

Level 1 (grades 5 and up)

# ree mple About Hurricanes Includes

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Level 1, 2024/2025: Issue 3

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"

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> K. Camelon, Grade 7/8 teacher Admaston, ON



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#### WHAT IN THE WORLD? • SAMPLE



GRY HURRICANES RAVAGE THE U.S.

Two massive storms cause death and destruction

#### **BEFORE READING**

INTERNATIONAL

1. Scroll through the photos found at the following links, allowing 10-15 seconds per image for students to take in what they are seeing:

Hurricane Helene:

https://www.theatlantic.com/photo/2024/09/photos-aftermath-hurricane-helene/680080/

Hurricane Milton:

https://www.npr.org/sections/the-picture-show/2024/10/10/g-s1-27291/photos-hurricane-milton-slams-florida

2. Ask students to view each image in silence, jotting down one or two photos that resonate with them.

3. Make images available for students to review and analyse.

4. Invite students to write a reflection alone or with a partner, or to have a discussion about what they see in the image(s) and what they wonder about what's next as it relates to their chosen photo(s).

5. Finally, invite students to set a purpose for reading the article, referring to the resource page **Setting A Purpose Before Reading** as needed.

# ANGRY HURRICANES RAVAGE THE U.S. - Two massive storms cause death and destruction



Two raging storms, Hurricane Helene and Hurricane Milton, recently walloped the Southeastern United States. They caused at least 260 deaths and changed many lives forever.

#### HELENE ROARS TO LIFE

Helene, the first to strike, developed over warm waters in the Caribbean Sea west of Jamaica. The sleeping monster first awoke on September 23. as a tropical storm. It caused floods and mudslides across western Cuba. On September 25, it grew to Category 1 status. Its winds reached between 119 and 153 kilometres per hour. It then lashed Mexico's Yucatan Peninsula, churning up beaches and flooding tourist spots.

That was bad enough. But Helene was just revving up. **Meteorologists** watched it gain strength, and became concerned. They knew a true monster was on its way. Officials issued dire warnings. They advised residents to brace for severe flooding and catastrophic wind damage. People in the storm's path were urged to evacuate. A **state of emergency** was declared.

#### **RIPPED APART**

Strong winds and a big **storm surge** battered many towns as the storm moved up Florida's west coast. It made landfall in the **Florida Panhandle** on September 26 as a Category 4 storm. This powerful wrecking machine had winds reaching 220 kilometres per hour. It tore through coastal communities, ripping roofs from houses. It sent debris flying through the air like missiles. Tens of thousands of homes and businesses were obliterated. Entire towns were destroyed, roads disappeared and massive trees were uprooted.

The next day Helene travelled inland. It was downgraded to a tropical storm. Yet its impact was still hugely destructive. It slammed into Tennessee, Georgia, North Carolina, South Carolina, and Virginia. It unleashed trillions of litres of rain—enough to fill 60 million Olympic size swimming pools. Rivers swelled beyond their banks, swallowing entire neighborhoods. In hilly areas the deluge triggered deadly landslides that buried homes and blocked escape routes.

Tragically, over 230 people lost their lives. Many drowned in rising floodwaters. Others

#### DEFINITIONS

**FLORIDA PANHANDLE**: region in northwest part of Florida **METEOROLOGIST**: a scientist who studies the earth's atmosphere and its changes

**STATE OF EMERGENCY**: a sudden serious and dangerous event or situation which needs immediate action to deal with it

**STORM SURGE**: an unusual, often destructive rise in sea level in a coastal area, caused by low atmospheric pressure and strong winds



perished when buildings collapsed or vehicles were swept away. Helene had a 800-kilometre reach. So even many inland areas typically safe from storms were severely affected.

Jim Bourdy watched his house wash away. Everything he had was destroyed. But he and his wife were safe.

"The moment we reached high ground, I knew that the only two things that matter in my life are my wife and my dog," he said.

Helene was the deadliest hurricane to hit the U.S. since Hurricane Maria. Maria struck Puerto Rico in 2017, killing 2975.

#### **RECOVERY EFFORTS**

U.S. President Joe Biden quickly mobilized federal resources. Federal Emergency Management Agency (FEMA) teams arrived, providing aid to those in need. Volunteers from across the U.S. traveled to hard-hit areas. They brought food, water, and supplies. Some 6300 **National Guard** members descended on the region. They worked alongside thousands of other workers, soldiers, and search-and-rescue teams.

Hydro crews from neighbouring states and Canada were sent to restore power. Damage was estimated at \$53 billion (US). The clean-up could take years.

Access was cut off to some areas. Aid, food and water had to be delivered by air or on mules.

Health risks remained high three weeks after Helene. Some nursing homes had no running water. Toxic debris in water systems forced many people who did have water to boil it.

#### A ONE-TWO PUNCH

Communities were still reeling from Helene when a new threat emerged. Hurricane Milton rapidly intensified over the Gulf of Mexico. It quickly transformed from a tropical depression into a beast. Forecasters feared it would hit land as a Category 5—the highest hurricane level. But it decreased to a Category 3 before landfall. Still, when Milton slammed into Florida's west coast just south of Tampa on October 9, it had sustained winds of 190plus kilometres per hour. The impact was devastating. At least 30 people died as a result of Milton's fury.

### NO POWER, NO HOMES

The tempest's powerful **eyewall** battered the area just south of Tampa Bay. Storm surges pushed walls of water onto coastal neighbourhoods. Winds

toppled trees and power lines across wide parts of Florida. The hurricane triggered dozens of tornadoes, heavy rainfall, and eight-metre waves. At least three million Floridians lost electricity. Parts of Tennessee, Louisiana, and Mississippi were also hit. Some 125 homes, mainly mobile residences in senior living communities, were wiped out. Damage from this storm was estimated at \$100 billion (US).

Milton struck many areas already ravaged by the first hurricane. Debris from Helene became dangerous projectiles in Milton's winds. Drenched ground caused mudslides.

Worse, emergency resources were stretched thin after Helene. Many roads, bridges and power lines had not been repaired. Many shelters, hotels, and rental properties were already full.

### THE HEALING BEGINS

Families are beginning to reclaim their lives and towns will rebuild. The storms tested limits. But they also revealed people's strength.

