

Brandon Valley School District  
District Learning Plan  
April 27-May 1, 2020

Grade 6 Science



## Brandon Valley School District Distance Learning Plan

LESSON/UNIT: Natural Disasters

SUBJECT/GRADE: Science/6th

DATES: April 27- May 1



<p>What do students need to do?</p> <p><a href="#">Link to BV instructional video for week of April 27 - May 1, 2020</a></p>	<p>Monday (4/27):</p> <ul style="list-style-type: none"> <li>Read <i>Newsela article, What is a Hurricane?</i> and <b>ANSWER DOCUMENT</b></li> </ul> <p>Tuesday (4/28):</p> <ul style="list-style-type: none"> <li>Write a response on the <b>ANSWER DOCUMENT</b> about the <i>Newsela article, What is a Hurricane?</i></li> </ul> <p>Wednesday (4/29):</p> <ul style="list-style-type: none"> <li>Read the <b>HURRICANE MITIGATION ARTICLE</b></li> </ul> <p>Thursday (4/30) &amp; Friday (5/1)</p> <ul style="list-style-type: none"> <li>Complete the <b>HURRICANE SCENARIO</b> on the <b>ANSWER DOCUMENT</b></li> </ul>
<p>What do students need to bring back to school?</p>	<p>1. Submit your Answer Document</p> <p>Choose one way to submit from the list below</p> <ul style="list-style-type: none"> <li>Complete answer document by paper and pencil and submit to BVIS</li> <li>Complete answer document electronically through <b>GOOGLE CLASSROOM</b></li> </ul>
<p>What standards do the lessons cover?</p>	<p>MS-ESS2-4 Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.</p> <p>MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions</p> <p>MS-ESS2-6 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p> <p>MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects</p> <p>MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment</p>
<p>What materials do students need? What extra resources can students use?</p>	<p>Need:</p> <ol style="list-style-type: none"> <li>Reading Passages Worksheet (PDF or Online)</li> <li>Answer Document (PDF or on Google Classroom)</li> <li>Paper and Pencil</li> </ol> <p>Extra: <a href="https://www.ready.gov/hurricanes">https://www.ready.gov/hurricanes</a></p>
<p>What can students do if they finish early?</p>	<p><b>Optional- Natural Disaster Research Project</b></p> <ol style="list-style-type: none"> <li>Create a family evacuation plan</li> <li>Create a family protection plan</li> <li>Create a family emergency kit</li> </ol> <p>Website for more information- <a href="https://www.ready.gov/be-informed">https://www.ready.gov/be-informed</a></p>

Who can we contact if we have questions?	<b>Brandon Valley Intermediate School</b> <b>Principal-</b> Mr. Skibsted- <a href="mailto:Nick.Skibsted@k12.sd.us">Nick.Skibsted@k12.sd.us</a> <b>Assistant Principal-</b> Mr. Pearson- <a href="mailto:Rick.Pearson@k12.sd.us">Rick.Pearson@k12.sd.us</a> <b>Science Teachers:</b> Mr. Putnam- <a href="mailto:Mike.Putnam@k12.sd.us">Mike.Putnam@k12.sd.us</a> (blue team) Ms. Grieve- <a href="mailto:Tami.Grieve@k12.sd.us">Tami.Grieve@k12.sd.us</a> (silver team) Ms. Schindling- <a href="mailto:Kayla.Schindling@k12.sd.us">Kayla.Schindling@k12.sd.us</a> (red team) Mr. VanHeel- <a href="mailto:Jeremy.VanHeel@k12.sd.us">Jeremy.VanHeel@k12.sd.us</a> (white team)
<b>Notes:</b> Please contact your teachers if you have any questions. Stay safe and healthy.	

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***Instructional materials are posted below (if applicable)***

*Brandon Valley School District*

# What is a hurricane?

By NASA.gov, adapted by Newsela staff on 10.11.16

Word Count **824**

Level **1010L**



TOP: On October 4, 2016, Hurricane Matthew hit Haiti as a Category 4, with winds of 130 to 156 mph — the strongest storm to hit the Caribbean nation in more than 50 years. Just hours after landfall, NASA's Terra satellite took this image. BOTTOM: In 2010, astronauts on the International Space Station took this photo of the eye of Hurricane Ivan. NASA.gov

Hurricanes are large, swirling storms with strong winds. Hurricanes can blow up to 119 kilometers (km) per hour (74 miles per hour) or higher. That's faster than a cheetah, the fastest animal on land.

