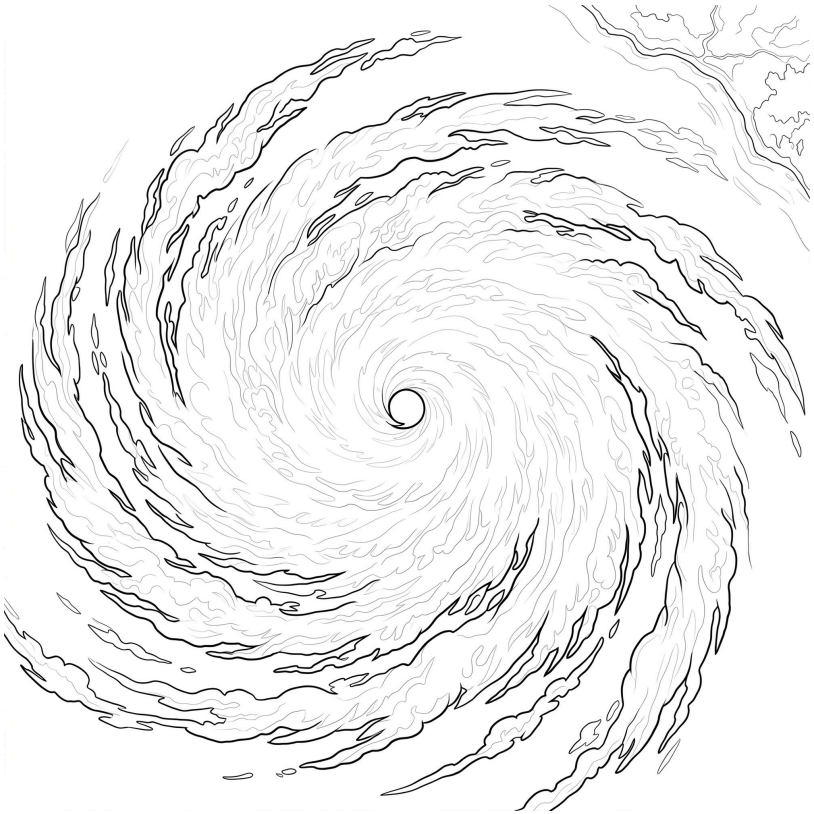
A Printable Scholar Weather Book

How Strong Is a Hurricane?

A book about hurricane categories, from 1 to 5



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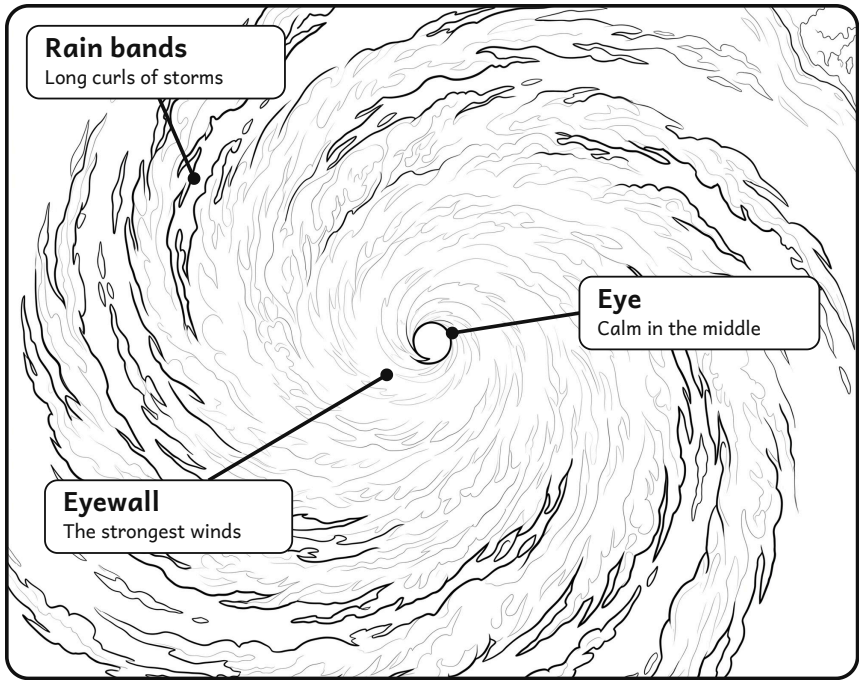
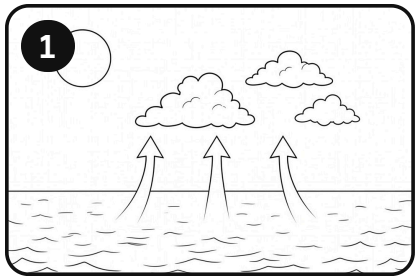
What Is a Hurricane?



