year and even from generation-to-generation; some animals migrate long distances, other animals migrate up and down a mountain	noun	migración
millibar (mb)	the standard unit of measurement for atmospheric pressure used by the National Weather Service. One millibar is equivalent to 100 newtons per square meter or .029 inches of Mercury. Standard surface pressure is 1013.2 millibars.	noun	milibar
minimal	the least possible	adjective	mínimo
moderate	medium	adjective	mediano
monitor	to watch carefully	verb	monitor
movement	the act of going from one place to another	noun	movimiento
Northern Hemisphere	the half of the Earth that is north of the equator.	noun	Hemisferio Norte
observe	to use your senses and tools to find out about objects, events, or living things	verb	observar
ocean	the vast body of salt water that covers almost three fourths of the earth's surface	noun	océano
offshore	away from land	adjective	
ornithologist	a scientist who studies birds	noun	ornitólogo
overcast	clouds covering the sky	adjective	nublado
pelican	a large seabird	noun: animal	pelícano
poison	something that harms or destroys	noun	tóxico
pollution	harmful or unwanted waste material that is added to the air, water, or soil	noun	la contaminación
powerful	having great force	adjective	intenso
predict	to make an educated guess, based on evidence or a pattern	verb	predecir
prepare	to get ready	verb	preparar
push	to press upon or against (a thing) with force in order to move it away	verb	empujar
question	to ask	verb	preguntar
rabbit	any of various burrowing animals of the family Leporidae having long ears and short tails; some domesticated and raised for pets or food	noun: animal	conejo
RADAR	a device that detects objects at a distance (like hurricanes) using radio waves.	noun	radar
radio	a device to receive electromagnetic waves	noun	radio
rain	liquid precipitation	noun	lluvia
reef	structure produced by the piled-up skeletons of corals	noun	arrecifes
refrigerated	kept cold in a refrigerator	adjective	refrigerado
research	to attempt to find out in a scientific manner	verb	investigar
researcher	a person who researches	noun	investigador
roof	the top of a building	noun	tejado
root	the underground part of a seed plant body; functions as an organ of absorption, aeration, and food storage or as a means of anchorage and support	noun	raíz
rotate	to turn about an axis or a center	verb	rotación
Saffir-Simpson Scale	the scale that classifies hurricanes based on their intensity, and is used to predict how damaging the hurricane will be to property.	noun	Escala Saffir-Simpson
salinity	a measure of the salt concentration of water higher salinity means more dissolved salts; usually measured in parts per thousand	noun	salinidad
satellite tag	tags that can be followed by satellites: used to track animal movements and locations	noun	etiqueta vía satélite

Word	Definition	part of speech	Spanish
scale	(1) The ratio of the size of an object in a representation (drawing) of the object to the actual size of the object; the ratio of the distance on a map to the actual distance (e.g., the scale on a map is 1 inch:10 miles); (2) an instrument used to measure an object's mass.	noun	escama
scamper	to move quickly	verb	corretear
scientific method	organized procedures that allow one to draw logical conclusions based on observations	noun	método científico
scientist	a person who uses observation, experimentation, and theory to learn about an area of science (biologists, physicists, chemists, geologists and astronomers): may be male or female	noun	científico
sea	a division of an ocean or a large body of salt water partially enclosed by land	noun	mar
sea level	the level of the ocean's surface, usually measured from the middle of the high and low tide line	noun	nivel del mar
seagrass	a type of grass (plant) that grows in the ocean: seaweed	noun: plant	alga
seagull	a type of sea bird	noun: animal	gaviota
sense	to touch, to feel, to see, to hear, to sight	verb	sentir
severe tropical cyclone	another name for hurricane in the South Pacific	noun	ciclón tropical severo
shallow	a stretch of water that is not deep	noun	poco profundo
shark	a large, carnivorous fish	noun: animal	tiburon
shelter	a structure that provides privacy and protection from danger	noun	refugio
shutter	window coverings usually made out of wood or metal	noun	postigo
sirenia	an order of marine mammals: includes dugongs and manatees	noun: classification	sirenia
sound	vibrations transmitted through an elastic solid or a liquid or gas, capable of being detected by human organs of hearing	noun	sonido
Southern Hemisphere	the half of the Earth that is south of the equator.	noun	hemisferio sur
squirrel	small to medium sized rodents (mammals) with large, bushy tails	noun: animal	ardilla
stay	to remain in place	verb	quedar
storm	a violent disturbance of the atmosphere with strong winds and usually rain, thunder, lightning, or snow	noun	temporal
storm surge	storm-related increase in sea water height over a normal tide	noun	marejada
storm tide	the level of sea water resulting from the astronomic tide combined with storm surge.	noun	marea de tormenta
stormwater	an abnormal amount of surface water due to a heavy rain or snowstorm	noun	de aguas pluviales
strength	1) the amount of energy transmitted, 2) property of being physically or mentally strong	noun	fuerza
subtropical	the region between the tropical and temperate regions, an area between 35˚ and 40˚ North and South latitudes	adjective	subtropical
surge	to rise high or move as if in waves	verb	
survive	to remain alive or in existence	verb	sobrevivir
swell	ocean waves that have traveled out of the area where they were generated	noun	
tag	to mark, to touch	verb	poner etiqueta a
thunder	the sound produced by a lightning discharge	noun	trueno
tornado	a rapidly spinning column of air that may come down during a thunderstorm and touch the ground	noun	tornado
tree	a type of plant with a permanent woody stem	noun: plant	árbol
tropic	warm, equatorial region between the Tropic of Cancer and the Tropic of Capricorn.	noun	zona tropical
Tropic of Cancer	an imaginary line of latitude at 23˚30' N.	noun	Trópico de Cáncer
Tropic of Capricorn	an imaginary line of latitude at 23˚30' S.	noun	Trópico de Capricornio

