**Reading the Weather, Reading the World**  
Grade 4: Nonfiction, Unit 2

Readers, today you will read two texts to learn more about dangerous weather. Read text 1 and answer questions 1, 2, and 3 on a separate piece of paper. Then read text 2 and answer question 4.

<table>
<thead>
<tr>
<th>1. Summarize text 1, “Dangerous Weather: Hurricanes and Tornadoes.” When summarizing, remember to:</th>
<th>2. In “Dangerous Weather: Hurricanes and Tornadoes,” how do the first two paragraphs contribute to the whole text? When writing about how part(s) of a text fit with others, remember to:</th>
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| • write about the main idea  
• include carefully selected details that link to the main idea  
• use the text structure in your response  
• keep your summary brief  
• write about the ideas in the text, not your own opinions. | • explain why the part is important  
• explain how the part fits with the rest of the text. |

**Main Idea(s) and Supporting Details/Summary**

| 3. In the lines below from “Dangerous Weather: Hurricanes and Tornadoes,” the author uses a craft technique.  
Tornado researcher, Tom Grazulis, says, “Tornadoes are extremely hard to pin down.” Explain the craft technique the author used and why the author may have used this technique. When analyzing author’s craft, remember to: | 4. Both “Dangerous Weather: Hurricanes and Tornadoes” and “Tornado Alley” teach about an important subtopic—where tornadoes take place. Explain briefly what these texts teach about where tornadoes take place. When synthesizing, remember to: |
|--------|-------------------------------------------------------------------------------------------------|
| Explain the craft technique the author used and why the author may have used this technique. When analyzing author’s craft, remember to:  
• identify craft technique(s) the author used  
• write about the writerly goal(s) the author seems to have been aiming toward  
• elaborate on this, writing at least a few sentences. | • focus on the subtopic  
• include information from each text that fits with this subtopic  
• organize information into categories (if possible). |

**Analyzing Author’s Craft**

**Cross-Text(s) Synthesis**
### Main Idea(s) and Supporting Details/Summary


   **Main Idea(s):**
   - The main idea of the text is to explain the severity and impact of hurricanes and tornadoes.

   **Supporting Details:**
   - The text includes statistics on the frequency and intensity of these storms.
   - It describes the devastation caused by hurricanes and tornadoes.
   - It discusses the methods used to predict and prepare for these events.

### Analyzing Parts of a Text in Relation to the Whole

2. In “Dangerous Weather: Hurricanes and Tornadoes,” how do the first two paragraphs contribute to the whole text?

   **Part:**
   - The first two paragraphs introduce the topic and provide background information.

   **Contribution to the Whole Text:**
   - They establish the context and set the stage for the discussion of the dangers posed by hurricanes and tornadoes.
   - They highlight the importance of being aware of these phenomena.

### Analyzing Author’s Craft

3. In the lines below from “Dangerous Weather: Hurricanes and Tornadoes,” the author uses a craft technique.

   **Craft Technique:**
   - Tornado researcher, Tom Grazulis, says, “Tornadoes are extremely hard to pin down.”

   **Explanation:**
   - The author uses direct quotes to add credibility to the information presented.
   - The quote from Tom Grazulis makes the text more engaging and authoritative.

### Cross-Text(s) Synthesis

4. Both “Dangerous Weather: Hurricanes and Tornadoes” and “Tornado Alley” teach about an important subtopic—where tornadoes take place. Explain briefly what these texts teach about where tornadoes take place.

   **Text(s):**
   - “Dangerous Weather: Hurricanes and Tornadoes”
   - “Tornado Alley”

   **Teaching: Where Tornadoes Take Place:**
   - Both texts mention that tornadoes are more common in certain regions, particularly in the central United States.
   - They discuss the conditions that lead to tornado formation and the areas prone to these storms.
   - They highlight the importance of understanding these patterns for disaster preparedness.

