

STEM *Sims*™

# Storm Surge



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**Do you need an idea for a scientific study?**

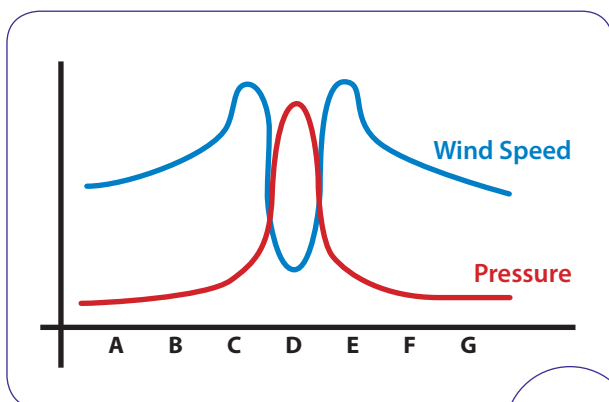
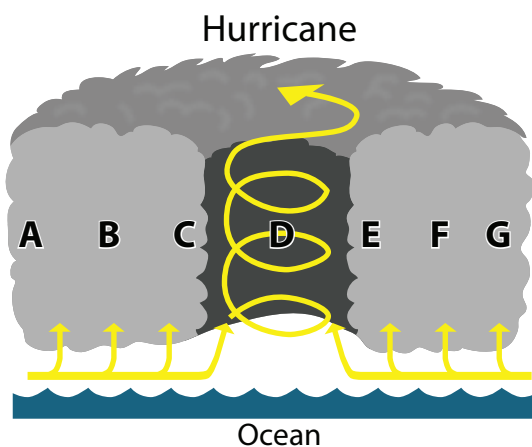
**Try out one of our ideas or make one of your own.**

**Start right now learning about the basics of how hurricanes affect people and property. Take the following quiz of to see how much you already know about severe storms. See the bottom of page 4 to check your answers.**

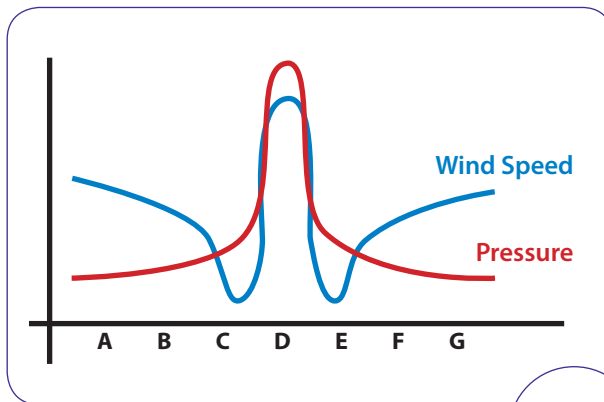
1. In the late 1800's, a weather forecaster named Clement Wragge became the first person to name tropical cyclones. He based his storm-naming scheme on the names of:
  - a. old girlfriends.
  - b. evil Greek gods.
  - c. politicians he disliked.
  - d. biting flying insects.
2. From 1900 to Present, how many Category 5 hurricanes have hit the United States?
  - a. 4
  - b. 9
  - c. 16
  - d. 22
3. The term "hurricane" was derived from an American Indian word. What is the meaning of the American Indian word for hurricane?
  - a. fast water
  - b. big wind
  - c. sucking wind
  - d. evil spirit
4. The Great Galveston Hurricane from 1900 was the most deadly hurricane on record to strike the United States. The storm was responsible for the deaths of between 8,000 - 12,000 people. Which category storm was the Great Galveston Hurricane when it made landfall?
  - a. Category 3
  - b. Category 4
  - c. Category 5
  - d. beyond Category 5
5. Currently, Hurricane Katrina is the costliest storm to hit the United States, causing over 200 billion dollars of property damage. Which category storm was Hurricane Katrina when it made landfall?
  - a. Category 3
  - b. Category 4
  - c. Category 5
  - d. beyond Category 5