The storms form over warm ocean waters and sometimes strike land. When a hurricane reaches land, it pushes a wall of ocean water ashore. This wall of water is called a storm surge. Along with heavy rain, it can cause flooding, especially near the coast.

Once a hurricane forms, weather forecasters predict its path and how strong it will get. This information helps people prepare for the storm before it arrives.

## How Are Hurricanes Categorized?

A hurricane is categorized by its wind speed using the Saffir-Simpson Hurricane Scale.

Category 1: Winds 119 to 153 km per hour (74 to 95 mph) — faster than a cheetah

Category 2: Winds 154 to 177 km per hour (96 to 110 mph) — as fast as or faster than a baseball pitcher's fastball

Category 3: Winds 178 to 208 km per hour (111 to 129 mph) — similar, or close, to the serving speed of many professional tennis players

Category 4: Winds 209-251 km/hr (130 to 156 mph) — faster than the world's fastest rollercoaster

Category 5: Winds more than 252 km pr hour (157 mph) — similar, or close, to the speed of some high-speed trains

### What Are the Parts Of A Hurricane?

**Eye:** The eye is the "hole" at the center of the storm. Winds in the eye are light and skies are only partly cloudy, sometimes even clear.

**Eye wall:** The eye wall is a ring of thunderstorms swirling around the eye. The wall is where winds are strongest and rain is heaviest.

**Rain bands:** Spiral bands of clouds, rain and thunderstorms extend out from a hurricane's eye wall. These bands stretch for hundreds of miles and sometimes contain tornadoes.

### How Does A Storm Become A Hurricane?

A hurricane starts out as a tropical disturbance. This is an area over warm ocean waters where rain clouds are building. A tropical disturbance sometimes grows into a tropical depression. This area of rotating thunderstorms has winds of 62 km per hour (38 mph) or less. A tropical depression becomes a tropical storm if its winds reach 63 km per hour (39 mph). A tropical storm becomes a hurricane if its winds reach 119 km per hour (74 mph).

### What Makes Hurricanes Form?

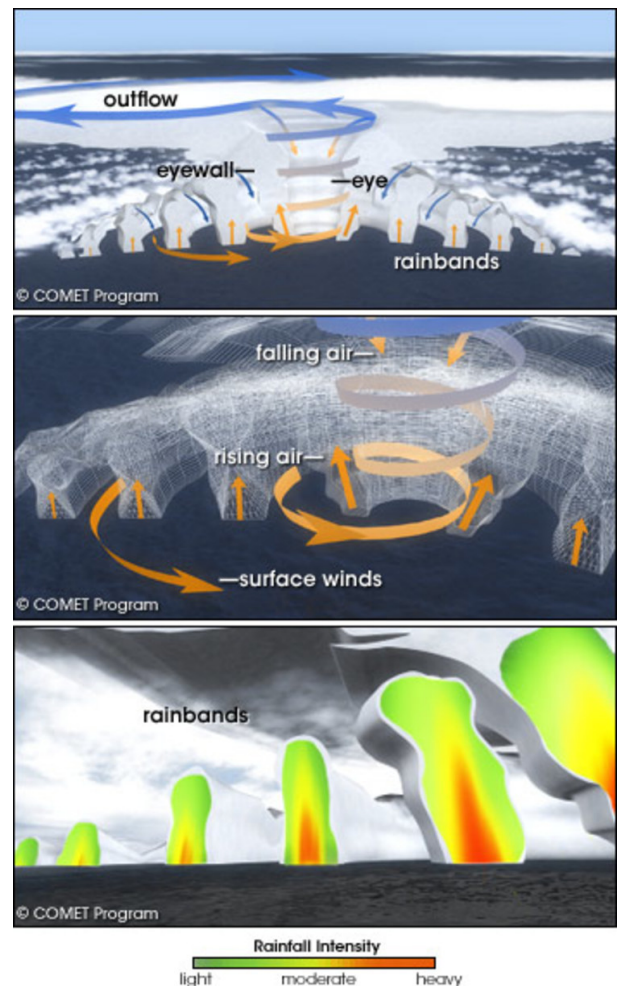
Scientists don't know exactly why or how a hurricane forms. But they do know that two main ingredients are necessary. First, hurricanes need warm water, and second, they need winds that have the same direction and speed as they rise higher in the atmosphere.