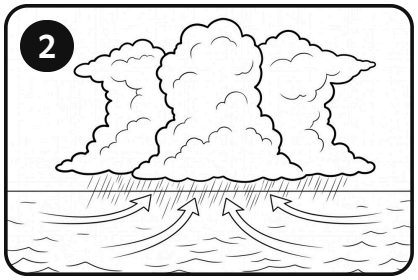
A hurricane is a giant spinning storm that forms over warm sea water. It can be hundreds of miles wide. This is how one looks from space.

The eye in the middle is calm. The strongest winds are in the eyewall, the ring of tall clouds around the eye.

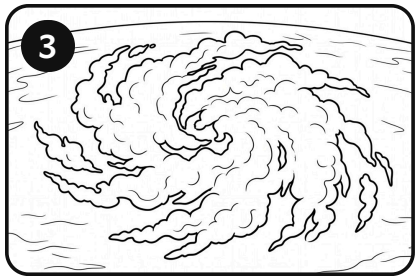
How a Hurricane Forms



The sun heats the sea to about 80 degrees or more. Warm, wet air rises from the water.



The rising air builds a cluster of thunderstorms. More air rushes in along the water to take its place.



The spin of the Earth makes the storms turn around a center. At 39 miles per hour it is a tropical storm, and it gets a name.



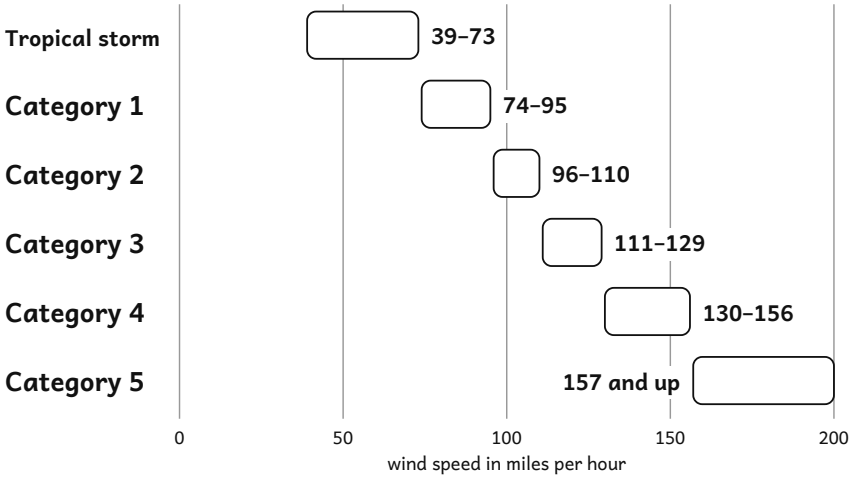
At 74 miles per hour it is a hurricane, with a clear eye in the middle.

A hurricane feeds on warm water. It gets weaker when it moves over land or over cold water.

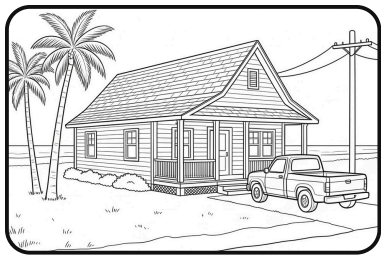
In other parts of the world, the same kind of storm is called a typhoon or a cyclone.

The Hurricane Scale

A hurricane gets a number from 1 to 5. The number is called its category, and it comes from the speed of the wind.

