

# Writing a Research Report

*by Chris J. of Edward E. Drew, Jr., Middle School  
in Falmouth, Virginia*

## Tracking Hurricanes

### INTRODUCTION

Attention-grabbing  
beginning

Thesis statement

Between June 1 and November 30, scientists are constantly monitoring the Atlantic for the formation of hurricanes, which may affect the areas where we live. When people are unprepared, hurricanes may destroy the lives and property of many residents. The safety of millions of families on the East Coast depends on the scientists' ability to track and predict the path of a hurricane. Tracking hurricanes is a constantly changing learning experience for weather scientists. Today, scientists use four basic methods to track hurricanes. These methods include the use of satellites, Doppler radar, reconnaissance aircraft, and observations.

### BODY

Subtopic 1:  
Satellites

Using satellites is one of many ways to track hurricanes. Satellites help scientists see cloud patterns. When scientists first started using satellites, they did not have a clear

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### Facts

understanding of the formation of hurricanes. For instance, they thought that if a hurricane's cloud pattern was small, the hurricane would not be a strong one. However, after Hurricane Camille in 1969, they found that the position of the eye was the best way to determine the strength of a hurricane. Camille had a very small cloud pattern, so scientists thought that it would be a weak hurricane. When they flew planes into the eye, which is the center of the hurricane, they discovered that Camille was a Category five hurricane, the strongest hurricane possible. After Camille, they learned to judge a hurricane's strength by the position of the eye in relation to the rest of the cloud cover. They also found that by putting together satellite pictures and using a computer to put them into motion, they can estimate the track of the developing hurricane. The new Geostationary-orbiting Operational Environmental Satellite, or GOES, is a series of satellites that can send scientists pictures twice every hour. GOES is owned by the National Oceanic and Atmospheric Administration, which runs the National Weather Service, and it is able to cover both the Atlantic and Pacific

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Subtopic 2: Radar

Facts

coasts.

Radar, another method for tracking hurricanes, is used to detect rain within a 200- to 250-mile area along the coast. It provides an estimate of rainfall and shows the bands of rain in the hurricane. It also shows the eye and the eye wall. The eye wall is an organized band which surrounds the eye and consists of cumulonimbus clouds, intense rain, and strong winds. Scientists use this information to show the movement of hurricanes and the tornadoes that sometimes come with them.

Subtopic 3:  
Reconnaissance  
aircraft

Facts

Reconnaissance aircraft is perhaps the most exciting method for tracking hurricanes. Pilots from a special Air Force Reserve squadron actually fly directly into the eye of the hurricane in order to gather information on a storm's location and intensity. Sometimes they use a dropsonde to collect data about wind speed, direction, air pressure, and temperature. A dropsonde is a small tube with a parachute attached that is dropped into the hurricane from the plane. A radio transmitter sends data from the instruments inside the tube back to the plane. All information collected by the pilots is sent back to the

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Subtopic 4:  
Observation

Facts

National Hurricane Center in Miami, Florida.

Even with all of the technology available through radar, satellites, and aircraft, observation is still one of the methods used in tracking hurricanes today. Around 1900, the U.S. Weather Bureau created a national hurricane warning system. Information was passed on through weather stations in the West Indies, Cuba, and Mexico. Although information could be relayed about a storm's intensity, it was not helpful in tracking the storm. Later, the Weather Bureau added radio-equipped ships to help with observations. Today, there are data buoys in the Gulf of Mexico and on the Atlantic and Pacific coasts that send out radio signals to scientists. These signals give information on air temperature, water temperature, wind speed, air pressure, and wave conditions. This information helps scientists predict and monitor storms during hurricane season.

CONCLUSION

Statement of  
topic's  
importance

Satellites, Doppler radar, reconnaissance planes, and observations are all important methods of tracking hurricanes. Together, they provide scientists with the tools to predict accurately the path of a hurricane and to warn the public of its

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dangers.

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