



Geography

Year 9 Home Learning Booklet



Hurricanes and Hurricane Katrina

Name _____

Tutor
Group _____

Teacher _____

Given out Monday 21 October Hand in Monday 4 November

Parent/Carer Comment

Staff Comment

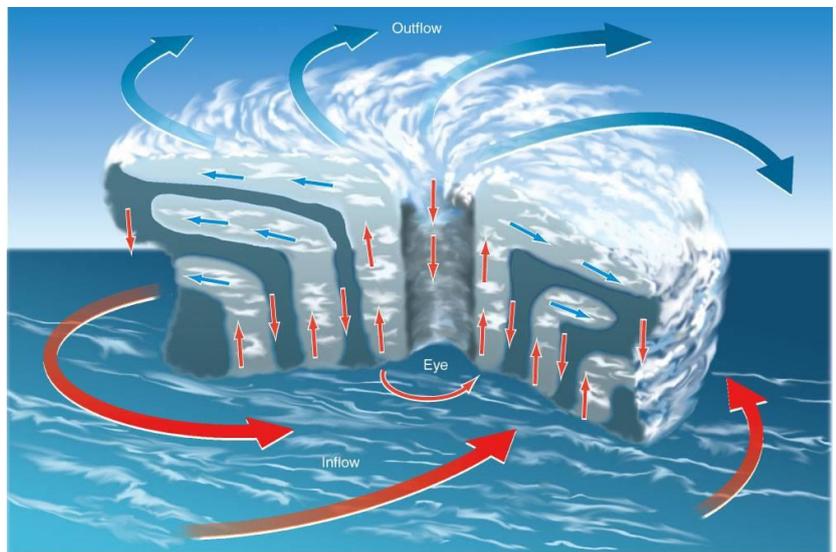
Target

Your home learning booklet this week is all about hurricanes. You will discover where they form in the world, how they form and look at a case study of Hurricane Katrina which hit the USA in 2005 and was one of the deadliest storms in recorded history.



Task 1: How a Hurricane Forms (10 minutes)

Look at the two pictures below and write down 5 questions you could ask about how a hurricane forms.



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- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

A hypothesis is a sentence you write to make a guess about something.

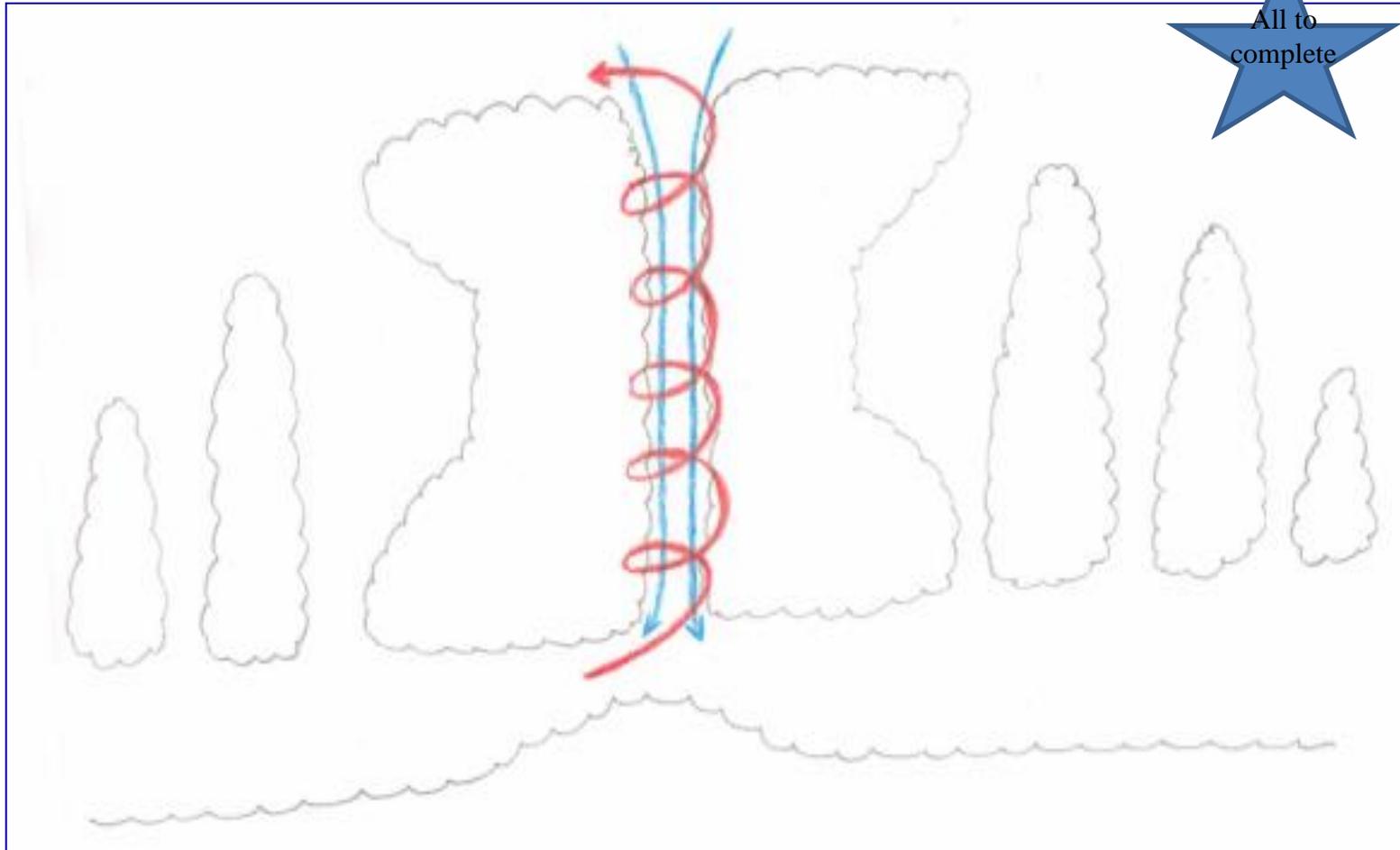
Write a hypothesis about how you think hurricanes might form. Use the sentence starters to help you.

