

Tuesday 2 March

Use this link to watch today's episode of Newsround.

https://www.bbc.co.uk/newsround/news/watch_newsround

Let me know your favourite story.

Today we are going to investigate Hurricanes.

By the end of the afternoon I hope you will know:

What a hurricane is?

How they are formed?

How we measure them?

Who names them?

What damage they can do?

First click on the link to watch a short video clip about hurricanes.

<https://www.youtube.com/watch?v=vP2z8QAmQAQ>

What Is a Hurricane?



What Is a Hurricane?

- A hurricane is a huge, rapidly rotating storm.
- When winds reach 74 miles per hour, a hurricane is officially born.
- Hurricanes can be up to 600 miles across and have strong winds of up to 200 mph.
- Each hurricane usually lasts for over a week, moving 10-20 miles per hour over the ocean.
- Hurricanes form close to the equator.
- Hurricanes rotate around the center of the storm or "eye"; this is the calmest part.

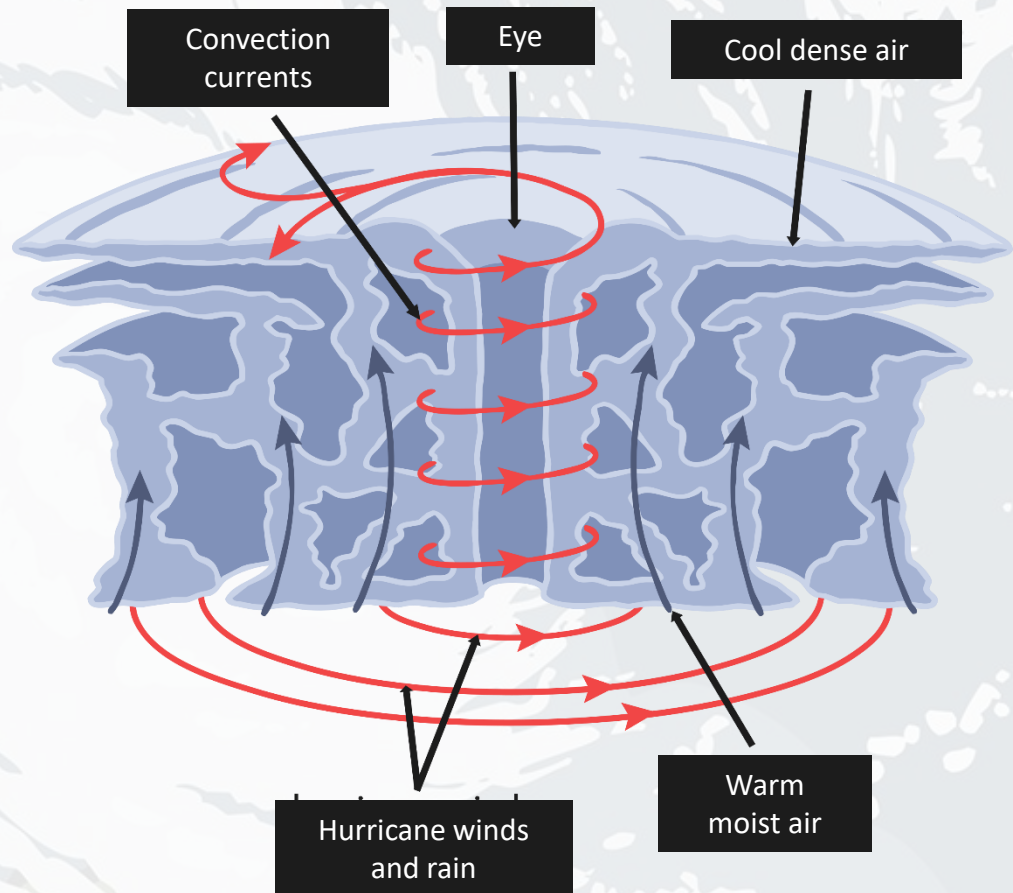
The 'Eye' of the Hurricane



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The Eye of the Storm

- The center of a hurricane is called the “eye.”
- The eye of the hurricane is very calm, while the rest of the storm consists of heavy rain, strong wind, or large waves.



What Causes a Hurricane?

- Hurricanes form over really warm ocean water.
- Hurricanes gather heat and energy through contact with warm ocean waters.
- The wind must be blowing in the same direction and at the same speed to force the cool air upward from the ocean.
- As a hurricane's winds spiral around the storm, they push water into the storm's center. When the storm reaches land, this water causes flooding.
- Rising air and water temperatures worldwide are creating more frequent and severe hurricanes.

