Day 21 – Tuck Everlasting:

- Use your novel to fill out the Literary Elements graphic organizer.
  - You may refer to your Literary Elements handout for a refresher. Go to your Shared Drives in Google Classroom and all the handouts are there.

Day 22 – Tuck Everlasting:

- Figurative Language test
  - You may refer to your Figurative Language handout as needed. Go to your Shared Drives in Google Classroom and all the handouts are there.

Day 23 – Tuck Everlasting:

- Novel final test. This is open-novel.

Day 24 – Tuck Everlasting:

- Novel Acrostic Poem
  - Work on the rough draft today.

Day 25 – Tuck Everlasting:

- Novel Acrostic Poem
  - Complete the final copy of your acrostic poem today.

Day 26 – Wordly Wise:

- WW Review for Lesson 9-12 (pages 125-127)
  - You should have your WW book, but if you do not, you can find WW on your Google Classroom Shared Drives. Print out the pages or if you do not have a printer, write out the answers.

*Respect* *Responsibility* *Perseverance* *Appropriate Behavior* *Honesty*
Day 27 – Wordly Wise:

- WW Lesson 13
  - Turn to 13E. Read the passage and circle the vocabulary words as you read. Then go back and write the following definitions.
    - wending  travel
    - transported  carried; moved
    - oblivious  unaware
    - gait  way of walking
    - fatigue  tiredness
    - quenches  satisfies
    - prominent  noticeable
    - depleted  used up
  - adapted  adjusted; used to
  - seating  dry; burning
  - glare  harsh light; shine
  - habitat  home; environment
  - rigorous  severe
  - outmoded  outdated; old-fashioned
  - efficient  effective
  - Look up WW Lesson 13 “Highlighted Passage” on your Google Classroom Shared Drives to see what needs to be highlighted and circled.
  - Read the passage again and then watch the following videos:
    - https://www.youtube.com/watch?v=XAXf233j9wM
    - https://www.youtube.com/watch?v=r3Ik5SfScd0
    - https://www.youtube.com/watch?v=6Il4-OiLn4E
  - Complete Exercise 13E.

Day 28 – Wordly Wise:

- WW Lesson 13
  - Complete Exercise 13A, 13B, 13C, & 13D

Day 29 – Literature Textbook 50 Book Club Story:

- “All Summer in a Day” (pages 313 – 319)
  - Read the story.
  - Take post-it notes of the beginning, middle, and end.
  - Complete 50 BC form. Go to your Shared Drives in Google Classroom for 50 BC related handouts and the form if you need another one.

Day 30 – Literature Textbook 50 Book Club Story:

- “Eleven” (pages 328 – 330)
  - Read the story.
  - Take post-it notes of the beginning, middle, and end.
  - Complete 50 BC form. Go to your Shared Drives in Google Classroom for 50 BC related handouts and the form if you need another one.

*Respect*  *Responsibility*  *Perseverance*  *Appropriate Behavior*  *Honesty*
Tuck Everlasting

CONFLICT

Internal Conflict ➔
External Conflict ➔

CHARACTERS

Protagonist ➔
Antagonist ➔

GENRE

SETTING

PLOT OR MAIN IDEA

THEME

1.
2.
3.

CLIMAX

POINT OF VIEW

1st, 2nd, or 3rd Person (circle one)

Support your answer from the novel (include the page number)
TUCK EVERLASTING
Figurative Language Test

- Simile – compares two things using like or as
- Metaphor – compares two things without using like or as
- Personification – giving life to a non-living thing
- Onomatopoeia – writing out sounds

In each sentence below, circle and identify the figurative language.

1. The first week of August hangs at the very top of summer like the highest seat of a Ferris wheel. → 

2. Mae sat there frowning, a great potato of a woman. → 

3. The sun was only just opening its eye on the eastern horizon. → 

4. I’m about dry as dust. → 

5. The last stains of sunset had melted away. → 

6. ...the wrinkled face of a tiny lake. → 

7. The last few notes of the music box plinked and then stopped. → 

8. ...her backbone felt like a pipe full of cold running water... → 

9. So the road went humbly by and made its way → 

10. ...enclosed by a capable iron fence some four feet high which clearly said, “Move on – we don’t want you here.” → 

11. The sun was dropping fast now, a soft red sliding egg yolk,... → 

12. They heard the tinkling little melody of the music box. →
Matching: Match these quotes with the characters who said them.

