Name: _____ Date: _____ Period: _____

Hurricanes Lesson – Capture Sheet

1. Activator: Reflect on some of the roles of water on Earth.

How is water <u>helpful</u> to life on Earth?	**How is water <u>harmful</u> to life on Earth?**

2. Name two natural disasters that are caused, at least in part, by precipitation.

Measuring Rain

3. According to the animation, how much space would all the rain gauges on Earth take up if they were all in one place? _____

4. Were there many rain gauges in the ocean? _____

5. What tool do scientists use to gather great amounts of data about global precipitation? _____

Hurricanes:

6. What is one of the characteristics of the ocean that can cause a hurricane to grow in intensity or weaken? _____

7. What is the temperature of sea surface water needed for a hurricane to form and grow? _____° F (26.5° C)

8. What do warmer sea surface temperatures do to a hurricane? _____

9. In which of the two data images will the ocean temperatures most likely help a hurricane to intensify? (Look in the Atlantic Ocean, near the Gulf of Mexico and East Coast of the U.S.) Why? _____

_____

_____

_____

10. What are some dangers from the heavy rainfall brought by a hurricane?

Now that you've seen some of the dangers and costs of hurricanes, let's look at how satellites can see into storms and help us predict their effects. Look at the TRMM images of the two storms: Soulik and Dorian.

11. How can GPM's more sensitive instruments, greater global coverage and international partner satellites help people in the future when it comes time to decide what actions citizens should take as a tropical storm is approaching?

_____

_____

_____

_____

12. Which of the two storms (Rainfall Data Image 1 -Soulik or Rainfall Data Image 2 - Dorian) do you think is more likely to intensify? _____

Why? _____

_____

_____

_____

Brief Written Answer: *(*Refer to the handouts *Evaluate: Sea Surface Temperatures* and *Rainfall Data Sets)*

If storm A and storm B were to cross over an ocean with the given sea surface temperatures, which one would pose the greatest threat to life on land once it makes landfall? How could this information help protect people?

Be sure to include the following in your response:

- The importance of the sea surface temperatures for the formation and changes in intensity of the storm.
- The amounts of precipitation currently in the storm.
- Describe at least one danger of having too much rainfall and how using data like this can help protect people and property.

Extension: Hot Towers

1. After looking at the images of the two hurricanes, Henriette and Talim, which one do you think was the most intense and why? _____

2. How can the TRMM and GPM satellites' ability to look inside a hurricane help to better predict hurricanes in the future? _____