"Asheville will be forever changed," said Jeremy Chassner of his North Carolina community "but the beautiful thing is that . . . we're determined to rebuild." ★

DEFINITIONS

**EYEWALL**: the area of extreme turbulence immediately surrounding the eye of a storm

**NATIONAL GUARD**: a military reserve force recruited and maintained by each U.S. state



#### COMPREHENSION QUESTIONS

1. Describe where and how Hurricane Helene formed in late September.

2. How powerful was this storm when it reached the U.S.? Where and when did it make landfall?

4. Describe Helene's impact as it continued inland.

5. Describe the relief efforts that occurred after this storm hit.

6. Describe where and how Hurricane Milton formed in early October.

7. Where and when did this storm make landfall? How powerful was it when it reached the U.S.?

8. Describe this storm's impact on the U.S. mainland.

9. Why did the weaker of the two storms cause more damage? Explain.



#### QUESTIONS FOR FURTHER THOUGHT

1. Esther Manheimer, mayor of Asheville, North Carolina said after Hurricane Helene: "*It really feels like a post-apocalyptic scene in some TV show.*" What do you think she means by this? Give examples to support your ideas.

2. The article also quotes Jim Bourdy, a North Carolina resident who, along with his wife, Allie, watched their house wash away in the rising floodwaters. After being rescued by a friend in a kayak, he said: "*The moment we reached high ground, I knew that the only two things that matter in my life are my wife and my dog.*"

As you see it, how do devastating events like these hurricanes change people's perspectives? Why? Give reasons to support your response.

3. Jeremy Chassner, co-owner of a brewery in a North Carolina community hit by Helene, had this to say about his town: "*Asheville will be forever changed but the beautiful thing about our community is that it's filled with small business owners that started out the same way we did. We're determined to rebuild.*"

What does this quote tell you about the residents of Asheville? What concerns might they have about rebuilding? Explain.



#### QUESTIONS FOR ONLINE EXPLORATION

*Note*: The links below are listed at **www.lesplan.com/links** for easy access.

 Check out the path of Hurricane Helene: https://www.yout-ube.com/watch?v=V59N\_gThgTI [0:37]

2. Learn about the extent of the damage caused by Hurricane Helene: https://www.bbc.com/news/videos/cq5ejq4z41vo [1:39] https://www.yout-ube.com/watch?v=MGkrW3GhcIM [2:06] https://uploads.guim.co.uk/2024/10/01/241001HeleneLoop\_2.mp4 [0:23]

What questions do you have?

3. Recovery efforts are ongoing for victims of Helene: https://www.yout-ube.com/watch?v=DMRfoI9kFuY [5:45] https://www.youtube.com/watch?v=hkDrjvqDj2g [2:11]

4. Check out the path of Hurricane Milton: https://www.yout-ube.com/watch?v=iOl18RzW5Eg [1:45]

5. Learn about the extent of the damage caused by Hurricane Milton: https://www.yout-ube.com/watch?v=ueAuyHDEqQQ&t=36s [6:44] https://www.yout-ube.com/watch?v=AsNvdujMmTI [8:40] https://www.yout-ube.com/watch?v=ShWUa5C87p4 [1:00]

What questions do you have?

6. Recovery efforts are ongoing for victims of Milton: https://www.yout-ube.com/watch?v=aGbHKKPoiN8 [8:34]

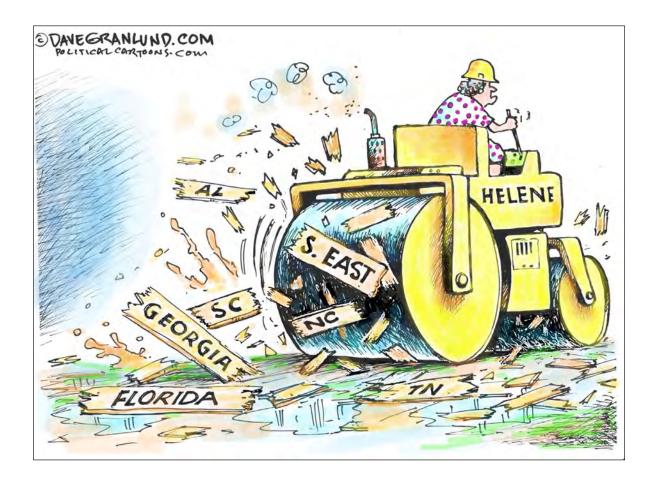
7. Check out trackers and alerts for the 2024 hurricane season: https://www.theweathernetwork.com/explore/hurricane

What did you learn?

8. Explore these facts about hurricanes and how to prepare for them: https://www.redcross.ca/how-we-help/emergencies-and-disasters-in-canada/types-of-emergencies/ hurricanes/hurricanes-information-facts

LEVEL 1 · NO. 3





#### YOUR TASK:

Examine the editorial cartoon, then answer the following questions on a separate piece of paper:

- 1. What do you *already know* about the impact of Hurricane Helene? Explain.
- 2. Describe what you *see* and *read* in the cartoon.
- 3. As you see it, what might the cartoonist be saying about the impact of Hurricane Helene? Explain.
- 4. For what reasons do you agree with the cartoonist? For what reasons do you disagree? Explain. 🖈



**Imagining a Before and After**: Draw (or write) about what you imagine happened right before this scene and what is likely to happen next. A plausible prediction builds on details in the photograph, explains the context (why the event happened), is believable, and includes all 5Ws. A likely conclusion builds on details in the photograph, is logical and believable, and includes all 5Ws.





(AP Photo/Mike Carlson)

After

Prepared with assistance from TC<sup>2</sup>, The Critical Thinking Consortium. © 2024

WHAT IN THE WORLD? • SAMPLE



NGRY HURRICANES RAVAGE THE U.S.

