Hurricanes Lesson – Capture Sheet

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

<table>
<thead>
<tr>
<th>How is water helpful to life on Earth?</th>
<th>How is water harmful to life on Earth?</th>
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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? ________________

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

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?

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

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