Word	Definition	part of speech	Spanish
tropical	area between 23.5 degrees north and south of the equator	adjective	de trópico, tropical
tropical cyclone	a generic term given to all tropical depressions, tropical storms and hurricanes	noun	ciclón tropical
tropical depression	a closed-low pressure area with organized convection, heavy rain, and winds up to 38 mph; the first stage of hurricane development	noun	depresión tropical
tropical disturbance	a distinct tropical weather system of apparently organized convection originating in the tropics or subtropics and maintaining its identity for 24 hours or more	noun	perturbación tropical
tropical storm	a tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 knots (39 mph or 63 kph) to 63 knots (73 mph or 118 kph).	noun	tormenta tropical
tropical storm warning	a warning for tropical storm conditions, including sustained winds within the range of 34 to 63 knots (39 to 73 mph or 63 to 118 kph), that are expected in a specified coastal area within 36 hours or less (up from 24 hours effective in 2010).	noun	advertencia de tormenta tropical
tropical storm watch	an announcement that a tropical storm poses or tropical storm conditions pose a threat to coastal areas generally within 48 hours. (up from 36 hours effective in 2010)	noun	alerta de tormenta tropical
tropical wave	an area of converging air (and relatively low air pressure) that is embedded within the deep easterlies. May lead to tropical cyclone development.	noun	onda tropical
twist	to suddenly turn in the opposite direction	verb	torcer
twitch	to move or pull suddenly	verb	
typhoon	a tropical cyclone with winds more than 75 mph and located in the north Pacific, west of the international date line	noun	tifón
underground	under the earth	adjective	subterráneo
vortex	a spinning flow of air.	noun	vórtice
warm	having a comfortable amount of heat	adjective	caliente
waterspout	a tornado that passes over water with a funnel-shaped formation of wind, water and ocean spray.	noun	tromba marina
wave	a disturbance, oscillation, or vibration, either of a medium and moving through that medium (such as water and sound waves), or of some quantity with different values at different points in space, moving through space	noun	ola (water) (onda=radio)
weather	the conditions of the atmosphere at a certain place and time including precipitation, temperature, wind, and barometric pressure	noun	tiempo
weather map	a map that shows the weather using symbols to represent fronts, highs, lows, precipitation, temperature, etc	noun	Mapa del tiempo
weather satellite	an orbiting machine that takes pictures of the Earth's surface that are used for noting weather.	noun	satélite meteorológico
wetland	an area where the soil is either underwater or water soaked; may be permanent or temporary	noun: habitat	humedales
wild	in a natural state, not tame	adjective	salvaje
wind	a natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface	noun	viento
wind speed	The rate of the motion of the air per unit of time. It can be measured with several types of instruments such as an anemometer, and may be reported using different units including knots (nautical miles per hour), miles per hour, or meters per second.	noun	la velocidad del viento
window	a clear, glass in a house or vehicle	noun	ventana

Answers

Silly Sentences:

Air pressure is the weight of the column of air that extends from the ground (or sea level) to the top of the atmosphere.

The lower the air pressure, the stronger the hurricane is.

Storm surge is when the strong wind pushes ocean water onto land—much higher than the average high tide line.

These powerful storms develop over warm, tropical waters.

The wind, storm surge, and heavy amounts of rain and lightening can cause a tremendous amount of damage.

Because the storms need warm water, they begin to lose strength when they hit land.

The strong winds rotate counterclockwise in the northern hemisphere and clockwise in the southern hemisphere.

Hurricanes are also called typhoons or tropical cyclones depending on where they are in the world.

Hurricanes and tropical storms cause all kinds of damage. The stronger the winds and the bigger the storm, the more damage they cause.

On land, winds can blow down trees, rip out windows, or tear roofs off buildings.

The storm surge can carry cars, boats, or even buildings inland. Areas that have shallow coastlines are more affected by storm surge than coasts with high bluffs or cliffs.

While the storm surge can cause flooding, so can the heavy rains.