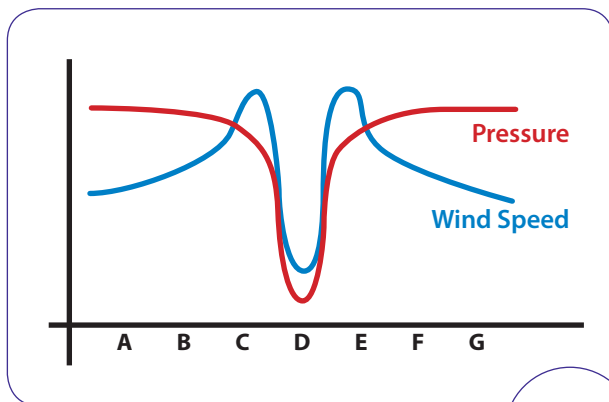
The diagram below shows a hurricane over ocean water. Which of the four graphs best represents the relative wind speeds and pressures for locations A - G? \_\_\_\_\_



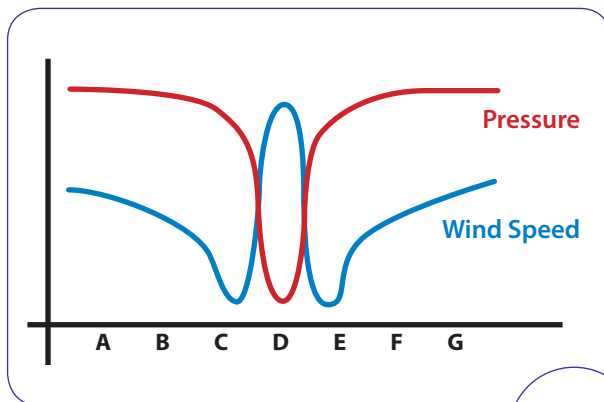
1



2



3



4

# Storm Surge

## Under the Sea

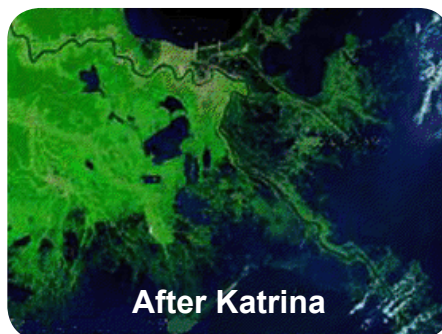
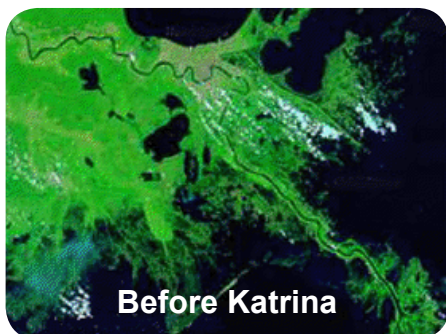
Complete the following activity to determine the amount of land in Louisiana that was impacted by the storm surge of Hurricane Katrina in 2005.

### Materials

- Sheet of copy paper
- Balance with 0.01 gram accuracy
- Scissors

### Procedure

1. Place the copy paper over the Before Katrina and After Katrina images and trace the land area. The green color indicates land areas.
2. Try to trace the general outline of the land without being too concerned with every small finger of land.
3. Use the scissors to cut out the tracings.
4. Use the balance to individually find the masses of the Before and After tracings of Katrina. Record these values.
5. Use the following equation to determine the percentage of land affected by the storm surge.  
$$\frac{(\text{Before Mass} - \text{After Mass}) \times 100\%}{\text{Before Mass}} = \% \text{ Land Affected}$$



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**Answers: Page 2 Answers:** 1) c. 2) a (Andrew in 1992, Camille in 1969, and an unnamed storm in 1935) 3) d. 4) b. 5) a. (A common misconception is that a lower category hurricane is less of a threat than a higher category hurricane.). **Page 3 Answers:** Graph 3. Page 4: About 30% - 40% of the land in the region shown in Louisiana was affected by Hurricane Katrina's storm surge.

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