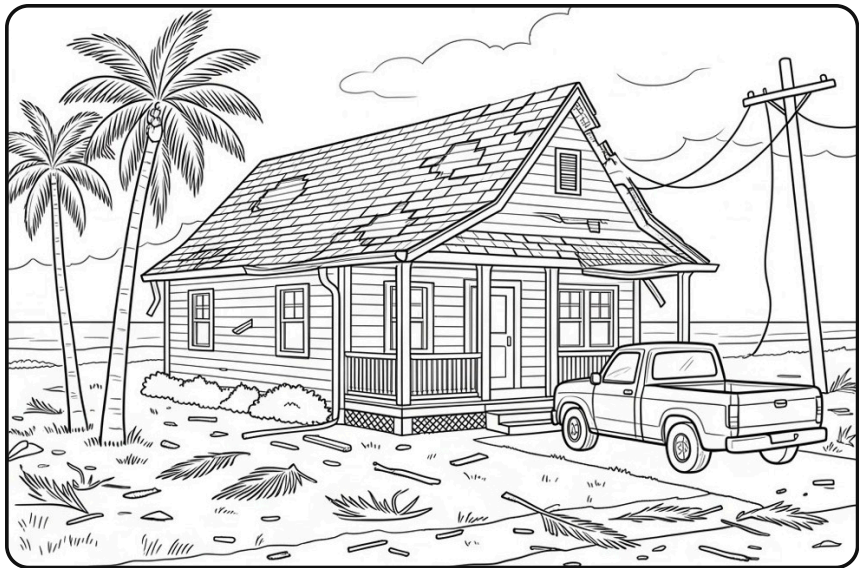


The category tells only how fast the wind blows. It does not tell how much water the storm will bring.



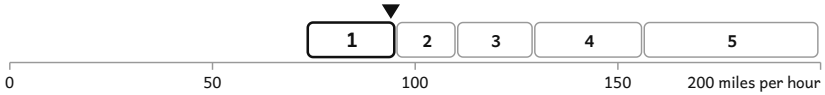
This is a house before the storm. The next five pages show the same house after each category of hurricane.

Category 1 Hurricane



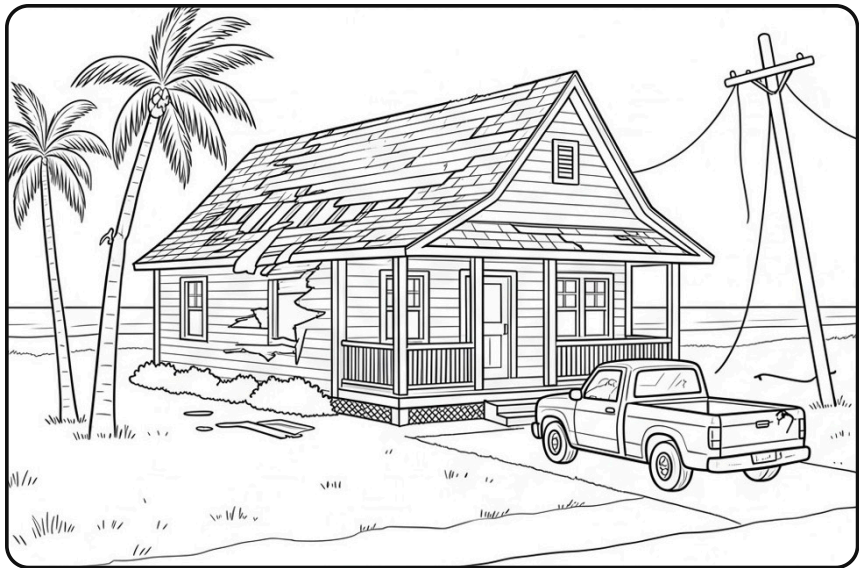
74–95 miles per hour
119 to 153 km per hour

A big-league fastball: about 94 miles per hour



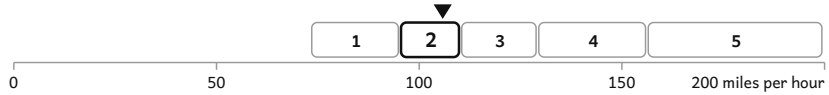
A Category 1 is the weakest hurricane, but its winds are still very dangerous. It can pull shingles and gutters off a house, snap big branches and knock over trees with shallow roots. The power can go out for days.