The Saffir-Simpson Hurricane Wind Scale

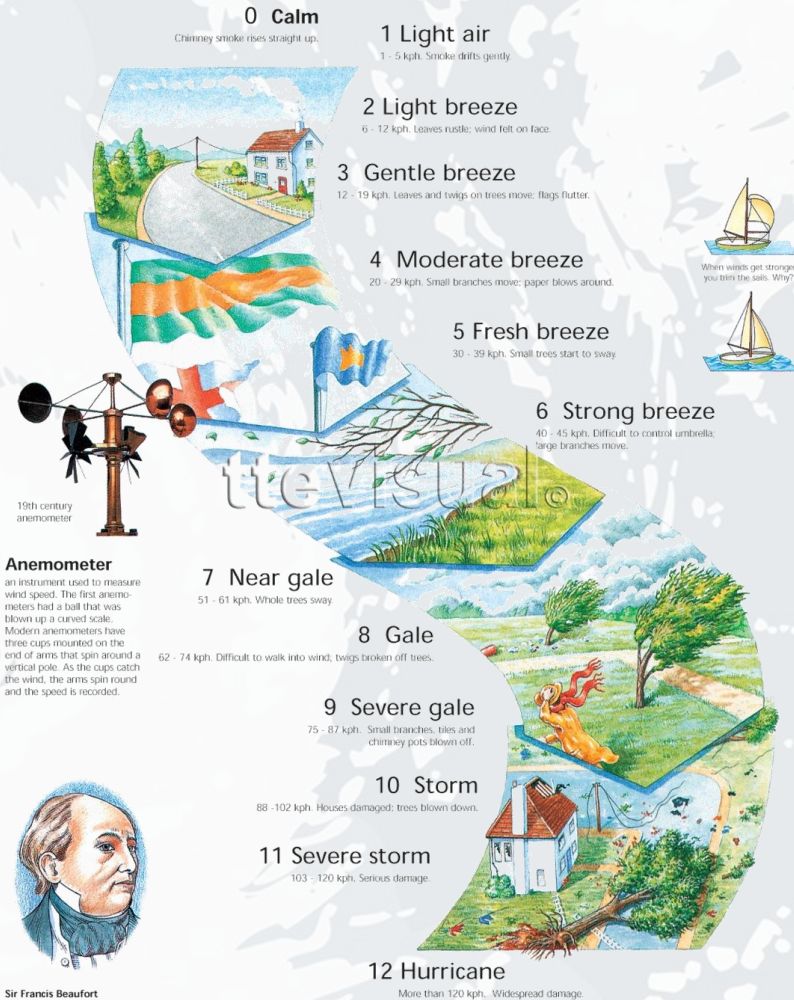
Category	Wind Speed	Damage
1	74-95 mph	Minimal
2	96-110 mph	Moderate
3 (Major)	111-129 mph	Extensive
4 (Major)	130-156 mph	Extreme
5 (Major)	157 mph or higher	Catastrophic

Thankfully, in the UK, Major Hurricanes are rare. When they do happen, they are generally fairly small.

To measure the speed of winds in the UK, we use the Beaufort Scale, which goes from 0 to 12. A Hurricane rated 1 on the Saffir-Simpson Scale has much stronger winds than a storm rated 12 on the Beaufort Scale. That tells you just how furious the winds of a Hurricane can be.

• Beaufort scale

• Wind - Air Pressure Climate 2b 6 - 3
Climate 2 a + b integr.: 2.1: 9 - 4



Source: Visual Dictionary, Science, Grades and Eye-witness Series © UK Dooling Publishing, London
For further study on the topic of the history and uses of the Beaufort Scale, visit: www.encyclopedia.com

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The Impact of a Hurricane

When hurricanes come onto land, the heavy rain, strong winds, and large waves can damage buildings, trees, and cars.

What kinds of damage occurred in the area?

Imagine you are part of a hurricane rescue team. What kind of help do you think you would need to provide when you arrive on the scene?



Hurricane Safety Rules

Stay away from low-lying and flood prone areas.

Board up windows.

If your home isn't on higher ground, go to a shelter.

Always stay indoors during a hurricane, because strong winds will blow things around.