Warm ocean waters provide the energy needed for a storm to become a hurricane.

### How Are Hurricanes Named?

Hurricanes are named, because more than one may exist at the same time. Names also make it easier to keep track of and talk about storms.

A storm is given a name if it becomes a tropical storm. That name stays with the storm if it goes on to become a hurricane.





Each year, tropical storms are named in alphabetical order as they occur. Matthew is a huge, devastating hurricane that struck in October 2016. Before Matthew was Hurricane Lisa. After Matthew is Hurricane Nicole.

There are six lists of names. Each year starts with the next list. The same lists are reused every six years. Names of storms that are very deadly or do much damage are removed from the lists and replaced with new names.

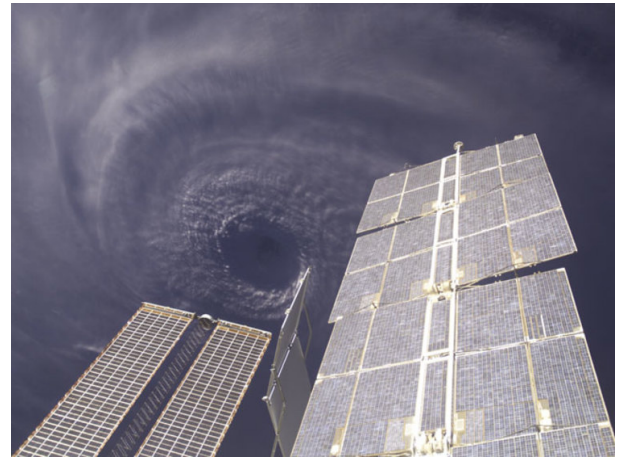
### **How Does NASA Study Hurricanes?**

NASA satellites take pictures of hurricanes from space. NASA scientists collect information on clouds, rainfall, wind and the temperature at the oceans' surface. It helps them understand how hurricanes form and get stronger. The data also helps weather forecasters predict the path and strength of hurricanes.

Did you know that dust storms from Africa might affect hurricanes? NASA's Terra and Aqua satellites have a tool that tracks dust coming off of Africa. It helps scientists study the effects of dust on the way hurricanes form and get stronger.

NASA research aircraft fly into and above hurricanes to gather information about the storm. NASA has also flown an unmanned aircraft into areas of a hurricane that are too dangerous for manned aircraft.

NASA has also created computer animations of hurricanes using information about rain, wind and temperature from satellites. They help forecasters better predict storm damage.



### **How Will NASA Study Hurricanes In The Future?**

NASA is developing several ways to help scientists better understand hurricanes.

One of them is the Hurricane Imaging Radiometer. It will be carried by an airplane or satellite. It will see through a hurricane's heaviest rains and thickest clouds to measure strong winds at the ocean surface.

NASA is forming a hurricane science team. They will use NASA satellites and data to study hurricanes.

## **Hurricanes**

*View additional storm surge PSAs from link below in Associated Content*

Hurricanes are massive storm systems that form over warm ocean waters and move toward land. Potential threats from hurricanes include powerful winds, heavy rainfall, storm surges, coastal and inland flooding, rip currents, tornadoes, and landslides. The Atlantic hurricane season runs from June 1 to November 30. The Pacific hurricane season runs May 15 to November 30. Hurricanes:

- Can happen along any U.S. coast or in any territory in the Atlantic or Pacific oceans.
- Can affect areas more than 100 miles inland.
- Are most active in September.

### **IF YOU ARE UNDER A HURRICANE WARNING, FIND SAFE SHELTER RIGHT AWAY**

- Determine how best to protect yourself from high winds and flooding.
  - Evacuate if told to do so.
  - Take refuge in a designated storm shelter, or an interior room for high winds.
- Listen for emergency information and alerts.
- Only use generators outdoors and away from windows.
- Turn Around, Don't Drown! Do not walk, swim, or drive through flood waters.