Category 2 Hurricane



96–110 miles per hour
154 to 177 km per hour

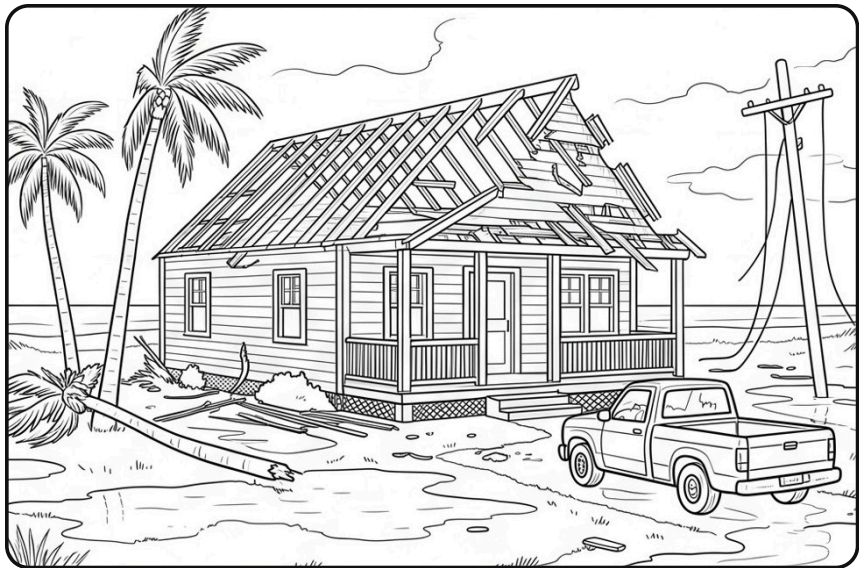
The fastest baseball pitch: about 106 miles per hour



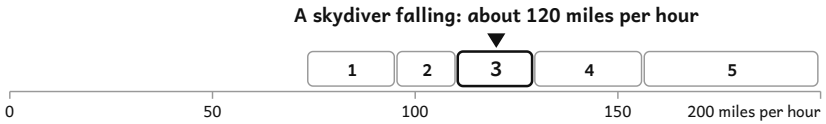
A Category 2 can tear away big parts of a roof and strip the siding off the walls. Many trees snap or fall and block the roads. The power can be out for days or weeks.

Category 3

Major hurricane



111–129 miles per hour
179 to 208 km per hour



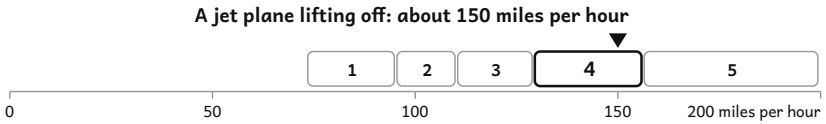
From Category 3 up, a storm is called a major hurricane. It can rip the roof boards off a well-built house and break the pointed ends of the roof. Many trees fall. There may be no electricity or clean water for days or weeks.

Category 4

Major hurricane



130–156 miles per hour
209 to 251 km per hour



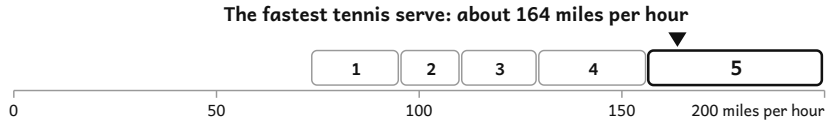
A Category 4 can take away most of a roof and knock down some of the outside walls. Most trees snap or are pulled up, and power poles fall. People may not be able to live in the area for weeks or months.