Leave mobile homes and go to a shelter.

If emergency managers say to evacuate, then do so immediately.

Hurricane Safety Rules

Prepare a disaster supplies kit for your home and car. Include:

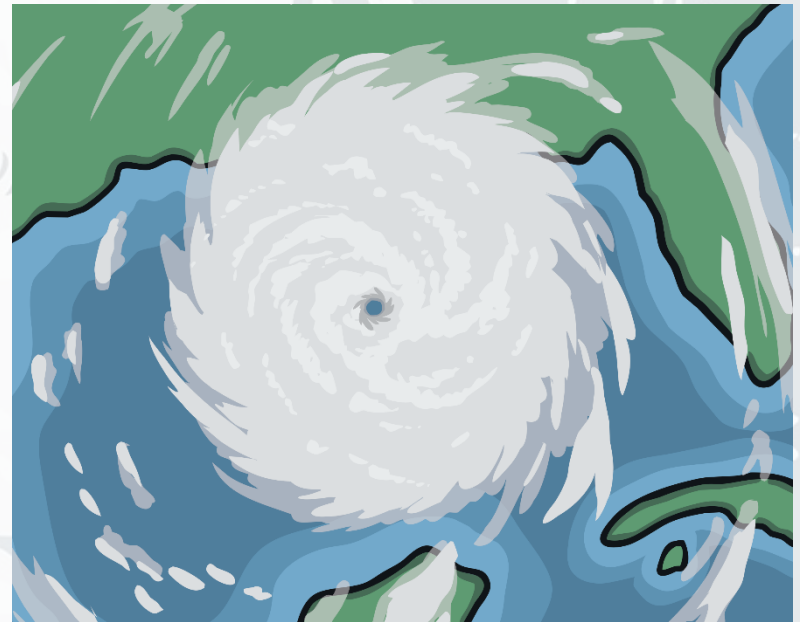
- Enough food and water for at least three days
- First aid kit
- Canned food and a can opener
- Bottled water
- Battery-operated radio
- Flashlight
- Protective clothing
- Written instructions on how to turn off electricity, gas and water

Make sure you know where all of the evacuation routes are located.

Always listen to the radio and television for the latest information and instructions for your area.

Who Names Hurricanes?

- The World Meteorological Organization names hurricanes.
- The organization uses different sets of names depending on which region of the world the storm is in.
- Names alternate from women's names to men's names.
- If a hurricane does significant damage, the name is retired from the list.

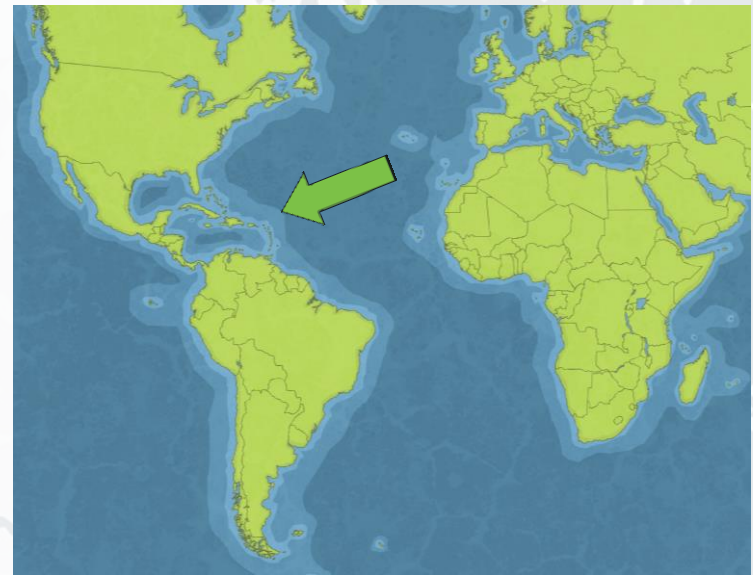


Hurricanes Around the World

The Great Hurricane of 1780, Caribbean

- The storm bombarded several Caribbean islands, including Barbados, Martinique, and St. Lucia over six days.
- This massive storm is considered to be one of the deadliest hurricanes of all time.
- Approximately 22,000 people were killed.

The names given to hurricanes can be reused after six years have passed. However, if a hurricane has been especially severe, then its name is permanently retired, and never used again.



