



The Ocean's Role in Weather Systems

The ocean covers more than 70 percent of the Earth's surface. It is very effective at absorbing and storing heat from the Sun. Because of this absorbing and storing heat, the ocean plays an important role in shaping our climate and weather patterns.

Warm ocean waters provide the energy to fuel weather systems that bring needed rain to the dry land. Warm water evaporates from the ocean into the atmosphere, where it can condense and form clouds, which can eventually lead to rain. Tropical storms form over warm ocean waters, which supply the energy for hurricanes and typhoons to grow and move, often over land.

The most destructive of all weather phenomena is the hurricane. Winds in a tornado can momentarily exceed those of a hurricane, but the life cycle of a tornado is measured in minutes while the life cycle of a hurricane is measured in weeks.

Several phases of development take place before a tropical cyclone develops into a hurricane. Growth is determined by the strength of the sustained wind. The tropical depression has winds less than 36 mph; winds of a tropical storm range from 36-74 mph. The hurricane has sustained winds greater than 74 mph.

Hurricanes begin as tropical storms over the warm moist waters of the Atlantic and Pacific Oceans near the equator. Hurricanes over the Atlantic, drift west on the Trade Winds, and veer north as they meet the prevailing winds coming eastward across North America.

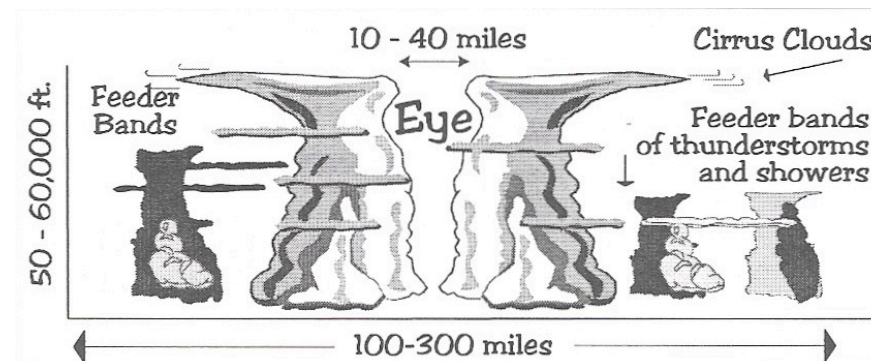
In the chart below list the type of storm and the range of sustained winds.



Type of Storm	Sustained Winds

Diagram of a Hurricane

Use the diagram below to answer the following questions.



Questions:

1. How wide can a hurricane be? _____
2. What is the center of a hurricane called? _____
3. How wide can it be? _____
4. How tall can a hurricane be? _____
5. What are the thunderstorms and showers outside a hurricane called? _____

Watch the video Hurricanes 101 from www.missdoctorbailer.com and answer the following question.

The diagram above was published in the 1980's. Why is the information in the video different?



Hurricane Origins 1982-1991								
Year	Lat (°N)	Long (°W)	Year	Lat (°N)	Long (°W)	Year	Lat (°N)	Long (°W)
1982	23	85	1986	30	78	1990	17	23
	14	24		27	89		11	25
	27	94		32	78		13	27
	23	72		11	56		12	53
1983	27	68	1987	23	52		20	93
	27	92		24	63		21	84
	27	76		27	94		11	57
	32	63		29	76		29	75
1984	30	73	1988	15	26		16	33
	13	55		24	40		17	83
	15	45		11	25		39	28
	39	65		11	56		9	53
1985	28	78	1989	16	82		13	50
	15	26		42	69		15	40
	28	60		29	89		10	32
	25	77		21	96		19	34
	25	72		35	54	16	59	
	17	67		24	89	31	56	
	31	66		27	80	23	82	
	27	83		15	62	22	62	
	34	74		13	34	36	71	
	24	87		12	56	27	76	
	22	78		11	47	27	56	
	26	67		16	82	10	35	
1986	15	28	1989	27	96	29	53	
	35	74		18	48	20	84	
	18	69		24	91	31	67	
	24	93		17	48	36	70	
22	64	18	32					

Name _____ period _____

EXIT TICKET

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1. At what sustained wind speed does a tropical storm become a hurricane?
 - A. greater than 35 mph
 - B. greater than 50 mph
 - C. greater than 74 mph
2. What is the source of energy for all weather systems?
 - A. The Sun
 - B. The Moon
 - C. The Tides
3. What role does the ocean play in the formation of hurricanes?
 - A. The water stirs up the atmosphere
 - B. The water absorbs and stores heat
 - C. The water cools the atmosphere
4. What is the middle of the hurricane called?
 - A. Galactic center
 - B. The center
 - C. The eye
5. What are the feeder bands made of?
 - A. Thunderstorms
 - B. Tornadoes
 - C. Dust storms

Name _____ period _____

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 - B. greater than 50 mph
 - C. greater than 74 mph
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 - A. Thunderstorms
 - B. Tornadoes
 - C. Dust storms