## **Storm Surge**

Storm surge is water from the ocean that is pushed toward the shore by the force of the winds swirling around a hurricane. Storm surge is fast and can produce extreme coastal and inland flooding. When hurricanes cause storm surge, over 20 feet of water can be produced and pushed towards the shore and several miles inland destroying property and endangering lives in its path.

## **Be Informed**

- Storm surge is historically the leading cause of hurricane-related deaths in the United States.
- Water weighs about 1,700 pounds per cubic yard, so battering waves from surge can easily demolish buildings and cause massive destruction along the coast.

- Storm surge undermines roads and foundations when it erodes material out from underneath them.
- Just one inch of water can cause \$25,000 of damage to your home. Homeowners and renter's insurance do not typically cover flood damage.

## **Prepare NOW**

- Know your area's risk of hurricanes.
- Sign up for your [community's warning system](#). The Emergency Alert System (EAS) and National Oceanic and Atmospheric Administration (NOAA) Weather Radio also provide emergency alerts.
- If you are at risk for flash flooding, watch for warning signs such as heavy rain.
- Practice going to a safe shelter for high winds, such as a FEMA safe room or ICC 500 storm shelter. The next best protection is a small, interior, windowless room in a sturdy building on the lowest level that is not subject to flooding.
- Based on your location and community plans, make your own plans for evacuation or sheltering in place.
- Become familiar with your evacuation zone, the evacuation route, and shelter locations.
- Gather needed supplies for at least three days. Keep in mind each person's specific needs, including medication. Don't forget the needs of pets.
- Keep important documents in a safe place or create password-protected digital copies.
- Protect your property. Declutter drains and gutters. Install check valves in plumbing to prevent backups. Consider hurricane shutters. Review insurance policies.

## **When a hurricane is 36 hours from arriving**

- Turn on your TV or radio in order to get the latest weather updates and emergency instructions.
- Restock your emergency preparedness kit. Include food and water sufficient for at least three days, medications, a flashlight, batteries, cash, and first aid supplies.
- Plan how to communicate with family members if you lose power. For example, you can call, text, email or use social media. Remember that during disasters, sending text messages is usually reliable and faster than making phone calls because phone lines are often overloaded.



- Review your evacuation zone, evacuation route and shelter locations. Plan with your family. You may have to leave quickly so plan ahead.
- Keep your car in good working condition, and keep the gas tank full; stock your vehicle with emergency supplies and a change of clothes.
- If you have NFIP flood insurance, your policy may cover up to [\\$1000 in loss avoidance measures](#), like sandbags and water pumps, to protect your insured property. You should keep copies of all receipts and a record of the time spent performing the work. They should be submitted to your insurance adjuster when you file a claim to be reimbursed.

### **When a hurricane is 18-36 hours from arriving**

- Bookmark your city or county website for quick access to storm updates and emergency instructions.
- Bring loose, lightweight objects inside that could become projectiles in high winds (e.g., patio furniture, garbage cans); anchor objects that would be unsafe to bring inside (e.g., propane tanks); and trim or remove trees close enough to fall on the building.
- Cover all of your home's windows. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8" exterior grade or marine plywood, cut to fit and ready to install.

### **When a hurricane is 6-18 hours from arriving**

- Turn on your TV/radio, or check your city/county website every 30 minutes in order to get the latest weather updates and emergency instructions.
- Charge your cell phone now so you will have a full battery in case you lose power.

### **When a hurricane is 6 hours from arriving**

- If you're not in an area that is recommended for evacuation, plan to stay at home or where you are and let friends and family know where you are.
- Close storm shutters, and stay away from windows. Flying glass from broken windows could injure you.
- Turn your refrigerator or freezer to the coldest setting and open only when necessary. If you lose power, food will last longer. Keep a thermometer in the refrigerator to be able to check the food temperature when the power is restored.
- Turn on your TV/radio, or check your city/county website every 30 minutes in order to get the latest weather updates and emergency instructions.