Hurricanes Around the World

Hurricane Mitch, Honduras, 1998

- The slow-moving hurricane poured up to four inches of rain per hour, causing mudslides and deadly flooding.
- With approximately 11,000 people dead (and thousands more missing), Mitch is the second-deadliest Atlantic hurricane on record and the worst to hit the Western Hemisphere in more than 200 years.
- The storm caused more than \$5 billion worth of damage in Honduras, where much of the country's infrastructure and crops were completely destroyed.
- Nicaragua was also devastated by Mitch, losing 2,000 people in one mudslide alone.



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Hurricanes Around the World

Hurricane Katrina, New Orleans, 2005

- Hurricane Katrina lasted for eight days.
- The winds reached up to 175 mph.
- One of the costliest natural disasters in the history of the U.S., Katrina caused damages worth \$108 billion.
- Hurricane Katrina resulted in 1,833 deaths.
- Katrina displaced over one million people.
- Oil facilities were damaged and as a result, fuel prices rose in the U.S.



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In the UK, our wind speed is measured using the Beaufort Scale. It goes from Force 0 up to Force 12.

The table below gives you an idea of how strong the winds on the Beaufort Scale are – but you'll notice that some of the descriptions are missing. You have to fill these in using the cards your teacher will give you.

Work out which of the statements goes in which box!

Force	Wind speed	What the sea is like	What the land is like
0	Calm 1 mph	Like a mirror	Smoke rises vertically
1	Light air 3 mph	Ripples, with no waves	Smoke drifts, leaves are still
2	Light breeze 7 mph	Small waves that don't break	Leaves rustle, weather vanes move
3	Gentle breeze 12 mph	Waves begin to break	
4	Moderate breeze 18 mph	Fairly frequent small waves	Dust and loose paper raised off the ground, small branches move
5	Fresh breeze 24 mph		Medium-size branches move
6	Strong breeze 31 mph	Long waves and some spray in the air	Large branches moving, whistling in some overhead wires

7	High wind 38mph	Foam from breaking waves blown in streaks; moderate spray	
8	Gale 46 mph		Cars veer on the road, walking is difficult
9	Severe gale 54 mph	High waves, spray in the air reduces visibility	Small trees and temporary signs blown over

10	Storm 63 mph	Very high waves, sea has a white appearance	
11	Violent storm 72 mph		Widespread damage to vegetation and buildings
12	Hurricane Over 73mph	Huge waves, sea is completely white; air filled with driving spray	

Damage to housing, trees uprooted

Leaves and small twigs constantly move

Moderate waves; some spray

Severe damage to housing, unsecured objects thrown about

Fairly high winds with plenty of spray in the air

Whole trees sway; walking is an effort

Very high waves, large patches of foam, very large amounts of spray in the air

What is a Hurricane?

Hurricanes are large, rotating storms that form over the warm waters of the tropics. Wind speeds must exceed 74mph for a storm to be categorised as a hurricane. There are 5 categories of hurricane. The scale of categories is called the Saffir-Simpson Hurricane Scale.

Task: Draw a line from the category description to the correct example:

Category 1

74 – 95mph winds
minimal damage

Category 2

96 – 110mph winds
moderate damage

Category 3

111 – 129mph winds
extensive damage

Category 4

130 – 156mph winds
extreme damage

Category 5

157mph+ winds
catastrophic damage

Hurricane Arthur (2014)

Maximum wind speed
100mph

Impacts:

- Wind-damaged buildings and trees
- A storm surge caused a flood of seawater near the coast.

Hurricane Harvey (2017)

Maximum wind speed
130mph

Impacts:

- 70 deaths
- 39 000 homeless
- \$180 billion of damage.

Hurricane Irma (2017)

Maximum wind speed 185mph

Impacts:

- 72 deaths (to date)
- Widespread flooding
- Millions left without power
- Food and drinking water shortages
- Thousands homeless
- \$14 billion of damage (estimated).

Hurricane Isaac (2012)

Maximum wind speed
80mph

Impacts:

- 41 deaths
- Produced several tornadoes
- Flooding caused structural damage to houses and infrastructure
- \$2.3 billion of damage.