- Two massive storms cause death and destruction

#### INFOGRAPHIC

INTERNATIONAL



LEVEL 1 · NO. 3

WHAT IN THE WORLD? • SAMPLE

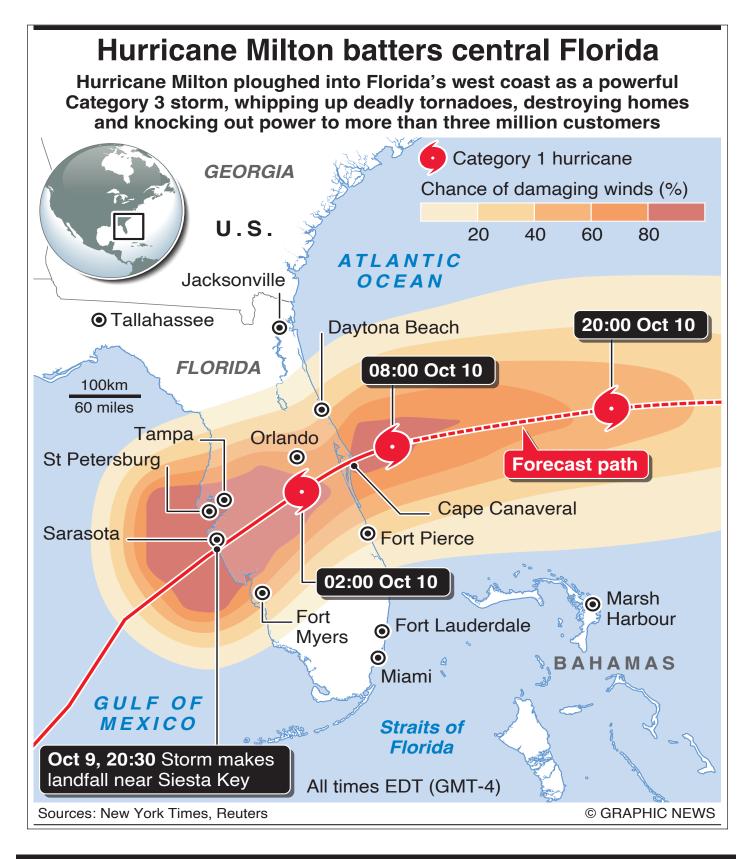


NGRY HURRICANES RAVAGE THE U.S.

- Two massive storms cause death and destruction

#### INFOGRAPHIC

INTERNATIONAL



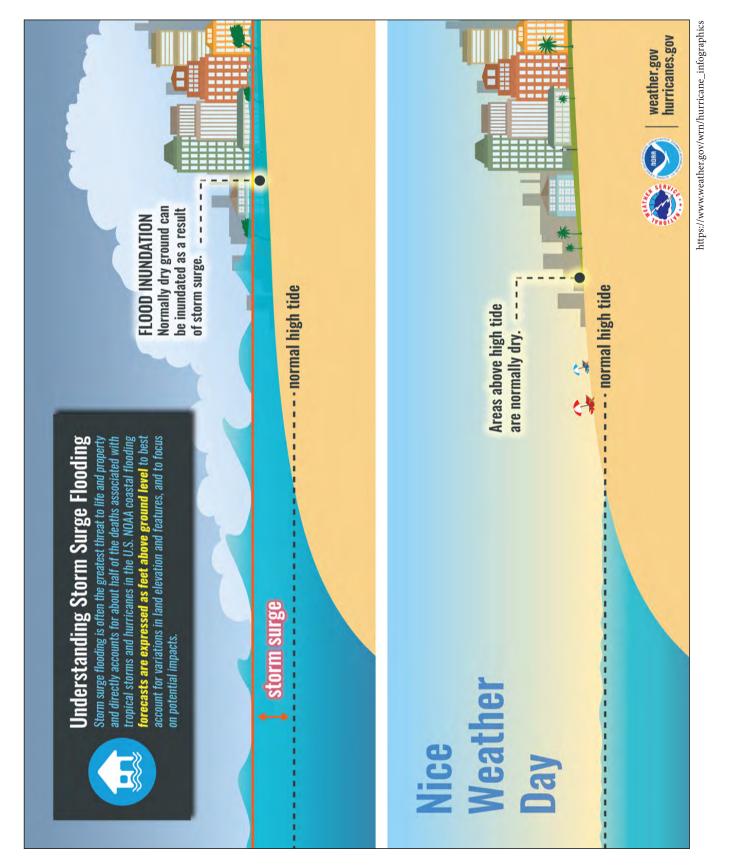


International **IGRY HURRICANES RAVAGE THE U.S.** 

MASSIVE STORMS CAUSE DEATH AND DESTRUCTION Two

#### INFOGRAPHIC

1

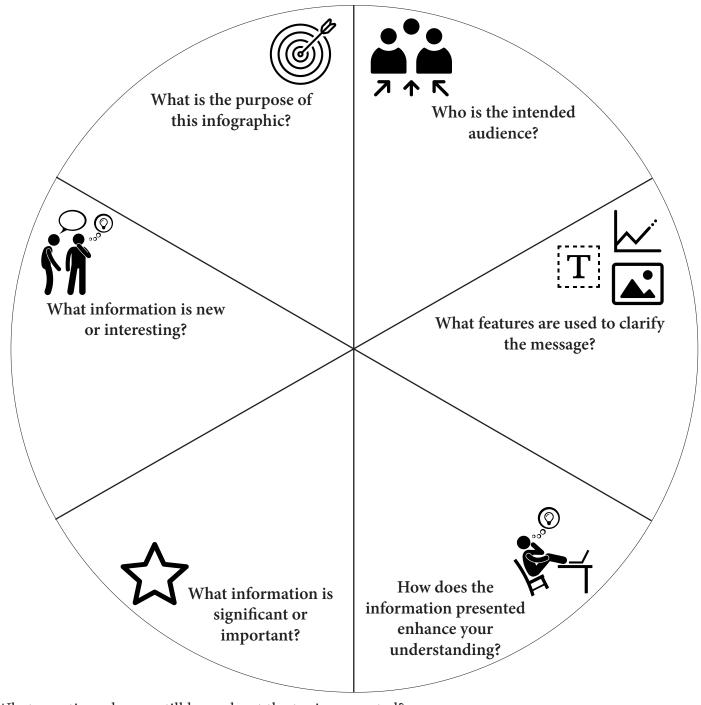


ANGRY H

ANGRY HURRICANES RAVAGE THE U.S.

Two massive storms cause death and destruction

#### ANALYZING AN INFOGRAPHIC



What questions do you still have about the topic presented?



Complete this map assignment to better understand the article Angry Hurricanes Ravage the U.S.