## **Survive DURING**

- If told to evacuate, do so immediately. Do not drive around barricades.
- If sheltering during high winds, go to a FEMA safe room, ICC 500 storm shelter, or a small, interior, windowless room or hallway on the lowest floor that is not subject to flooding.
- If trapped in a building by flooding, go to the highest level of the building. Do not climb into a closed attic. You may become trapped by rising flood water.
- Listen for current emergency information and instructions.
- Use a generator or other gasoline-powered machinery outdoors ONLY and away from windows.
- Do not walk, swim, or drive through flood waters. Turn Around. Don't Drown! Just six inches of fast-moving water can knock you down, and one foot of moving water can sweep your vehicle away.
- Stay off of bridges over fast-moving water.

## **Be Safe AFTER**

- Listen to authorities for information and special instructions.
- Be careful during clean-up. Wear protective clothing and work with someone else.
- Do not touch electrical equipment if it is wet or if you are standing in water. If it is safe to do so, turn off electricity at the main breaker or fuse box to prevent electric shock.
- Avoid wading in flood water, which can contain dangerous debris. Underground or downed power lines can also electrically charge the water.
- Save phone calls for emergencies. Phone systems are often down or busy after a disaster. Use text messages or social media to communicate with family and friends.
- Document any property damage with photographs. Contact your insurance company for assistance.

**Tuesday, April 28 (Short Answer Response)- NEWSLA- What is a Hurricane?**

Directions- Write a short paragraph that explains the central idea of the article. Use at least two details from the article to support your response. Make sure to use capital letters, punctuation, and complete sentences. Your answer should be one paragraph long.

**Thursday, April 30 and Friday, May 1 (Hurricane Scenario)**

<p><b>DIRECTIONS</b></p>	<p><i>You are the Mayor of Brandon Georgia (31°N and 82°W) and at 6:00am you receive word that there is a hurricane in the Atlantic Ocean near the Bahamas. Your goal is to help mitigate the hurricane by using a prevention plan. Complete the sheet below. Complete each row or situation in order. Do not jump ahead.</i></p> <p><i>Track the hurricane on the TRACKING DOCUMENT and write your prevention and protection plan for that given moment.</i></p> <p><i>REMEMBER there may be consequences for every decision you make. Discuss your choices with a family member.</i></p>	
<p><b>Time/Date/ Location</b></p>	<p><b>Information</b></p>	<p><b>Prevention/Protection Plan</b></p>
<p><b>6:00 AM September 3rd 20°N and 65°W</b></p>	<p><i>A tropical storm has just reached over 75 mph and is picking up speed. This tropical storm has now become a hurricane. Hurricane VanHeezy is looking like it will hit the Bahamas, Florida, Georgia, and other lower states. The National weather service is placing a Hurricane warning for</i></p>	

	<i>the Bahamas.</i>	
<b>6:00 P.M. September 3 22°N and 70°W</b>	<i>Hurricane VanHeezy is picking up speed and power. It is headed straight for the Bahamas. The hurricane warning for the Bahamas was correct since it swept over the island.</i>	
<b>6:00 A.M. September 4 24°N and 75°W</b>	<i>Hurricane VanHeezy is advancing rapidly northward. Speeds near the eye have been reported to be close to 150 mph (241 km/h).</i>	
<b>6:00 P.M. September 4 27°N and 79°W</b>	<i>The eye of the hurricane sits just off the coast of Florida. Mass destruction is occurring along the coastal areas. Forecasters are not sure of the direction the hurricane will take from here since hurricanes become unstable when they approach land.</i>	
<b>6:00 A.M. September 5 31° N and 81° W</b>	<i>Hurricane VanHeezy has taken an abrupt turn northward and has avoided central Florida. It is still over the ocean and its eye is centered near the border between Florida and Georgia. Forecasters are fairly certain the hurricane will continue in its northerly path, as it is beginning to die down.</i>	
<b>6:00 P.M. September 5 34° N and 77° W</b>	<i>North Carolina is feeling Hurricane VanHeezy. It looks as though the forecasters were right; the hurricane is continuing up the coast, but the land is slowing it down rapidly. Winds still beat against the coastline.</i>	

<b>6:00 A.M. September 6 37° N and 75° W</b>	<i>Hurricane VanHeezy is dying down off the coast of Virginia this morning. Rains are striking the coastline, but the fierce winds which struck the Bahamas and Florida are now gone. Forecasters have downgraded the hurricane to a tropical depression. The worst is over!</i>	

**Conclusion:**

How did you do?

What is something you can take away from this experiment?



## Tracking a Hurricane (cont.)