My hypothesis is that hurricanes form_____

I think this because _____

Task 2: How to make a hurricane (10 minutes)

This is a picture of what a hurricane would look like if you chopped it in half. Look at the labels. Each label has a number. Number your diagram to show where each label belongs.



1) Hurricanes form over warm seas of at least 27°C

2) Warm moist air rises and condenses forming clouds.

3) As the air rises it spirals, cools and condenses - releasing huge amounts of heat energy which powers the storm.

4) The very large temperature difference between the eye of the storm which is very warm and the edges of the storm which are much cooler cause the extreme strong winds.

5) The eye of the storm is right in the centre where warm air spirals upwards and cool air sinks.

6) The low pressure at the centre of the hurricane means that the sea surface is pulled up, creating a bulge of sea water called a storm surge.



Task 3: Tracking Hurricane Katrina (45 minutes)

1) Use the coordinates of Latitude and Longitude to plot the track of Hurricane Katrina onto your map. It is the same as if you were doing coordinates in Maths!

	Date	Time	Latitude Degrees North	Longitude Degrees West	Scale
1	24 th Aug 2005	0000	23	76	Depression
2	24 th Aug 2005	1200	24	77	Tropical Storm
3	25 th Aug 2005	0000	26	78	Tropical Storm
4	25 th Aug 2005	1200	26	79	Tropical Storm
5	26 th Aug 2005	0000	26	80	1
6	26 th Aug 2005	1200	25	82	1
7	27 th Aug 2005	0000	25	83	2
8	27 th Aug 2005	1200	24	85	3
9	28 th Aug 2005	0000	25	86	3
10	28 th Aug 2005	0006	25	87	4
11	28 th Aug 2005	1200	26	88	5
12	28 th Aug 2005	1800	26	89	5
13	29 th Aug 2005	0000	27	89	5
14	29 th Aug 2005	0006	28	90	4
15	29 th Aug 2005	1200	30	90	3
16	30 th Aug 2005	0000	37	89	3

2) What were the wind speeds on August 28th?