Word Search

HURRICANE 2,C

TROPICAL 2,A

CYCLONE 7,C

DAMAGE 2,G

CATEGORY 1,B

PREPARE 10,A

SHARK 5,E

FISH 6,B

DOLPHIN 9,D

RABBIT 8,B

WIND 2,D

STRONG 5,J

LAND 9,A

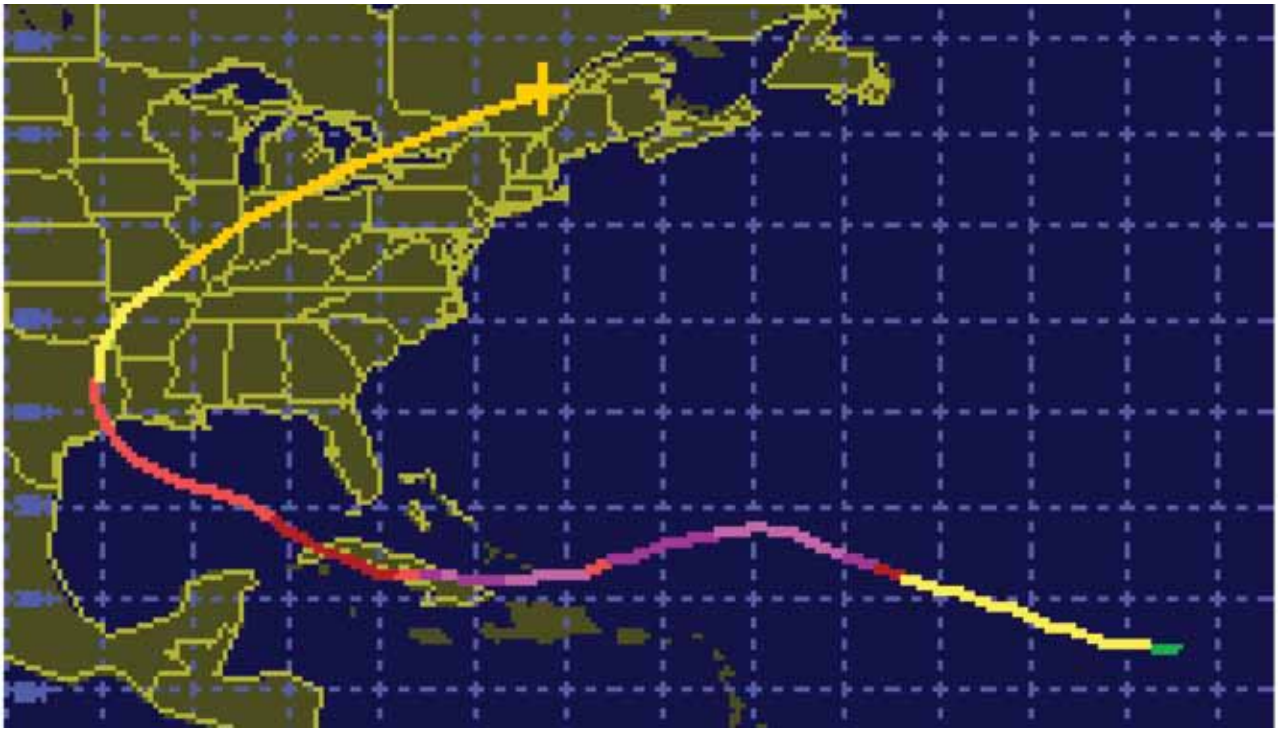
A Hurricane is Coming! How We Know True/False

1. Satellite images give us some information. True
2. People called “Hurricane Hunters” fly airplanes into the storms to gather information. True
3. Meteorologists learn how to use their ears to sense hurricanes as they develop. False That’s just silly!
4. Ocean data buoys give us information about wind, water, and weather. True
5. The US Navy has ships at sea whose sole purpose is to watch for hurricanes. False—while it is true that US Navy ships are often out at sea, they are gathering weather and will avoid hurricanes. They get their weather information from the same meteorological sources.

Wind Speed Chart Questions

If you can feel wind felt on exposed skin and leaves rustle, the wind speed is probably between ? kilometers/miles per hour. Beaufort Scale #2: 1-5 km/h or 1-3 mph
What is the wind speed for a gale? Beaufort Scale #8: 62-74 km/h or 39-46 mpg
Are the winds in a gale higher than or less than the winds in a hurricane? Less than
Are winds in a storm higher than or less than the winds in a gale? Higher than
If the wind speed is a "strong breeze," what is the wind speed in kilometers per hour and miles per hour? Beaufort Scale # 6: 39-49 km/h o 25-30 mph
What is the minimum wind speed per hour (kilometers and miles) for a hurricane? Beaufort Scale 12: greater than 118 km/h or 73 mph; Saffir-Simpson Scale: greater than 119 km/h or 74 mph.

Hurricane Ike's path



Appendix A—"What Children Know" Cards

Question: My answer: This information is correct! This information is not correct, can you find the correct information?	Question: My answer: This information is correct! This information is not correct, can you find the correct information?
Question: My answer: This information is correct! This information is not correct, can you find the correct information?	Question: My answer: This information is correct! This information is not correct, can you find the correct information?