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Cover Photo: Satellite view of Hurricane Katrina, one of the most powerful storms to hit the U.S., August 2005.  
Image by Jeff Schmaltz, Goddard Space Flight Center. Released into the public domain by NASA.

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Level E

Summer Weather



# Hurricanes

written by Alice Lee Folkins  
& Charles Fisher

**SummerReads™** 

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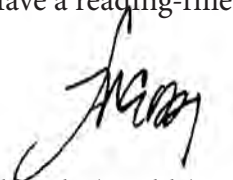
Dear Student,

I am a teacher who has studied how children learn to read well. What I have learned has been used to write SummerReads and programs like QuickReads® and Ready Readers.

The best way to be ready for the new school year is to read every day of the summer. You can choose to read a chapter or a book from SummerReads. But be sure to read it at least three times on the same day. Here's how to use SummerReads:

1. Start by reading it yourself. Mark the words that you don't know.
2. Next, ask someone to read with you. Get that person to help you with any words you don't know. You can even go to the computer to [www.textproject.org](http://www.textproject.org) and hear a recording of the books.
3. Last, you're going to read by yourself to answer the questions at the end of the book. You can go to the computer to find the answers.

Have a reading-filled summer!



Elfrieda (Freddy) Hiebert, Ph.D.

Inventor of the TExT model



Photo: Rain and heavy surf from Hurricane Isabel pound the beach at Naval Station Norfolk in Virginia, September 2003. Taken by Michael Pendergrass. Released into the public domain by the U.S. Navy.

## Introduction

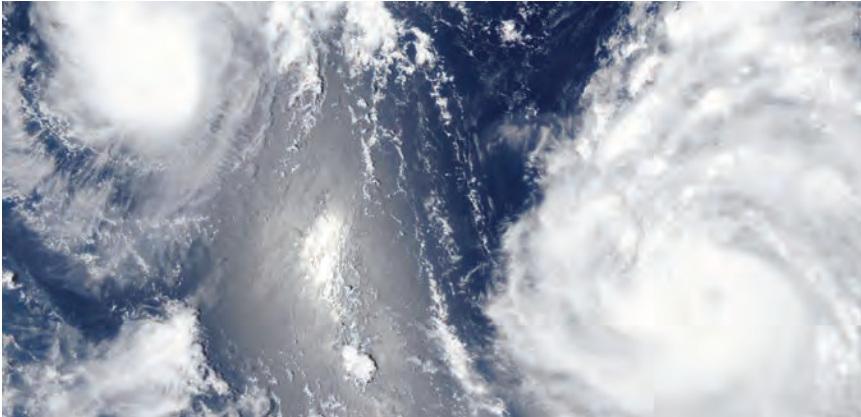
# Hurricanes

A hurricane is a very large and powerful storm. The winds of hurricanes can be strong enough to move animals, trees and even buildings. Hurricanes can bring heavy rainfalls, which can cause flooding, especially near the ocean.

From above, a hurricane looks like a very large disk made out of clouds. This mass of clouds can be several hundred miles across and a few miles thick. This mass of clouds spins around in circles. At the center of the hurricane is an area called the eye. The eye is an area with very little, or no, winds or rain. The most powerful part of the storm is in a ring just beyond the eye in an area called the eyewall.

Once a hurricane forms there is nothing people can do to stop it or to change its path. When a strong hurricane is coming, the best thing to do is to get out of its way. Now, let's take a closer look at hurricanes—from the safety of a book!

## The Beginning of a Hurricane



Wind blowing over warm ocean water produces clouds. When things are just right, a large spinning system of winds can cause stormy weather. Once the winds reach 74 miles per hour, the storm is called a hurricane.

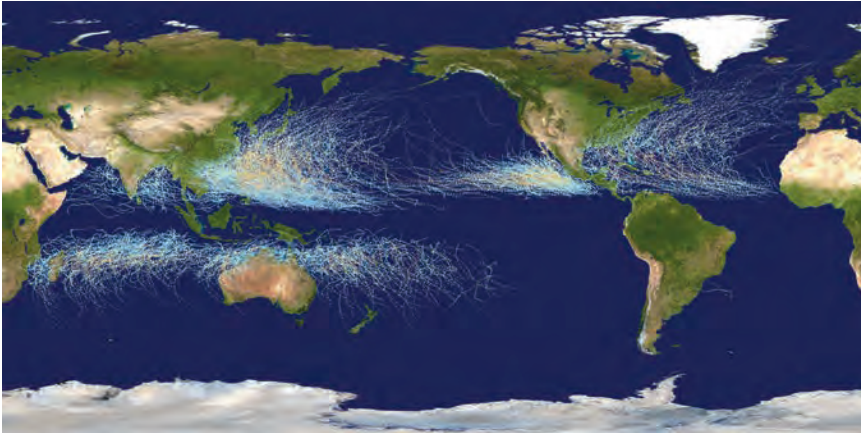
The wind in a hurricane spins the clouds in circles. At the same time, it is moving the clouds forward over more and more warm water. This forward movement means that more water is added to the clouds and the storm grows even stronger. Hurricanes can travel thousands of miles, getting more powerful as they go.