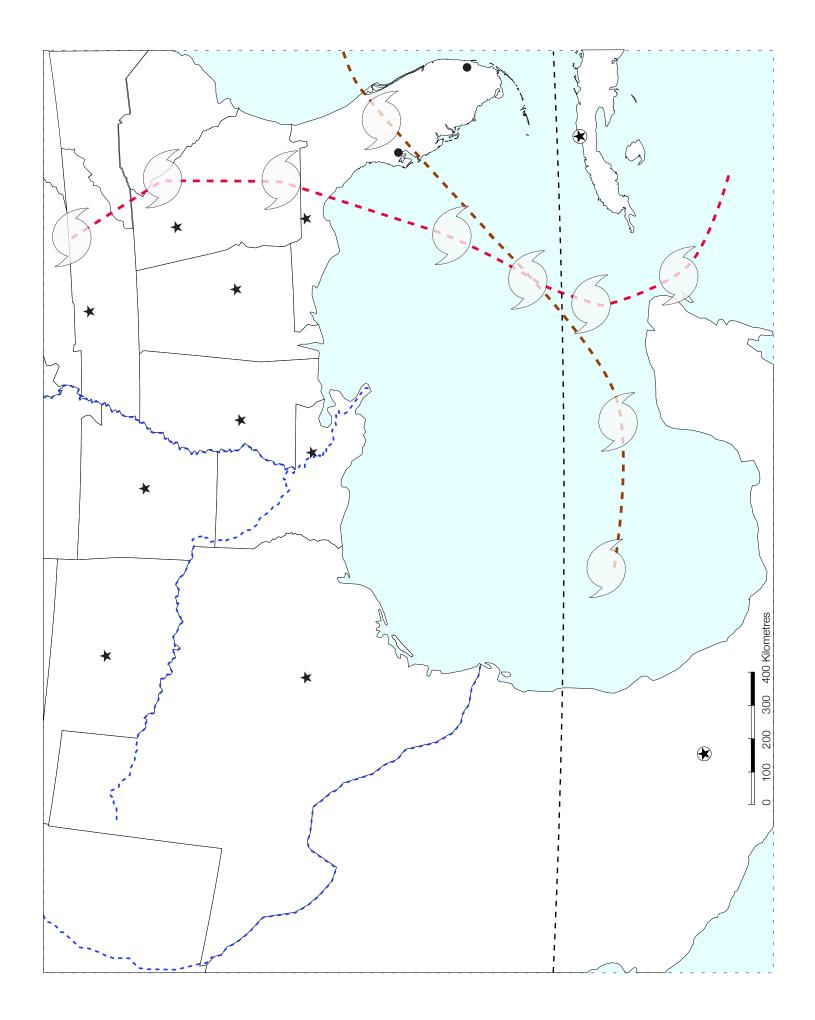
#### INSTRUCTIONS

1. Obtain the required resource	s and read <u>all</u> the instructions be	fore starting.
2. Colour your map <u>after</u> all lab	elling is completed.	
3. Print in pencil only first, ther	n go over the printing in black in	k.
4. Work carefully and neatly.		
Resources Required: pencil, bla	ack pen, pencil crayons, ruler, er	aser and an atlas.
Part A Locate and label the fol	lowing U.S. states in CAPITAL le	etters and shade each as indicated:
Florida (orange) Tennessee (pink) Arkansas (red)	Georgia (brown) Mississippi (green) Oklahoma (brown)	Alabama (purple) Louisiana (orange) Texas (pink)
<b>Part B</b> Locate and label the cap	ital of each state and <u>underline</u> e	ach city name.
Part C Locate and label the foll	owing U.S. states in CAPITAL le	tters and shade each as indicated:
New Mexico (yellow) North Carolina (green)	Missouri (orange) South Carolina (orange)	Kentucky (yellow)
Part D Locate and label the foll	owing countries in CAPITAL let	tters and shade each as indicated:
Mexico (green)	Cuba (red)	
Part E Locate and label the cap	ital of each country and <u>underlin</u>	<u>1e</u> each city name.
Part F Locate and label the follo	owing cities in Florida:	
Miami	Tampa	
Part G Locate and label the foll	owing and shade all ocean water	dark blue:
Gulf of Mexico	Yucatan Channel	Atlantic Ocean
Part H Locate and label the foll	owing rivers and shade them lig	ht blue:
Mississippi River	Red River	Rio Grande
Part I Locate and label the path	hs of Hurricane Helene and Hur	ricane Milton.
<b>Part J</b> Locate and label the Tro	pic of Cancer (23° N).	
Part K Shade all remaining ter	ritory grey.	
Part L Complete your map wit	h a frame, title, and compass. ★	Storm Hurricane

Florida

Warning Flags

Warning Flag



ANGRY HURRICANES RAVAGE THE U.S.

- Two massive storms cause death and destruction

#### PUTTING IT ALL TOGETHER

INTERNATIONAL

A. Write the letter that corresponds to the <u>best</u> answer on the line beside each question:

- 1. What is the most severe hurricane category?

   a) Category 3
   b) Category 5
   c) Category 10
   d) Category X

   2. Which federal U.S. disaster agency helped U.S. residents recover from the two storms?

   a) FBI
   b) NASA
   c) FEMA
   d) CIA
  - a) in the Florida Panhandleb) just south of Tampac) close to Mexicod) just north of Miami

B. Mark the statements T (True) or F (False). If a statement is <u>True</u>, write one important fact to support it on the line below. If a statement is <u>False</u>, write the words that make it true on the line below.

\_\_\_\_\_ 4. True or False? Hurricane Helene only caused damage in Florida.

5. True or False? Hydro crews from other U.S. states travelled to Florida to help restore power.

6. **True** or **False?** Both Milton and Helene made landfall as Category 3 hurricanes.

C. Fill in the blanks to complete each sentence.

7. The area of extreme turbulence around the eye of a storm is called the \_\_\_\_\_\_.

8. Storm \_\_\_\_\_\_ is an unusual, often destructive rise in sea level in a coastal area.

9. Over 6000 National \_\_\_\_\_\_ members assisted with storm relief efforts.

D. Respond to the following question in paragraph form. (Use a separate sheet of paper if necessary.)

10. Many Canadians have vacationed or moved to Florida to retire. What advice would you give to someone thinking of travelling or retiring there now? Give reasons to support your response.



Science, Technology, and the Environment ALL ABOUT HURRICANES

#### – NATURE'S FIERCEST STORMS BEFORE READING

1. Write the word "hurricane" on the board.

2. Distribute stickie notes to small groups. Have students spend two minutes individually brainstorming what they know about hurricanes, jotting each idea on a separate note. (*E.g. eye, tropical storm, wind, circular, Helene, Milton, Katrina, Florida, South Carolina, Atlantic Ocean, etc.*)

3. After two minutes, have students in each group stack notes that have the same idea.

4. Next, have groups combine similar ideas into 3-4 categories that they label. (*E.g., names, types of storms, motion, weather conditions, etc.*)

5. Invite one of the groups to share one of their categories. Ask other groups to give a thumbs up if they had a similar category.

6. Record the category name on the board. Have groups add their stacked notes to the board under the appropriate category.