Hurricane Katrina (2005)

Maximum wind speed
125mph

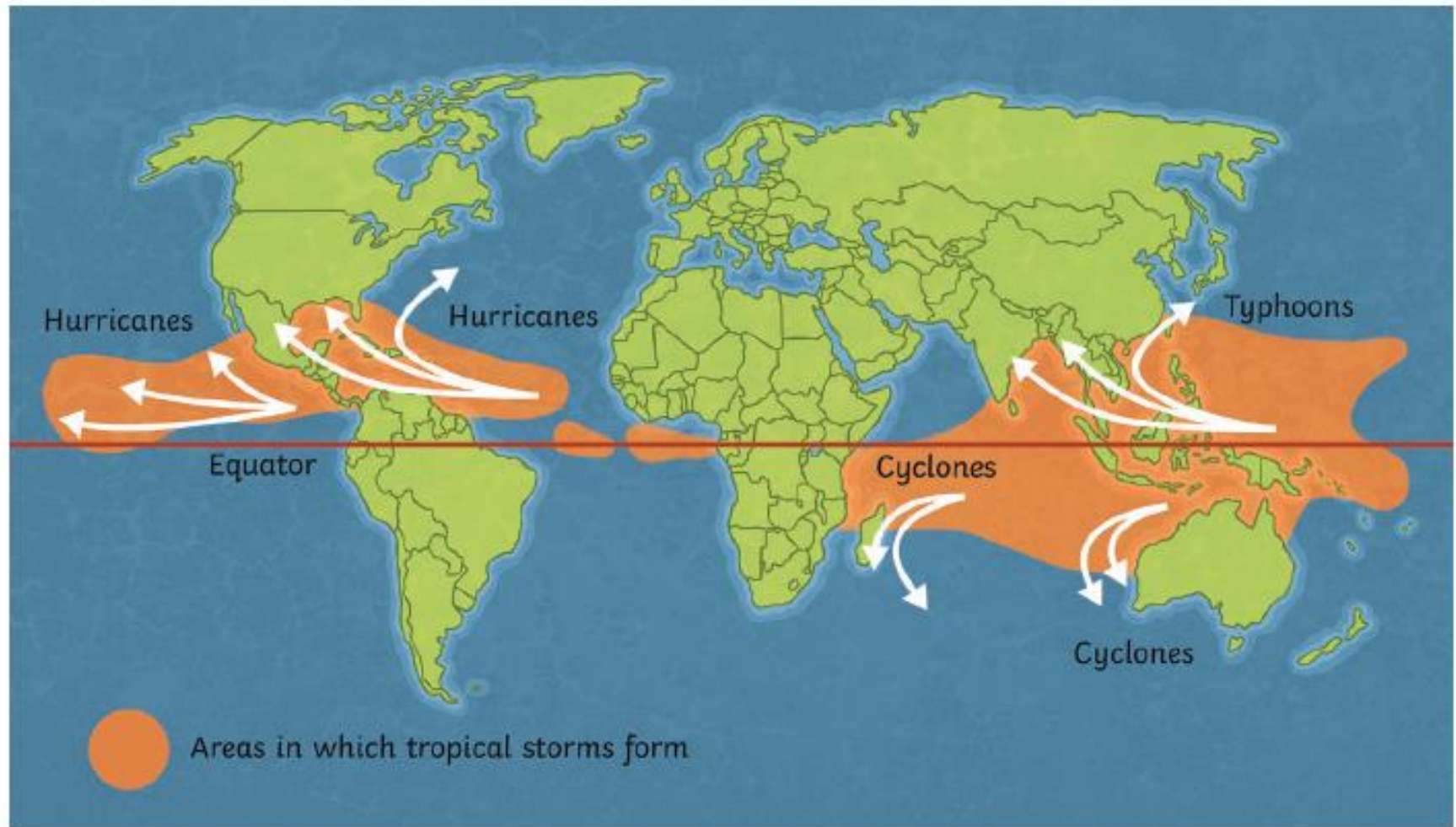
Impacts:

- 1836 deaths
- Broken flood defences caused flooding in New Orleans
- \$81 billion of damage.

Extension Task: Choose one of these hurricanes to research further and write a newspaper article about it.

Where Do Hurricanes Form?

Hurricanes, cyclones and typhoons are the same weather phenomenon; we simply give them different names in different parts of the world.



Name the continents affected by:

Hurricanes

1. _____

2. _____

Cyclones

1. _____

2. _____

Typhoons

1. _____

Hurricanes

Can you find...

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

Arthur (2014)

Felix (2007)

Harvey (2017)

Irma (2017)

Isaac (2012)

Jeanne (2004)

Katrina (2005)

Matthew (2016)

Rita (2005)

Stan (2005)