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Look outside. What do you see? Are there dark clouds in the sky? Does it look like it might rain? Do you need a jacket? An umbrella? When you check the weather to figure out what clothing to wear, you are making a prediction about the weather.

Of course, if you look outside, you only know what the weather is like now. That’s why many people rely on weather forecasts. Meteorologists (or weather scientists) make forecasts that not only let you know what kind of clothes to wear for the day, forecasts also help keep people safe from dangerous weather such as hurricanes and tornadoes. Hurricanes and tornadoes are similar in some ways and different in some ways. Knowing about each helps with forecasting.

**Forecasting Hurricanes and Tornadoes**

How do scientists predict hurricanes and tornadoes? First, you need to know some basic facts about each. Hurricanes are very large storms. They form over open water. They can span up to 300 miles. Hurricanes can go on for
several days. This makes them easier to track. It is also easier for scientists to predict their movements, or to make forecasts about them.

An image of a hurricane from outer space. © Getty Images/Stocktrek Images/HIP

Tornadoes, on the other hand, are much smaller than hurricanes. They usually form over dry, flat land and they might only occur for a few minutes. Tornadoes develop during thunderstorms and move unpredictably. Tornado researcher, Tom Grazulis, says, “Tornadoes are extremely hard to pin down.”

Since tornadoes are so hard to predict, scientists use tools and technology to gather more information. One of the most important tools for predicting tornadoes is Doppler radar. Scientists use Doppler radar to measure the speed and direction of the wind. If the winds are rotating, that could be a possible tornado.
A tornado, near Oklahoma.

**Geographic Regions**

Geography helps people predict hurricanes and tornadoes. Hurricanes often start close to West Africa. They travel across the Atlantic Ocean. Sometimes they head toward the eastern United States. On the other hand, tornadoes can happen anywhere, but they tend to form in the Midwestern and Southeastern United States. In these parts of the United States, warm air from the south collides with cold air from the north. When the warm and cold air crash into each other, sometimes they cause tornadoes to form. Knowing where hurricanes and tornadoes are likely to occur helps scientists make more accurate predictions.

**Warning Times**

Scientists can now make better predictions about hurricanes and tornadoes. Now we have better warning systems for these extreme weather events. Warnings for hurricanes may be issued up to five days in advance. In contrast, warnings for tornadoes may only come 11 minutes in advance. That may seem like a short time. But as Ruth Tenzer Feldman points out, “that is about 11 minutes longer than people had 20 years ago!”

The next time you check the weather—by looking outside or up in the sky, you are developing a forecast. Weather forecasting helps people every day, but it really helps people prepare for and stay safe during extreme weather like hurricanes and tornadoes.
Imagine it’s springtime and you are playing baseball with your friends after school. Suddenly, the wind begins to blow. You feel raindrops, the skies darken, and you hear thunder in the distance. “We better get inside,” you call to your friends, “it looks like a storm is coming!” If you live in some parts of Kansas, Nebraska, Oklahoma, or Texas, you would probably run inside and turn on the radio or the television to check for a tornado watch or a tornado warning. You would do this because between the months of March and June these four states experience the most severe tornadoes in the entire country. There are so many tornadoes here that this area is often called Tornado Alley.

Tornado Alley is unusual in the world because the Rocky Mountains in the west and the Appalachian Mountains in the east stop the air from moving out across the country. Instead, the trapped air creates a passageway—or alley—for tornadoes to travel and possibly grow bigger and...
more severe. Water from the rainstorm, dust and other debris is picked up the tornado—this is what makes the tornado visible to people.

A map of the United States that shows Tornado Alley

As a result, people who live in Tornado Alley need to be prepared for tornadoes. There are several ways people prepare for tornadoes. First, buildings are reinforced to make sure the roofs are strong and secure. Second, storm cellars are built so that people have safe places to stay during storms. Last, people who live in this region need to know what to do during a storm and need to get information from the news media about possible tornadoes. If you live in Tornado Alley you need to be informed and prepared in order to stay safe!