7. Continue like this, rotating through groups, until all of the categories have been shared and recorded.

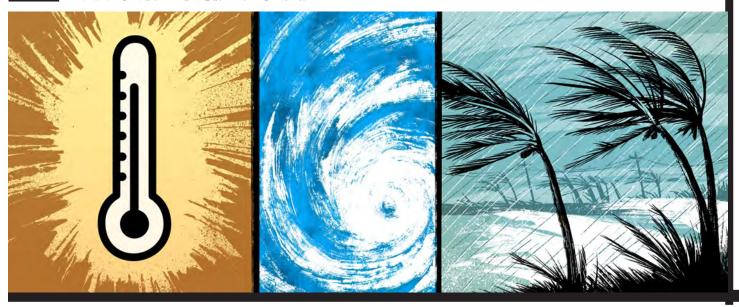
8. Have students watch this short video introducing hurricanes: https://www.yout-ube.com/watch?v=LlXVikDkyTg [2:57]

9. Finally, invite students to set a purpose for reading the article, referring to the resource page **Setting A Purpose Before Reading** as needed.



Image created using AI https://ideogram.ai/

### Science, Technology, and the Environment **ALL ABOUT HURRICANES** – Nature's Fiercest Storms



Hurricanes are very strong tropical storms that occur in the Atlantic Ocean. They consist of a large system of powerful winds. These winds circulate around a centre of low **barometric pressure**. They move along the Earth's surface with a counterclockwise rotation in the northern hemisphere. In the southern hemisphere, their rotation is clockwise.

Hurricanes cause heavy rains, and often **storm surges**. These can bring major destruction, especially when a storm makes landfall in a populated area.

# HOW HURRICANES

Most storms begin over tropical waters west of Africa. When sea-surface temperatures are above 26.5 degrees Celsius, water vapour from the ocean rises. This creates an inward movement of air. The air begins to spiral toward the centre of the disturbance. It moves faster and faster the larger the storm gets. Winds in the upper atmosphere can produce a **shear force** to disrupt the system. But if they don't, the storm can increase in height and breadth until it reaches hurricane status. It gains strength as it moves, picking up energy from the warm waters.

#### **MEASURING HURRICANES**

Hurricanes are categorized by their wind speeds. The Saffir-Simpson scale rates their severity.

The scale runs from Category 1 through Category 5 in order of increasing intensity. A Category 1 storm has wind speeds of 119 to 153 kilometres per hour. It causes minimal damage. A Category 4 storm is extreme. It can knock down walls, tear off roofs, wreck mobile homes and flood coastal and lowland areas. A Category 5 storm packs winds of 250 kilometres per hour or more. It causes catastrophic damage.

## DID YOU KNOW?

In the northwest Pacific Ocean, hurricanes are known as typhoons; in the southwest Pacific and Indian Oceans, they're called cyclones.

### NAMING HURRICANES

Scientists started naming large storms in 1950. This made communication clearer. It helped people better understand forecasts and warnings.

#### DEFINITIONS

**BAROMETRIC PRESSURE**: the pressure of the Earth's atmosphere, as measured by a barometer **SHEAR FORCE**: a difference in wind speed and/or direction over a relatively short distance in the atmosphere **STORM SURGE**: an unusual, often destructive rise in sea level in a coastal area, caused by low atmospheric pressure and strong winds

LEVEL 1 · NO. 3



SCIENCE, TECHNOLOGY, AND THE ENVIRONMENT

- NATURE'S FIERCEST STORMS

Each year, a list of names is prepared for the hurricane season. Lists are recycled every six years, but if a storm causes extensive damage, its name is retired.

### HURRICANE SEASON

In the Atlantic region, hurricane season runs from June 1 to November 30. The most intense storms usually occur between August and October.

Last May, scientists predicted an above-normal hurricane season. About 10 were anticipated and up to seven were expected to emerge as major hurricanes.

By mid-October, nine hurricanes had developed. Two, Hurricane Helene and Hurricane Milton, caused major damage in the Southeastern United States.

### WARMING WATERS

For years, sea surface temperatures have been warmer in areas where storms often form. Storms pick up more energy when ocean waters are warm, and this can lead to **rapid intensification**. Fast-growing storms can cause more damage since people have less time to prepare.

One possible factor leading to the warmer water? The 'Atlantic Multidecadal Oscillation' (AMO). The AMO is a natural

## ABOUT GLOBAL WARMING

'Greenhouse' gases exist naturally in the air around Earth. They trap and hold the sun's heat, warming our planet and making life possible. The problem is that this natural warming system – known as the greenhouse effect – has been thrown out of balance over the last 200 years. More greenhouse gases are gathering in the atmosphere than naturally exist there.

Humans are causing this imbalance By burning fossil fuels to run cars, heat homes, and make products, we are adding greenhouse gases to the atmosphere.

If current trends continue, melting ice will cause ocean levels to keep rising. Low-lying areas around the world will flood. Many animal and plant species will die. Fresh water supplies will decrease, and the world will experience more intense weather more often. Droughts—which are already more frequent—will grow longer and more intense.

In 2024 in Dubai, 197 nations signed the 28th Conference of the Parties under the United Nations Framework Convention on Climate Change (UNFCCC) – COP28 for short. They promised to phase down usage of fossil fuels, triple renewable energy by 2030, and assist countries vulnerable to climate change. They also agreed to strive to limit global warming to  $1.5^{\circ}$  C above pre-industrial levels.

Even at 1.5° C, there is a risk of a global food crisis and a **permafrost** thaw. Methane released from permafrost alone would be enough to keep the planet warming, thus releasing even more methane. Such a feedback loop would be unstoppable.

Some scientists say that it is already too late to limit global warming to 1.5° C. Others say it's still possible. Drastic action is needed.

North Atlantic weather cycle. It is currently in a warm phase.

#### MORE TO COME?

Global warming may also be a factor. Many scientists say that warm sea waters produce larger storms with more rain, stronger winds, and higher storm surges.

"Human-caused climate change is supercharging them and exacerbating the risk of major damage," says Dr. Kevin Trenberth, a climate expert.

