

Pre-Assessment/Pre-Discussion Questions: What if.....? How does.....?

- 1) What is the difference between a Nor'easter and tropical storms?
- 2) What do you think causes Nor'easters?
- 3) Why do you think that hurricane Florence was so bad?

Viewing Guide Questions: questions to answer while watching the video

- 1) What are the pictures behind him in the beginning of the video showing and where were they taken?
- 2) Describe the photo the girl shows and explain what the different colors mean.
- 3) What area was most affected by Florence and describe how it was affected?
- 4) What governmental group helps notify us about tropical storms and hurricanes?
- 5) How does this group track and monitor weather events?

Answer Key

- 1) They are showing hurricane Florence's flooding and Davis, NC.
- 2) Green is 30 centimeters of rain, yellow is 40, and red is 50
- 3) Davis, NC and by the constant rain and wind as well as by the storm surge
- 4) NOAA
- 5) By using satellites and sending up weather balloons with cameras

After Viewing Questions: open ended/HOT

- 1) Explain the effects of Florence in downeast
- 2) Describe why Florence caused so much damage Down East even though it was only a category 1 hurricane.
- 3) Analyze the flooding and damage due to hurricane Florence and explain the long term impacts.

Answer Key

- 1) Severe flooding
- 2) Massive storm surges and saturated soil
- 3) Record rainfall and it impacted the economy by 24 billion USD, plus deaths of up to 30 people in total, and way more injuries and damaged roads and infrastructure

Vocabulary Activity

https://docs.google.com/document/d/15F4oezCIUMupfX_CHNcV8_0nTtN-bfCqAi_j7H_5N9g/e/dit?usp=sharing

Answer Key

https://docs.google.com/document/d/1vi3VMP9NTJo6Kj6x4EsO-_m56Z_42QINc6EqQPO6kZ/A/edit?usp=sharing

Hands on Activity

Hurricane Lab:

<https://docs.google.com/document/d/1e98dFJ8bR1j6duHwiL4QJjPpMkICg5bMGi12OwZGUm4/edit?usp=sharing>

- 1) What is the purpose of this experiment?
- 2) Which materials are needed to model the rain bands of a hurricane? And what is the purpose of the materials?
- 3) Where should the food coloring be placed once the whirlpool is formed? Why?
- 4) How might the "rain bands" look different if the water was stirred slowly versus rapidly?
- 5) Based on step 4, what visual effect is created when the food coloring is added to the vortex?

Answer Key

- 1) To demonstrate how wind patterns circulate around a center and form distinct rain bands.
- 2) A large clear bowl, water, a spoon, and food coloring. The large clear bowl is to show what it looks like on the sides, top, and bottom. The water acts like stagnant and moving air. The spoon is to aid in the making of the whirlpool (hurricane) and the moving of the water. Food color is to show the lines and patterns that the whirlpool (hurricane) makes.
- 3) Directly into the center of the whirlpool (the "eye").
- 4) If stirred slowly, the bands would likely be loose, wide, and fade quickly; if stirred rapidly, the bands would be tighter, more defined, and spin faster.
- 5) The color spins outward into spiraling bands, mimicking the look of real hurricane rain bands.

Final Assessment Questions/Online video

Tropical Storm vs Noreaster: <https://www.youtube.com/watch?v=GcUocaWFyNQ>

- 1) Where do nor'easters form ?
- 2) How do tropical storms form?
- 3) What kind of front are nor'easters usually pushing in?
- 4) What can names of storms be named after?
- 5) Why would they throw away a name?

Answer Key

- 1) On the south to north eastern coast of the us
- 2) When warm water evaporates and there is a low pressure
- 3) Cold fronts
- 4) Locations or human names
- 5) If the storm was impactful or greatly damaging

Going Further Questions

- 1) Explain some structural adaptations that could be made to houses that could decrease damage to houses on or near the water.
- 2) What can we do to help the community after a storm?
- 3) How can you notify your family/neighbors about the storm? Why is this important?
- 4) As the atmosphere gets warmer, explain how warmer temperatures will impact Nor'Easters and tropical storms-specifically flooding Down East due to Nor'Easters and tropical storms.

Answer Key (answers may vary)

- 1) Houses with stilts and additional brake walls to prevent or reduce storm surge from overtopping the walls.
- 2) Volunteer to help your neighbors and other people to help clean up and fix things such as cars/houses/boats
- 3) By text/mouth/letter/calling/facetimeing and more communication attempts
- 4) Because of climate change the weather events are getting more serious and as a result, flooding of the east coast will occur more often and cause more damage.

Other Resources

Youtube - What Is a Nor'easter? <https://www.youtube.com/watch?v=GR-dmZ219EY>
A real news report on a nor'easter https://youtu.be/hU_TZhhEDoI?si=tJRfn8tx6FuXWQyT
Youtube Short - Hurricane Ian Storm <https://www.youtube.com/shorts/860aPR2W6sg>
Nor'easter flooding video <https://www.youtube.com/shorts/9-2poHzvneg>
NOAA nor'easters site <https://www.weather.gov/safety/winter-noreaster>
What is a Nor'Easter? <https://acs.evsc.virginia.edu/noreasters>

OTHER IDEAS

- Write a story about
- Draw a picture of
- Find the difference between- pictures/paragraphs
- Which words match/not match the topics
- Poster explaining the topic
- Pamphlet to explain the topic