**Title of Article:** Hurricanes

**Title of Document:** Science Weekly

**Volume/Issue Number:** 22.13

**Copyright Date:** Apr. 26, 2006

**Page Number:** 1

**Name of Database:** Kids Info Bits

**Hurricanes!**

If you stood right in the center of a hurricane, the air would be still and calm. If you looked up, you might see the sun shining and a few clouds floating by. This is called the eye of the hurricane.

But, walk 25 km in any direction and you will be entering the eyewall (eye-wall) of the hurricane. There, the winds blow as fast as a speeding car and can go higher than 300 km per hour. That's a strong enough wind to blow down buildings and large trees. How Do Hurricanes Start?

Hurricanes begin as storms over the ocean. They need warm air, so they always start in tropical (trop-i-cal) regions. Water from the ocean evaporates (e-vap-o-rates) into the warm air and is carried upward. When this water vapor rises high enough to bump into colder temperatures, it condenses (con-denses) into clouds. These clouds can reach 18 km into the sky.

How do these clouds turn into the terrible winds of a hurricane? Since the earth is rotating, the rising air molecules twist into a counterclockwise spiral (spi-ral) in the northern hemisphere and into a clockwise spiral in the southern hemisphere. As the water vapor condenses, it releases energy, causes the wind to move faster and faster, and creates a hurricane. In the Path of a Hurricane

Hurricanes may begin at sea, but they don't stay there. They are blown by the normal flow of wind from east to west. The spiraling motion of the hurricane adds to this movement making it difficult to predict when and where the storm will find land.

Not all the damage from a hurricane is caused by the wind. Since these storms begin over the ocean, they push along a wall of water as they move. This is called the storm surge. The storm surge can be high enough to wash away everything in its path. What can be done about Hurricanes?

In the 1940s and 1950s, scientists tried to seed storms. Extremely cold dry ice was dropped into the clouds of a hurricane. Scientists hoped that the water in the clouds would then turn to ice crystals and fall as snow or rain. These attempts ended in the 1970s.

The focus now is on predicting the paths of hurricanes so that people can move safely out of the way.

**DID YOU KNOW?**

* Most hurricanes occur between June 1 and November 30.
* Hurricanes are helpful by moving warm air to colder regions.
* How A Hurricane Forms:
  + Warm tropical ocean waters evaporate and spiral upwards.
  + Colder air rushes down, creating spiraling winds.
  + Clouds form above, swirling in a counterclockwise direction.

**Background**

Hurricanes have been much in the news during 2005 with images of floods, stranded people, and widespread destruction. By helping to explore the science behind hurricanes, students can both find a healthy respect for the potential damage caused by these storms and lessen the fear of a natural phenomenon that can be highly destructive.

How have people come to understand hurricanes? They have used one of the most important tools available to any scientist-observation! In 1821, William Redfield was studying the damage caused by a hurricane that came through Connecticut. He noticed that in the eastern part of the state, trees had fallen pointing northwest. In the western part of the state, the trees were pointing southeast.

Redfield decided that hurricanes were giant whirlwinds. Redfield was convinced that he was correct about hurricanes when he observed the same pattern 10 years later studying a hurricane that had hit in Barbados.

But, scientists do more than just observe. They try to draw conclusions from what they see. They form an hypothesis to explain their observations. Then they find ways to test that hypothesis. In the case of Redfield's study of hurricanes, he observed the damage from a second hurricane to see if the trees brought down in that hurricane had fallen in the pattern that he had predicted. They did!

Hurricanes are one way that nature moves heat energy around the world. The warmth from the tropics is carried to the northern and southern ends of the earth by hurricanes. In addition, seeds and insects are blown to new places.

Scientists want to understand hurricanes better. They want to be able to predict the movement of hurricanes so that people can be warned when such a storm is coming. A group of Air Force pilots, called the Hurricane Hunters, fly directly into hurricanes to gather information that scientists can study later. That must be a bumpy ride! But aren't we all glad that they are willing to do it?