Hurricane season is not over yet. Scientists are still waiting and watching conditions carefully. The more warnings they can provide, the safer and more prepared people will be. ★

#### DEFINITIONS

**PERMAFROST**: ground that stays permanently frozen, for example in the polar regions

**RAPID INTENSIFICATION**: when maximum sustained wind speeds increase by at least 30 knots (56 km per hour) in 24 hours

Science, Technology, and the Environment

ALL ABOUT HURRICANES

NATURE'S FIERCEST STORMS

#### COMPREHENSION QUESTIONS

1. Explain what a **hurricane** is.

2. List three characteristics of a hurricane.

3. What are these types of storms called in other regions of the world?

4. Where do most hurricanes form?

5. Explain how hurricanes form.

6. When is hurricane season in the Atlantic Ocean?

7. How do meteorologists categorize hurricanes? What 'scale' do they use?

8. What is the lowest category on this scale? What is the highest category?

9. Why do meteorologists name hurricanes?

10. How do many scientists believe climate change and storm intensity are connected? Explain.



#### QUESTIONS FOR FURTHER THOUGHT

1. Consider the following quote by Dr. Ilan Kelman at the Institute for Risk and Disaster Reduction and Institute for Global Health at University College London: "*The hurricane is just a storm, it is not the disaster. Climate change did not make people build along vulnerable coastlines so the disaster itself is our choice and is not linked to climate change.*"

a) What is your understanding of Dr. Kelman's position?

b) For what reasons could you agree with Dr. Kelman? For what reasons could you disagree? Explain.

2. The article discusses how hurricanes are named to make communication with the public clearer and to help people understand forecasts and warnings for particular storms. It also explains that lists of names "are recycled every six years, but if a storm causes extensive damage, its name is retired."

For what reasons might authorities decide to retire the name of a hurricane that causes extensive damage? Explain.

3. Certain regions are more vulnerable to being hit by a hurricane due to their geography and their proximity to the ocean. Why might residents in hurricane-prone regions choose to live in an area that regularly deals with these destructive weather events? Support your response with examples.



#### QUESTIONS FOR ONLINE EXPLORATION

Note: The links below are listed at www.lesplan.com/links for easy access.

 What are hurricanes and how are they formed? https://www.yout-ube.com/watch?v=zP4rgvu4xDE [1:51] https://www.livescience.com/22177-hurricanes-typhoons-cyclones.html https://i.pinimg.com/736x/11/26/80/112680a2a43a812589e5cb279b0816ea.jpg

What did you learn?

2. Learn about the Saffir-Simpson Hurricane Wind Scale that is used to classify categories of hurricanes based on their wind speed:

https://www.nhc.noaa.gov/aboutsshws.php#:~:text=The%20Saffir%2DSimpson%20Hurricane%20 Wind,Scale%20estimates%20potential%20property%20damage

3. How do storm surges work and why can they be so deadly? https://www.yout-ube.com/watch?v=M3nH7euL7xI [4:49] https://www.yout-ube.com/watch?v=TJ5C7TsBsao [4:00]

4. Many scientists suggest that climate change is supercharging hurricanes:

https://science.nasa.gov/earth/climate-change/a-force-of-nature-hurricanes-in-a-changing-climate/ [4:26]

https://www.bbc.com/news/world-us-canada-42251921 [1:49]

Do you agree with them? Why or why not?

# ANGRY HURRICANES RAVAGE THE U.S.

Two massive storms cause death and destruction

#### INSTRUCTIONS

**Part A:** Storm science began many years ago, but data gathered without radar, satellites, computers, storm chasing planes, etc. was initially very limited. Many storms have impacted the North Atlantic over the years. Use the following link and complete the table to show the number of storms and hurricanes for each decade.

1	-			1 1	
Years	Storms	Hurricanes	Years	Storms	Hurricanes
1900-1909		42	1970-1979		50
1910-1919	61		1980-1989	93	
1920-1929		41	1990-1999		
1930-1939	115		2000-2009		
1940-1949		53	2010-2019	155	
1950-1959	128		2020-2023*		35
1960-1969		64			

https://tropical.atmos.colostate.edu/Realtime/index.php?arch&loc=northatlantic

1. Plot a line graph for each decade to show 1) the number of storms and 2) the number of hurricanes.

2. Complete your graph with a proper title.

3. The last entry is for four years (2020-2023\*). What prediction can you make for the coming six years? .

4. Examine the table and your graph. What observations can you make and what conclusions can you draw?

**Part B:** Strong storms often impact Eastern North America and the Caribbean. Hurricane season is from June 1 to November 30, but most storms occur in August or September. As of May 2024, 960 Atlantic hurricanes were recorded since 1851. Many did not affect the U.S. and many storms did not develop into hurricanes. Use the link below to complete the table to show the top 10 U.S. states that have been historically impacted by hurricanes:

https://www.finder.com/home-insurance/states-with-the-most-hurricanes

State	Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5	Total	Percentage
Virginia	11		0			13	3.1%
Mississippi		5		0	1		3.3%
New York	9				0	15	3.5%
Georgia		4		1		21	
Alabama	12		5		0		5.4%
South Carolina		9		3		32	
North Carolina	32		6		0		13.7%
Louisiana		20		5		63	14.9%
Texas	29			7	0		
Florida	47			11		120	28.3%

1. Plot a horizontal bar chart to show the top 10 U.S. states impacted by hurricanes. Indicate the number of hurricanes for each category in each bar for each state to show the different hurricane categories.

2. Complete your graph with a proper title.

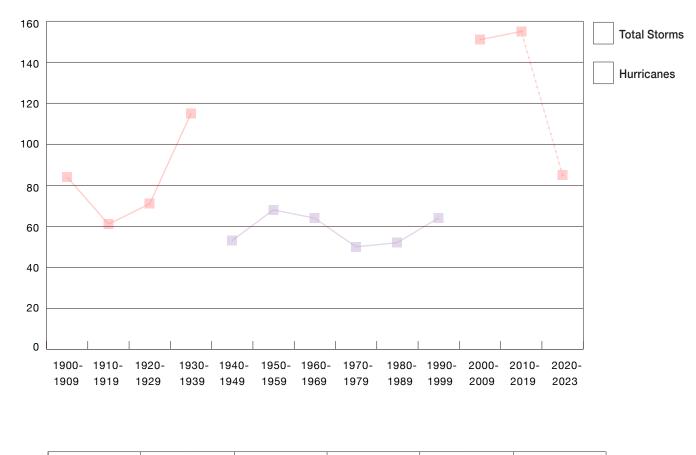
3. Examine the table and your chart. What observations can you make and what conclusions can you draw?

