Lesson 5.4
Investigating Flooding Solutions
Lesson Overview

Students brainstorm, investigate, and write about solutions to Woodland Elementary’s flooding problem. The class revisits *Tornado! Predicting Severe Weather* to support students’ ideas about how to prepare for severe weather. Based on their understanding from testing the models, partners use the Shared Listening Routine to discuss changes that might prevent Woodland’s playground from flooding during severe rain. Students record predictions about which changes will keep Woodland’s playground from flooding and then observe a series of images that show the playground after severe rain to identify which changes were most effective. The teacher leads a shared writing to Woodland’s principal based on students’ suggestions for the most effective modification to prevent flooding. The purpose of this lesson is for students to understand the importance of predicting weather so that people can prepare for it and to apply this understanding in the context of preparing for flooding as a result of severe rain.

**Anchor Phenomenon:** Both the Carver and Woodland playgrounds experienced severe rain, but only Woodland’s playground flooded.

**Students learn:**

- Weather can be predicted.
- Predicting weather helps people prepare for it.
The teacher leads a second reading of *Tornado! Predicting Severe Weather*, with a focus on how to stay safe from severe weather.

**Instructional Guide**

1. **Connect to prior learning.**
   - We have been working as weather scientists to learn about severe weather. Severe weather is a problem because it can cause things like flooding that can be unsafe for people.
   - We are going to continue working as weather scientists to investigate how to stay safe from severe weather and the problems it can cause.

2. **Introduce the new Investigation Question.** Point to and read the new Investigation Question on the board.
   - How do we stay safe from severe weather?

3. **Display the front cover of *Tornado! Predicting Severe Weather*.**
   - We have read this book before to learn about how severe weather can affect people in the place where they live.
   - What type of severe weather did we learn about the first time we read this book? [Severe wind; tornadoes.]
   - We learned that even though there was severe weather, all of the people were safe. Now we will read again and pay attention to how the people in the book stayed safe from severe weather.

4. **Begin reading and pause at the end of page 7.**
What is one way the people in the book stay safe from severe weather? [They use Lynn’s predictions to prepare for severe weather.]

5. Continue reading and pause at the end of page 14.

What are other ways people can stay safe from severe weather? [Stay inside and away from windows; move to the strongest part of the building; kneel down in the hallway.]


Why was it important for Lynn and her team of weather scientists to predict severe weather? [Predicting severe weather gave people time to get ready for it; getting ready for severe weather helped people stay safe.]

What are some other ways that people can get ready for severe weather like tornadoes?

Accept all responses.

What are some ways we can get ready for other types of severe weather that might happen in our area?

Accept all responses.

7. Introduce the word **prepare** with the vocabulary routine. Hold up the vocabulary card for *prepare*.

This is the word *prepare*. To prepare means to get ready.

We are going to practice saying the word. Say the word after me: *prepare*.

Now say the word together: *prepare*.

Now whisper the word *prepare* to your partner.

To prepare means to get ready.

Post the *prepare* vocabulary card to the Vocabulary section of the classroom wall.

8. Introduce and post the key concepts. Point to and read each one aloud.

We have figured out that *weather can be predicted*.

Weather scientists predict weather and share their predictions with people.

*Predicting weather helps people prepare for it.*
Teacher Support

Background

Science Note: About Weather Forecasting
Forecasting weather (what we refer to in this unit as predicting weather) is the practice of making predictions about the state of the atmosphere in a particular location. Scientists forecast the weather by collecting data about current atmospheric conditions and using scientific understanding of atmospheric processes to predict future atmospheric conditions. Current weather forecasting is based on computer models, which use complex equations to analyze atmospheric data and project future weather conditions. Scientists continue to work toward improving forecasting ability, developing more accurate models, and increasing long-range predictive power.
Revisiting Tornado! Predicting Severe Weather

The teacher leads a second reading of *Tornado! Predicting Severe Weather*, with a focus on how to stay safe from severe weather.

### Instructional Guide

1. **Connect to prior learning.**

   - Hemos estado trabajando como científicos del clima para aprender acerca del clima severo. El clima severo es un problema porque puede causar cosas como inundaciones, que pueden ser inseguras para la gente.

   - Vamos a continuar trabajando como científicos del clima para investigar cómo mantenemos seguros contra el clima severo y los problemas que puede causar.

2. **Introduce the new Investigation Question.** Point to and read the new Investigation Question on the board.

   - ¿Cómo nos mantenemos seguros contra el clima severo?

3. **Display the front cover of *Tornado! Predicting Severe Weather*.**

   - Hemos leído este libro antes para aprender acerca de cómo el clima severo puede afectar a la gente en el lugar donde vive.

   - ¿Sobre qué tipo de clima severo aprendimos la primera vez que leímos este libro? [Viento severo; tornados].

   - Aprendimos que aunque había clima severo, toda la gente estaba segura. Ahora leeremos de nuevo y pondremos atención a cómo la gente en el libro se mantuvo segura contra el clima severo.

4. **Begin reading and pause at the end of page 7.**
¿Cuál es una manera en la que la gente en el libro se mantuvo segura contra el clima severo? [Usan las predicciones de Lynn para prepararse para el clima severo].

5. Continue reading and pause at the end of page 14.

¿Cuáles son otras maneras en las que la gente puede mantenerse segura contra el clima severo? [Permanecer adentro y alejarse de las ventanas; moverse a la parte más fuerte del edificio; arrodillarse en el pasillo].


¿Por qué fue importante para Lynn y para su equipo de científicos del clima predecir el clima severo? [Predecir el clima severo le dio a la gente tiempo para prepararse; prepararse para el clima severo ayudó a la gente a mantenerse segura].

¿Cuáles son algunas otras maneras en que la gente puede prepararse para el clima severo como los tornados?

Accept all responses.

¿Cuáles son algunas maneras en las que podemos prepararnos para otros tipos de clima severos que podrían suceder en nuestra área?

Accept all responses.

7. Introduce the word prepare with the vocabulary routine. Hold up the vocabulary card for prepare.

Esta es la palabra preparar. Preparar significa hacer que esté listo.

Vamos a practicar decir la palabra. Digan la palabra después de mí: preparar.

Ahora digan la palabra juntos: preparar.

Ahora susurren la palabra preparar a su compañero o compañera.

Preparar significa hacer que esté listo.

Post the prepare vocabulary card to the Vocabulary section of the classroom wall.

8. Introduce and post the key concepts. Point to and read each one aloud.

Hemos averiguado que se puede predecir el clima.

Los científicos del clima predican el clima y comparten sus predicciones con la gente.
Predecir el clima ayuda a la gente a prepararse para ello.

Teacher Support

Background

Science Note: About Weather Forecasting

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