Category 5

Major hurricane



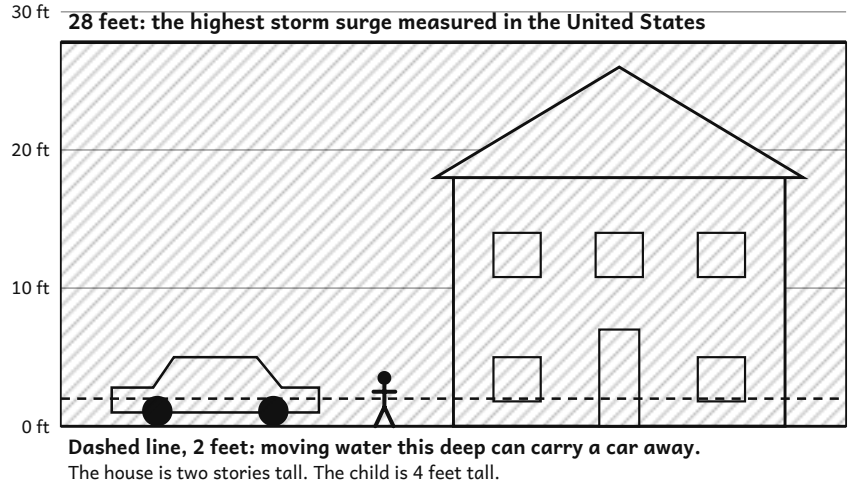
157 and up miles per hour
253 km per hour and up



This is the strongest hurricane there is. It destroys most wooden houses in its path. The roofs fail and the walls fall in. Category 5 hurricanes are rare. Hurricane Andrew in 1992 and Hurricane Michael in 2018 were both Category 5 when they hit the United States.

Storm Surge

Wind is not the most dangerous part of a hurricane. Water is. The wind pushes the sea up onto the land. This is called storm surge.



A hurricane can also drop rain for days and flood towns far from the sea. Most people who die in hurricanes are killed by water, not by wind.

Hurricanes by the Numbers

A typical hurricane: about 300 miles across



The widest tornado ever measured: 2.6 miles across

How long?
A hurricane can last a week or more. Most tornadoes last a few minutes.

How many?
In an average year the Atlantic Ocean has 14 named storms. 7 of them grow into hurricanes, and 3 become major hurricanes.

When?
Atlantic hurricane season runs from June 1 to November 30. The busiest time is the middle of September.

How fast can the wind get?
The strongest hurricane winds ever measured were about 215 miles per hour, in Hurricane Patricia in 2015.

Hurricanes to Remember

Galveston, 1900
Texas
There were no satellites and little warning. The sea rose over the whole island city. About 8,000 people died. It is the deadliest natural disaster in United States history.

Hurricane Andrew, 1992
Florida
A Category 5 with winds of 165 miles per hour. It destroyed more than 25,000 homes. 65 people died.

Hurricane Katrina, 2005
Louisiana and Mississippi
Its storm surge reached 28 feet. The walls that kept water out of New Orleans broke, and most of the city flooded. 1,392 people died.

In 1900 nobody could watch a hurricane cross the sea. Today satellites and airplanes track every storm, and people usually get days of warning. That gives them time to leave.

Staying Safe

Hurricane watch

A hurricane could reach you in about two days. Get ready.

Hurricane warning

A hurricane is expected in about a day and a half. Finish getting ready, or leave if you are told to.

What families do

1	Find out if you live in an evacuation zone. If leaders say to leave, leave early.
2	Keep water, food, flashlights and medicine for several days.
3	During the storm, stay inside and away from windows.
4	If the wind suddenly stops, you may be in the eye. Stay inside. The other half of the storm is coming.
5	Never walk or drive through flood water.

Hurricanes move slowly. There is almost always time to get out of the way.

Check What You Know

Circle the right answer. Look back in the book if you need to.

1. Which hurricane is stronger?

Category 2 | Category 5

2. Where do hurricanes form?

Over warm seas | Over mountains | Over ice

3. What is the calm middle of a hurricane called?

The eye | The wall | The band

4. What is the most dangerous part of a hurricane?

Wind | Water | Lightning

5. How many miles per hour makes a storm a hurricane?

39 | 74 | 157

6. If the wind suddenly stops during a hurricane...

Go outside | Stay inside | Open the windows

Answers: 1. Category 5 • 2. Over warm seas • 3. The eye • 4. Water • 5. 74 • 6. Stay inside

The numbers in this book come from the United States National Hurricane Center and National Weather Service.