Title: Hurricane Sandy to Scale
Teacher Sheets

1. Explore the information about Hurricane Sandy at this link https://www.nasa.gov/content/goddard/two-years-later-nasa-remembers-hurricane-sandy/.

2. The diameter of Hurricane Sandy was approximately 1600 km. What was the radius? ***(800 km)***

3. What was the area? ***(approximately 2,009,600 km^2)***

4. Estimate the circumference of the hurricane. ***(approximately 1600*3 or 4800 km)***

5. Calculate the circumference if it were a perfect circle. ***(5026 km)***

6. Use the US map provided to draw a circle to scale centered in Kansas. Use the radius you calculated. ***(Accept reasonable responses.)***

7. How would the effects of a hurricane in Kansas be different from a coastal community? ***(Kansas would not take a direct hit and would not have a storm surge. However, they can still have extremely heavy rains and/or strong winds as the remnants of a hurricane move through.)***

8. Redraw the circle with the center over New Jersey. ***(Accept reasonable responses.)***

9. Look at the image provided to compare the area covered. How many states would be affected? ***(Accept reasonable responses.)***

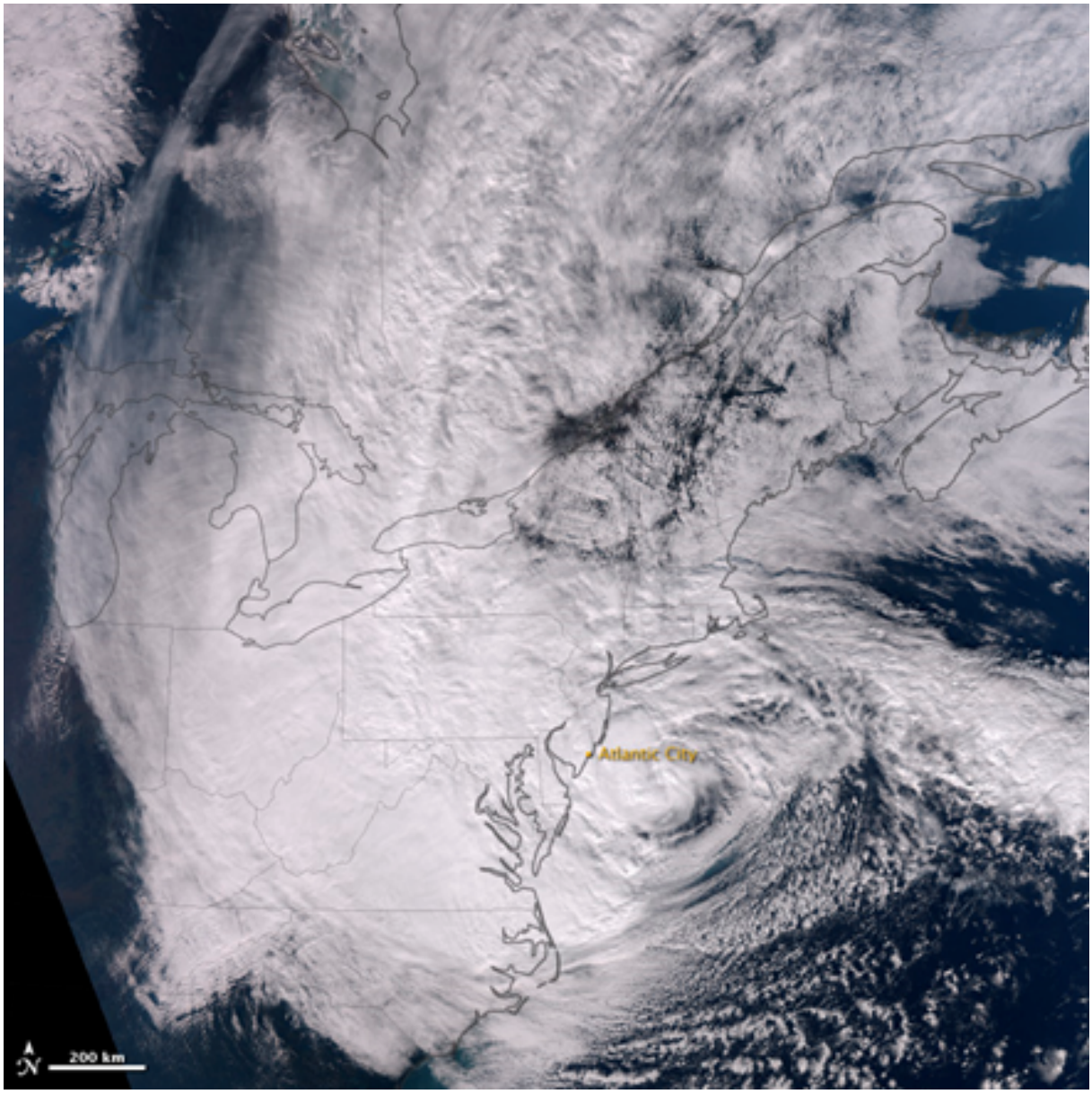

Image Credit: NASA Earth Observatory Image - Hurricane Sandy

10. What states were actually affected? ***(Students should indicate all states with significant cloud cover in the image. There may be some room for interpretation on the outer areas of the storm.)***

11. What does this mean for people who may not be directly where the eye of the hurricane hits, but are within the area of the storm? ***(You can be far from the eye of a hurricane and still experience significant effects.)***

12. What effects would you expect people and communities to experience from the hurricane? ***(flooding, wind damage, damage to vegetation and property, tornadoes)***

13. Use the Claim, Evidence Reasoning technique to answer the question: “When a hurricane is approaching the coast, why is it important for people away from the center of the hurricane to prepare?” ***(Accept reasonable responses.)***

Name: _____ Date: _____ Class: _____

Image Credit: U.S. Department of the Interior/U.S. Geological Survey Map

Name: _____ Date: _____ Class: _____

Claim: (One sentence statement that addresses the driving question: *When a hurricane is approaching the coast, why is it important for people away from the center of the hurricane to prepare?*)	
Evidence: Sufficient, Appropriate, and Observation Driven	**Reasoning**: (Why is this evidence important?)
Map Image 1. 2. 3.	Map Image 1. 2. 3.

Name: _____Date: _____ Class: _____

Claim-Evidence-Reasoning Rubric

Description	**3 Points**	**2 Points**	**1 Point**	**0 Points**
Claim	Makes an accurate and complete statement linking the images drawn and the conclusion.	Makes an accurate but incomplete claim addressing images drawn.	Makes an inaccurate claim.	Does not make a claim.
Evidence	Provides sufficient evidence to support claim using qualitative and quantitative observations of the images drawn.	Provides appropriate but insufficient evidence to support claim.	Provides inappropriate evidence. The evidence does not support the claim.	Does not provide evidence.
Reasoning	Provides reasoning that connects each piece of evidence to the claim. Uses data analysis skills to explain why the evidence supports the claim.	Provides appropriate but incomplete reasoning. Each piece of evidence is not supported by a line of reasoning.	Provides inappropriate reasoning.	Does not provide reasoning.
Total				