Hurricanes are measured on the Saffir Simpson Scale

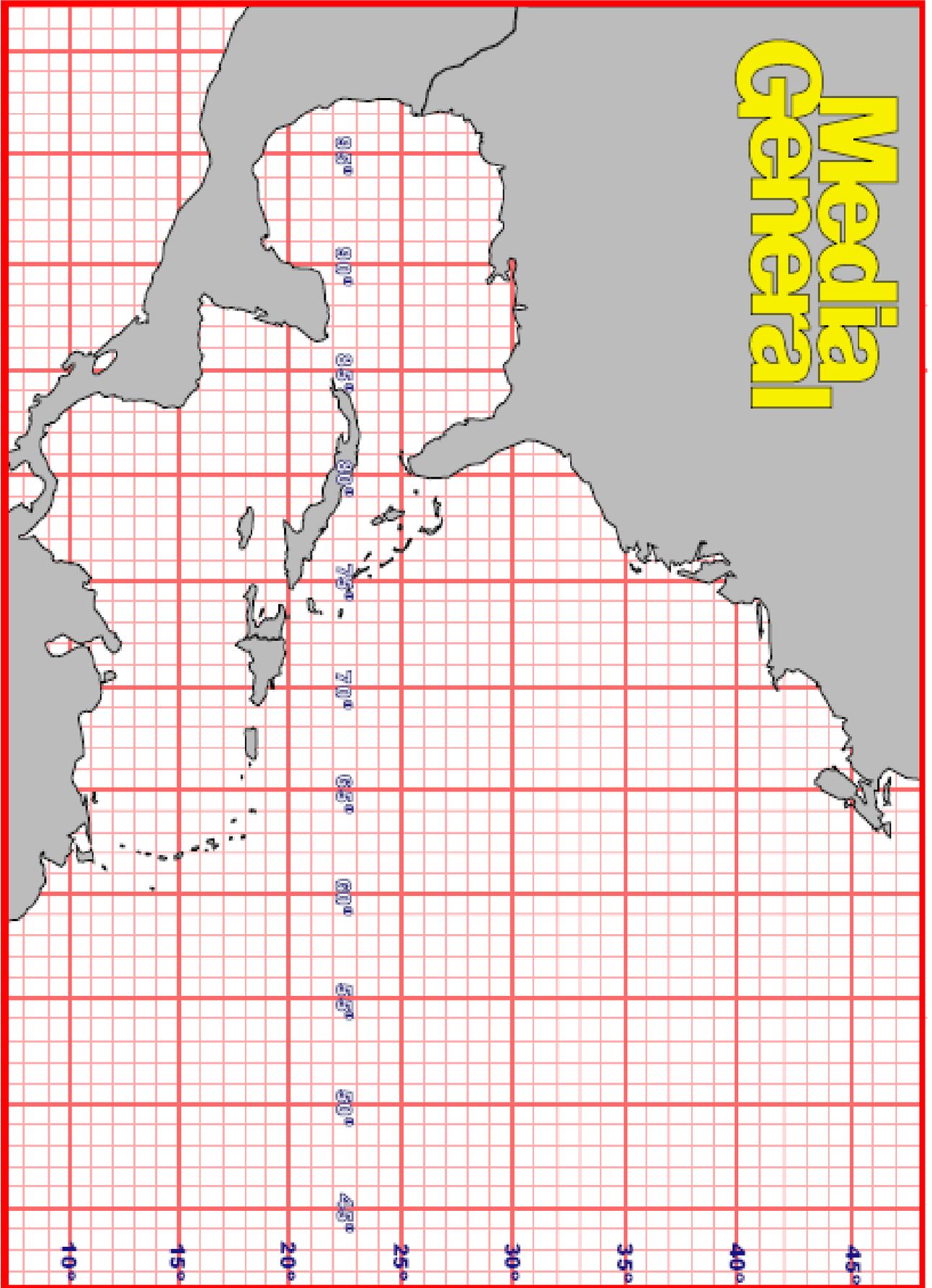
Scale	Damage	Wind Speeds	Storm Surge
1	Minimal	74 - 95 mph	1-2 metres
2	Moderate	96 - 110 mph	2-3 metres
3	Extensive	111 - 130 mph	3-4 metres
4	Extreme	131 - 155 mph	4-6 metres
5	Catastrophic	156+ mph	6 metres +



Tracking Hurricane Katrina: Plot your coordinates onto here

**Media
General**

95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45°



10° 15° 20° 25° 30° 35° 40° 45°

Task 4: Hurricane Katrina - What happened? (20 minutes)

Read through this information carefully. Use a highlighter or underline anything you think is important information about why Katrina was such a bad disaster.