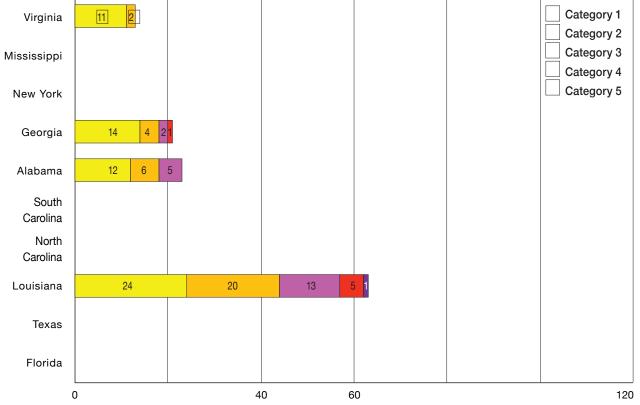
LEVEL 1 · NO. 3

WHAT IN THE WORLD? • SAMPLE

# ANGRY HURRICANES RAVAGE THE U.S.

Two massive storms cause death and destruction

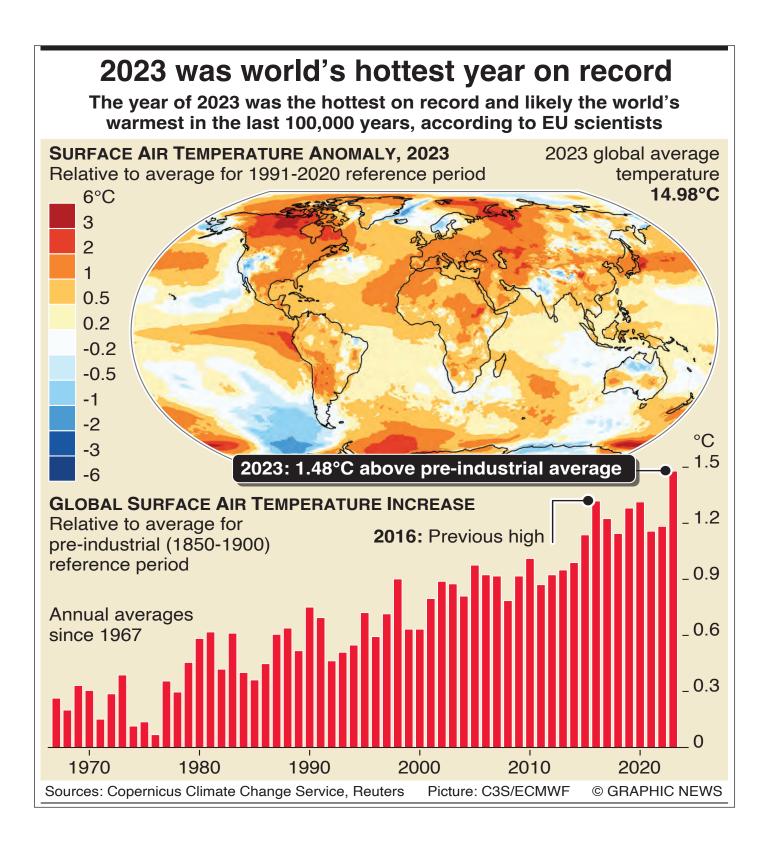




SCIENCE, TECHNOLOGY, AND THE ENVIRONMENT ALL ABOUT HURRICANES

- Nature's Fiercest Storms

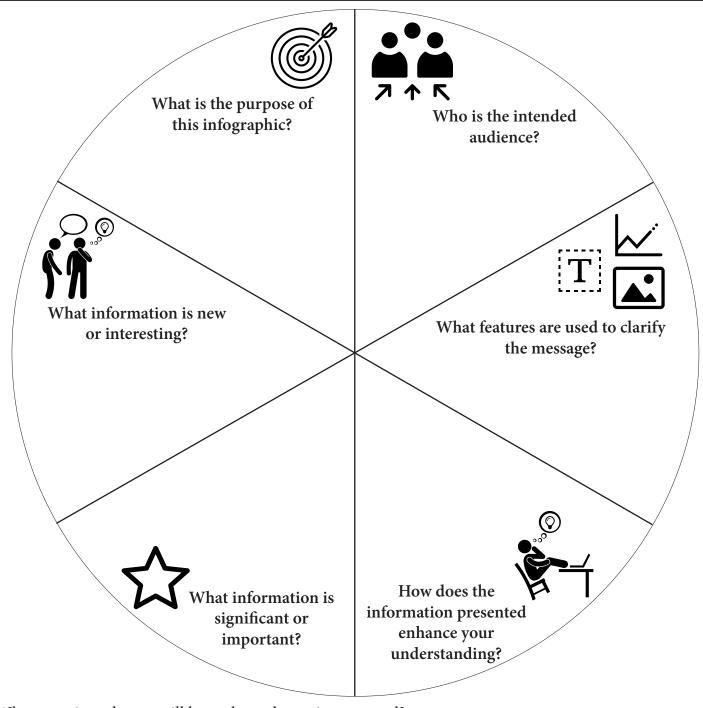
#### INFOGRAPHIC



SCIENCE, TECHNOLOGY, AND THE ENVIRONMENT

ANALYZING AN INFOGRAPHIC

- NATURE'S FIERCEST STORMS



What questions do you still have about the topic presented?

WHAT IN THE WORLD? • SAMPLE

SCIENCE, TECHNOLOGY, AND THE	
- Nature's Fiercest Storms	
PUTTING IT ALL TOGETHER	
A. Write the letter that corresponds to the <u>best</u> as	nswer on the line beside each question:
1. The Earth's natural warming system i	s called:
a) climate change	b) greenhouse effect
c) solar power	d) global warming
2. A is an unusua	l, destructive rise in sea level in a coastal area.
a) typhoon	b) shear force
c) storm surge	d) cyclone
3. What scale is used to classify hurrican	ne intensity?
a) Richter scale	c) Beaufort scale
b) Vector-Roberts scale	d) Saffir-Simpson scale
<ul> <li>B. Mark the statements T (True) or F (False). If a support it on the line below. If a statement is Fals</li> <li>4. True or False? The Atlantic hurricane</li> </ul>	<u>e</u> , write the words that make it true on the line below.
5. <b>True</b> or <b>False?</b> Hurricane-like storms a	are called cyclones in the Indian Ocean.
6. <b>True</b> or <b>False?</b> In the northern hemisp	here, hurricane winds rotate clockwise.
C. Fill in the blanks to complete each sentence.	
7. Scientists started l	arge storms in 1950.
8. Most hurricanes begin in the Atlantic Ocean of	f the continent of
9. When permafrost thaws	gas is released into the atmosphere.
D. Respond to the following question in paragra	ph form. (Use a separate sheet of paper if necessary.)
10. What reasons can you suggest to explain why hurricane size and strength, and global warming?	many scientists believe there is a connection between

# RESOURCE PAGE FOR STUDENTS SETTING A PURPOSE BEFORE READING

There are a number of reasons we read, and setting a purpose for reading – knowing WHY we are reading – helps us to focus on important information and to better understand and remember what we read. It also helps us decide HOW we will read the text.