Hurricanes break up and die down only when they pass over cool water or land. If a hurricane stays over land, it begins to get weaker. Once the storm's wind speed drops below 74 miles per hour, it is no longer a hurricane.

The ocean water has to be very warm, above 80°F, for a hurricane to start. Only the ocean water of the tropics, which is the area near the Earth's equator, gets this warm. Since hurricanes begin in the area around the equator, hurricanes are most likely to come ashore in, or close to, the tropics. In the mainland of the United States, hurricanes usually come ashore in states around the Gulf of Mexico and the southern Atlantic.

Hurricane Katrina, that caused damage to New Orleans, had winds up to 175 miles an hour. But the heavy rainfall and high ocean waves also caused damage. Wind tore apart homes and buildings, while rain and ocean waves flooded streets. Parts of the city of New Orleans where people lived are now under water.

## Storm Names



People in different parts of the world call the storms that start over warm ocean water by various names. In the United States, we use the word hurricane for this kind of storm. The name likely came from the word “Huracan.” Huracan was a one-legged god of wind, storm, and fire of a group of people who lived in South America long ago.

Hurricanes happen in the United States during summer and fall when the ocean water is warm. When a storm reaches a wind speed of 39 miles per hour, it gets a name. The

storm may never become a hurricane but scientists know it’s important to keep track of a storm that has this wind speed.

The names for tropical storms are picked long before the hurricane season. The names for tropical storms follow a pattern. The name of the first tropical storm in a hurricane season starts with an A, the second with a B, and so on. In 2010, the name of the first tropical storm will be Alex. If the first storm is given a boy’s name, then the second storm will be given a girl’s name, and so on. In 2010, the second storm will be named Bonnie. In 2011, the first storm will have a girl’s name (Arlene) and the second storm a boy’s name (Bret).

Many names are used more than once. But when a hurricane causes a lot of damage, that name is never used again. That’s why the name Katrina will never be used again. Hurricane Katrina caused much damage to New Orleans and other parts of the Gulf of Mexico in 2005.

## Hurricane Hunters



Flying in a plane as it goes through a storm can be scary. Then why would anyone fly a plane directly into a hurricane over and over again? The answer is that people in planes can get information about hurricanes that can't be gotten in other ways. It is information that is important for saving lives.

There are satellites far from Earth that provide information to scientists about where hurricanes are and the direction of their movements. But satellites don't give good information about what is happening inside hurricanes. This is where the hurricane hunters come in.

At the beginning of this book, we described the eyewall of the hurricane as the area with the strongest winds. Scientists can judge the strength of a hurricane based on information on the shape and size of the eye and eyewall of the storm. At this time, it is hard for satellites in space to provide information on the size and shape of the eye and eyewall of the hurricane. The planes that hurricane hunters use have instruments that gather information on wind speed, temperature, and pressure.

Since hurricanes can change very quickly, hurricane hunters will fly through the same hurricane many times in order to get information. Information gathered from the hurricane hunters gives scientists a better understanding of the hurricane. It also helps government officials make decisions about whether people should stay in their homes or leave them. Scientists and government officials need the right information to make decisions and hurricane hunters can help give it to them.

## Rate your thinking and reading

- ✓ Put a check each time you read one of the chapters of the book.
- ★ Give yourself a star for Sharing if you told someone about something you learned from reading the chapter.
- ✚ Give yourself a + if you can tell that your reading is getting smoother.

	1st Read	2nd Read	3rd Read	Sharing	Smoother
Introduction					
The Beginning of a Hurricane					
Storm Names					
Hurricane Hunters					

## Comprehension questions

### The Beginning of a Hurricane

1. True or false? A hurricane has a wind speed of at least 74 miles per hour.  
☐ true   ☐ false
2. Which of the following are key features of a hurricane?
  - ☐ A mass of clouds moving in a circle
  - ☐ Calm ocean waves
  - ☐ An eye at the center of the hurricane
  - ☐ A high wind speed

### Storm Names

3. If the previous storm in a hurricane season was named Eric, which of the following names could be used for the next storm?
  - ☐ Frank
  - ☐ Gina
  - ☐ Fiona
  - ☐ Elizabeth
4. True or false? All hurricane names are used more than once.  
☐ true   ☐ false

### Hurricane Hunters

5. Why do hurricane hunters fly directly into a hurricane over and over again?
  - ☐ To see if the hurricane is over land or water
  - ☐ To fly people to where they need to be
  - ☐ To gather information about the inside of a hurricane
  - ☐ To try and destroy a hurricane
6. True or false? Hurricane hunters help scientists and government officials make important decisions.  
☐ true   ☐ false