Lesson Plan

Technology Timeline

Book: Detecting Hurricanes
Series: Detecting Disasters
Level: Navigator

Objective

To help students understand and explore the structure of a text, and to navigate through that structure to sequence events in chronological order.

Supplies

- *Detecting Hurricanes*
- Whiteboard
- Paper and pencils

Before the Activity

Read through the *Detecting Hurricanes* book, or assign it to students to read on their own.

Activity

Scientists today have several ways of detecting and predicting hurricanes. However, it has taken many years of technological development to reach this point. Today, students will create a timeline of the important dates in the history of how scientists study and detect hurricanes.

Ask students to re-read Chapter 3 ("Into the Storm") and Chapter 4 ("Going Higher-Tech") of *Detecting Hurricanes*. They should look for important dates mentioned in the text, such as any important events or changes in how scientists study and detect hurricanes. Students should write down these dates, as well as a brief description of what happened at that time. Remind students that the information in the chapters may not be in chronological order.

Next, draw a sample timeline on the whiteboard, using the following events:

- 2005: Hurricane Katrina has a storm surge that is 28 feet (8.5 m) high.
- 2008: Hurricane Ike moves more than 30 miles (48 km) inland.
- 2012: Hurricane Sandy hits the US coastline.

Ask students to use their list of important events to create a timeline. First, they should arrange the events in their list in chronological order. Next, they should use their notes to write a one-sentence description of each event. The descriptions should use present-tense verbs. Last, the students should draw a timeline and write out their descriptions. Remind them to

include both the date each event happened and their one-sentence description of the event on the timeline.

Evaluation
Using the attached answer key, give students 1 point for identifying each date and 1 point for writing an accurate one-sentence description, for a total of up to 24 points.

Standards
This lesson may be used to address the Common Core State Standards' reading informational texts standards, grade 4 (RI 4.3; 4.5).

Answer Key

1. **Early 1900s:** Airplanes observe weather and estimate wind speeds and direction based on the ocean's waves. (p. 16)
2. **1943:** Lieutenant Colonel Joseph Duckworth flies a plane into a hurricane. (p. 16)
3. **1945:** The US military creates the Hurricane Hunters after a storm hits Miami, Florida. (p. 16)
4. **1950s:** The US Weather Bureau starts sending research flights into hurricanes after four hurricanes (Carol, Edna, Hazel, and Diane) hit the United States. (p. 17)
5. **1953:** The United States starts using female names for hurricanes. (p. 18)
6. **1960:** The United States launches its first weather satellite, which photographs hurricanes from space. (p. 18)
7. **1970s:** Two WP-3D Orion aircraft are used for research. (p. 21)
8. **1979:** Hurricanes are named using both male and female names. (p. 18)
9. **1982:** The Hurricane Hunters use dropsondes for the first time. (p. 22)
10. **2006:** Scientists fly a UAV into Tropical Storm Ophelia. (p. 23)
11. **2007:** Scientists fly a UAV into Hurricane Noel. (p. 23)
12. **2016:** Planes have more scientific instruments, radars, and recording systems than ever before. (p. 22)