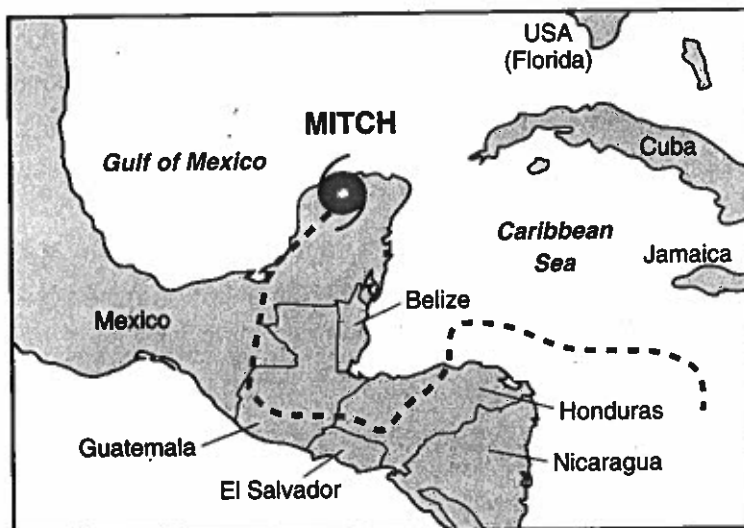


Social Studies Connection: Geography and Earth Science

Hurricane Mitch



Hurricane Mitch's destructive path

They're fast. They're powerful. They're a wonder of nature but a disaster for mankind. Depending on where you live, you call them cyclones, typhoons, or hurricanes. They are fierce storms that cause incredible damage. In the Western Hemisphere, we call them hurricanes.

One of recent history's worst hurricanes hit Central America in late October and early November of 1998. Hurricane Mitch was notable not only for its strength but also for the tremendous amount of death and destruction it caused. Some have called it the deadliest Atlantic hurricane since 1780. Hurricane Mitch killed over 10,000 people in Costa Rica, Nicaragua, Honduras, El Salvador, and Guatemala.

Hurricane Mitch was noteworthy for another reason. Instead of weakening after hit land, it gained strength! After passing over Mexico as a tropical depression, it strengthened to a tropical storm, moving east over the Gulf of Mexico and Florida.

Earth Science: Categories of Hurricanes

Hurricanes begin as tropical disturbances over warm tropical or subtropical seas. The storms gather strength and begin to spiral in a counter-clockwise direction. Almost all storms peak as a hurricane and then lose strength after they hit land. They end as a tropical storm or depression.

Four conditions must be present for a

hurricane to develop:

- Ocean or sea temperatures must be greater than 79° Fahrenheit or 26° Celsius.
- The air above the water must have a high relative humidity.
- The atmosphere above the water must be unstable.
- The weather system must be within 4 to 5 degrees above or below the Equator.

Use the information on the previous page and the chart to answer the questions below.

Categories of Tropical Weather Systems

| Type of System | Category | Damage | Pressure (mb) | Wind Speed (In mph) |
|---------------------|----------|--------------|---------------|---------------------|
| Tropical Depression | TD | | — | <39 |
| Tropical Storm | TS | | — | 39–73 |
| Hurricane | 1 | Minimal | >980 | 74–95 |
| Hurricane | 2 | Moderate | 965–980 | 96–110 |
| Hurricane | 3 | Extensive | 945–965 | 111–130 |
| Hurricane | 4 | Extreme | 920–945 | 131–155 |
| Hurricane | 5 | Catastrophic | <920 | >155 |

- ① According to the map, Hurricane Mitch passed directly over
 - (1) Jamaica.
 - (2) Belize.
 - (3) Honduras.
 - (4) Nicaragua.
 - (5) Cuba.
- ② Hurricane Mitch had winds that registered over 155 miles per hour. Based on the chart above, which category of hurricane was it?
 - (1) Minimal
 - (2) Moderate
 - (3) Extensive
 - (4) Extreme
 - (5) Catastrophic
- ③ Which condition could not be a factor in a developing hurricane?
 - (1) Water temperature of 28° Celsius in the Gulf of Mexico
 - (2) Cool, dry air above the Caribbean Sea
 - (3) A tropical storm off the coast of Belize
 - (4) Warm, moist air above the Caribbean Sea
 - (5) Water temperature of 81° Fahrenheit in the Gulf of Mexico
- ④ Tropical storms are given names even before they turn into hurricanes. Complete the chart below by categorizing each weather event according to the information used by scientists at the top of the page. The first entry has been done for you.

| Name | Type of System | Category | Pressure (mb) | Wind Speed (In mph) |
|---------|----------------|----------|---------------|---------------------|
| Alex | Tropical storm | TS | 1,000 | 45 |
| Georges | | | 938 | 130 |
| Ivan | | | 975 | 80 |
| Nicole | | | 985 | 75 |

Check your answers on page 233.