We don't read all texts for the same purposes or in the same way. For example, we read an instruction manual for a new Blu-ray player for a different reason than we read a book or a website. How we will read it – the strategies we use – will also differ. We are more likely to skim to find the information we need in a manual. Once we find what we need, we might read the instructions carefully to figure out what to do. Then, we stop reading, put the manual down, and carry out the steps. We may have to reread if we get confused or forget what to do.

This is a very different approach than the one we would use to read a book. When we read a book, we usually read cover-to-cover. We read carefully so we don't miss any details because we want to understand the whole story. Sometimes we make connections or create images in our minds as we read to help us better understand what we are reading. Depending on its length, we may put the book down before we finish reading it but we will start reading where we left off.

Good readers are flexible and responsive. This means that they match their reading strategies to their purpose for reading. What types of text do you read? Why do you read them? What strategies do you use to read each of these texts? The chart below is a summary of the main purposes for reading and what each entails.

Purpose for reading	What it looks like	
For enjoyment	Usually student-selected.	
	Allows students to choose a variety of genres and forms.	
	Allows students to pursue what interests them while developing reading skills.	
To experience something new	Students make connections between their personal experiences and those of people around the world.	
To learn more about themselves and others	Students reflect on what they've read and express opinions and perspectives.	
	Students develop a sense of their personal values and make sense of the world around them.	
To gain information	Students use the features of informational texts to gather, analyse and apply what they've learned.	
To understand issues	Students develop a sense of perspective.	
	Students pose questions, acknowledge other points of vio critique the opinions presented and support opinions wi evidence.	
To appreciate writing	Students respond to text in ways other than written answers to apply what they've learned in new contexts.	
To appreciate use of media to communicate	Students respond to a variety of media formats (e.g., infographics, political cartoons, videos, etc.) and react to how the format supports the meaning of the message.	

\* Chart adapted from: A Guide to Effective Literacy Instruction, Grades 4-6, p. 11.

# **Current Events, Clearly Explained**



Students want to know what's happening in their world – but the news can be difficult and time-consuming to teach.

# WE HAVE THE SOLUTION. (Five, actually.)

## The Canadian Reader

#### PDF/Word resource

- ✓ Clearly written, leveled Canadian current events articles
- ✓ Literacy-based lesson plans
- $\checkmark$  Engaging, original illustrations
- ✓ Comics
- ✓ Map assignments

**Product details:** 8 issues. 38 pages. Available in English and in French for grades 3 and up (1 reading level).

#### Currents4Kids.com News4Youth.com

- ✓ **Online** and interactive
- ✓ Weekly
- ✓ Auto-graded quizzes
- ✓ Comment page for students to respond to the stories
- ✓ Links to relevant articles, resources, maps, photos and videos
- ✓ Extension activities

**Product details:** 40 issues. **One subscription** allows all teachers and students access from any Internet-connected device at any time. Available in English and in French. *Currents4Kids/Infos-Jeunes*: Grades 3 and up (1 reading level). *News4Youth/Infos-Ados*: Grades 5 and up (3 reading levels).



**Online** interactive resource

## What in the World?

- ✓ PDF/Word resource
- ✓ National and international news stories
- ✓ Key vocabulary
- ✓ Background information
- ✓ Varied assignments that build content-area knowledge and enhance critical thinking
- $\checkmark$  Maps and illustrations

**Product details:** 8 issues. 60 pages. Available in English and in French, and in 2 reading levels, for grades 5 and up.

## **Building Bridges**

- ✓ PDF/Word resource
- ✓ Builds understanding of current events that impact Indigenous Peoples and all Canadians
- ✓ Two theme-based articles and lesson plans
- ✓ Background information
- ✓ Consistent with
- First Peoples Principles of Learning
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**Product details:** 5 issues. Variable page length. Available in English and in French, and in 2 reading levels, for grades 5 and up.

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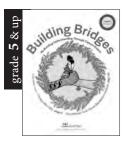
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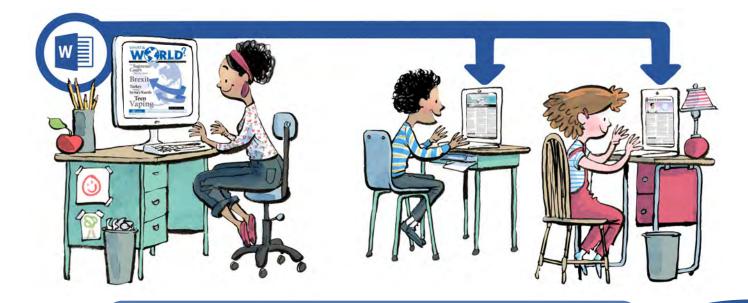
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# Students Can Work In Word/Google Docs...



## Did you know ....

... that each issue of *What In The World?* includes a **PDF** file (**complete document**) and a **Word** file (**articles and questions only**).

Students can complete assignments directly in the **Word** file. Teachers can email the file to students or post it on the Internet. The **Word** file also allows teachers to:

- easily modify and format content including changing **fonts** and text sizes
- create a PDF document and use Adobe Reader's 'Read Out Loud Mode'
- save paper and copying costs and help protect the environment
- · promote and encourage students' computer skills

#### Data in the Word file

There are three ways to access data from a Word file:

- Select the data you wish to Copy and then Paste it into any word processing program. Use Select All to copy the entire document.
- Import the entire Word file into LibreOffice (or another similar program) and then save as a new file.
- Create a new file in a different format. Use the Word Save As command to choose: 1) plain text, 2) rich text format (RTF), 3) Web page (.htm), 4) PDF, etc.

#### **Google Docs and LibreOffice**

- You can easily upload the **Word** file to **Google Docs** and share it with students or other teachers.
- You can translate a **Google Docs** file into another language *(see Tools>Translate document)* but you will need to edit the document to suit your requirements. **Google Docs** can translate into over 100 languages including Spanish, Mandarin, and German.
- LibreOffice is a free alternate to Microsoft Office and offers the same functionality. It's easy to install and use. See: www.libreoffice.org

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