Hurricane Katrina occurred at the end of August 2005 and lasted for several days. It began in the Gulf of Mexico and moved north to affect the states of Alabama and Louisiana in the USA. New Orleans was particularly badly hit.

Hurricane Katrina's scale (the storm was 500km across) and magnitude (wind speeds as high as 155mph) meant that even though it veered away from New Orleans at the last minute it still had a huge impact on the city as well as devastating the Alabama coast.

The magnitude and scale of Katrina was a key factor. Hurricane Katrina was so big that the flood defences were not good enough to stand up to her. Unusually high sea temperatures in the Gulf of Mexico (possibly an effect of global warming) helped build Katrina into a category five storm when flood defences were only built to withstand a category three hurricane.

Much of the US coastline from Louisiana to Alabama was devastated by Hurricane Katrina. It arrived as a category 4 storm with winds of over 40 mph and a storm surge of 6 metres. New Orleans lies in a bowl-shaped valley that is 3 to 5 metres below sea level. The system of levees (dams to stop the sea from flooding the city) and sea walls that were constructed to protect New Orleans broke leading to large parts of the city being very badly flooded when the water poured into the valley and then couldn't drain away.

Use the information you have just read to fill in the boxes on 'Location', 'Time and Date' and 'What happened' on the Case Study sheet on the next page. Use bullet points to collect the information.



Case study - Hurricane Katrina

Location: place and country	
Time and date	
What happened to cause the event?	
Effects (things that happen)	
Responses - what was done to help?	

Task 5: Hurricane Katrina - Effects (15 minutes)

Read through this information carefully. Use a highlighter or underline anything you think is important information about what happened during the storm.

A very high tide and 6 metre waves broke the levees (dams) and flood defences causing severe flooding. 75% of the city ended up underwater. 1200+ people drowned and over a million were left homeless. Fires broke out in places where gas mains were broken and many dead bodies were left floating in the water. Many other people were trapped in their homes. Many people who were left in the city were told to take shelter in the city's sports stadium called the Superbowl where they were trapped during the storm without food or water. Because of this many people started to take whatever they could to survive and people began stealing other people's things and looting from shops. Fights broke out and the armed forces were called in to help. People who couldn't shelter in the Superbowl were left to sleep out on the streets.

Use the information you have just read, plus anything you can see in the pictures to fill in the box on 'Effects' on the Case Study sheet. Use bullet points to collect the information.



Task 6: Hurricane Katrina - Responses (20 minutes)

The next bits of information are quotes on what people said about the situation in New Orleans during the disaster. This is what real people said during the real thing. Some of their opinions are very strong because they are upset by what is happening. Read them carefully and highlight or underline any information you think might be important about how people were helped or not helped.

"I hate the way they portray us in the media, if you see a black family it says they're looting, if you see a white family it says they're looking for food and you know that it's been 5 days because most of the people are black. The way America is set up is to help the poor, the black people, the less well off as slow as possible. Red Cross is doing everything they can but everyone that could help is fighting the war and they have given permission for them to go down there and shoot us...George Bush doesn't care about black people"
American Rap Artist Kanye West



"The thing that is most obvious in all of this is that the conditions continue to get worse for the victims in all of this and the efforts to do something about it are nowhere in sight... A better leader would have flown straight to the site of the disaster zone and announced the immediate call-up of every available help...The President showed up a day later than he was needed...and appeared casual to the point of carelessness...The government was not ready and shifted its attention from natural disasters to fighting the war on terror...No one believes the government is doing a good job in handling one of the most atrocious, embarrassing, far-reaching and calamitous things that has come along in this country in my life time. I'm 62...I have never ever seen as badly bungled and poorly handled as this situation in New Orleans. Where the hell is the water for these people? Why can't sandwiches be dropped to those people that are trapped in the Superdome down there? I mean what is going on?! This is Thursday, this storm happened 5 days ago! It's a disgrace." **CNN News Reporter**

Use the information you have just read to fill in the box on 'Responses' on the Case Study sheet. Use bullet points to collect the information. There was very little response from the American government so try to name the things that they didn't do.

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Well done for completing your Home Learning Booklet for Geography.