<table>
<thead>
<tr>
<th>Winnie</th>
<th>Mae</th>
<th>Tuck</th>
<th>Jesse</th>
<th>Man in the Yellow Suit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>4.</td>
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<td>5.</td>
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</tbody>
</table>

True or False: Write true or false next to each statement below.

1. _______ Jesse wanted Winnie to wait until she was older to drink from the spring.

2. _______ Miles' wife knew the stranger's grandmother.

3. _______ The Tucks wanted to sell the spring water.

4. _______ The stranger planned to keep the secret of the spring.

5. _______ Winnie helped Mae escape from prison.

6. _______ Winnie told her family about the spring.

7. _______ Winnie drinks the water from the spring when she turns 17 and runs away with Jesse.
Multiple Choice: Next to the number, write the letter of the best answer for each question.

1. ____ Where is the spring?
   a. It is among the roots of a giant ash tree.
   b. It is along the road that goes around the wood.
   c. It is outside the fence of the first house.
   d. It is at the edge of a stream that runs through the wood.

2. ____ How does Tuck feel about Winnie’s arrival at his house?
   a. Tuck is delighted to see Winnie.
   b. Tuck is worried that Winnie’s arrival will give away their secret.
   c. Tuck is annoyed that his peaceful life is being disturbed.
   d. Tuck is angry because Jesse let Winnie see him drink from the spring.

3. ____ What does Tuck fear will happen if people find out about the spring?
   a. People would rush to drink the water but not understand what it really means to live forever.
   b. People would fight over who could drink the water first.
   c. People would use up all the water in the spring.
   d. People would try to steal the water and sell it to other.

4. ____ Why do the Fosters agree to give their wood to the man in the yellow suit?
   a. He will take good care of the wood and be a helpful neighbor.
   b. He threatens that he will harm Winnie if they do not give him the wood.
   c. He says he is friends with Winnie and she wants him to own the wood.
   d. He will tell them where Winnie is only after they sign a paper giving him their wood.

5. ____ Why does Mae hit the man in the yellow suit with a shotgun?
   a. She is angry that the man wants to use Tuck in his demonstrations.
   b. She is upset that he found out about the water by sneaking around.
   c. She doesn’t want him to give the secret away or make Winnie drink the water.
   d. She is worried that the man is going to harm Tuck.
TUCK EVERLASTING ACROSTIC POEM

In an acrostic poem, the letters of a word are written vertically to provide the structure of the poem.

- Choose one character and write an acrostic poem explaining and summarizing the character’s role in the novel.
- An acrostic does not have to rhyme but it can if you want.
- Each line of the poem will begin with a letter of the character’s name.
- Requirements:
  - Every letter of the character’s name should be capitalized.
  - Use figurative language twice in your acrostic.
  - Draw an image that symbolizes the character of your acrostic.
  - Should not be in pencil. Trace over pencil with pen, colored pencil, or markers.
  - Should be colored and should be neat.
  - If you don’t have your own paper, you can use the back of this paper.
- Below is an example of what your acrostic should look like. Pick only one from the following characters. You CANNOT do Mae Tuck =)
  - WINNIE FOSTER
  - JESSE TUCK
  - THE STRANGER
  - MILES TUCK
  - ANGUS TUCK

\[
\begin{align*}
M & \quad \text{Music box she carried around everywhere.} \\
A & \quad \text{Arrested for murdering the man in the yellow suit} \\
E & \quad \text{Escapes prison by switching places with winnie as fast as the lightning striking that night} \\
T & \quad \text{The Stranger has been looking for the Tuck’s ever since his grandmother told him the stories.} \\
U & \quad \text{Unaware that the Stranger followed them he heard their secret} \\
C & \quad \text{Constable walks in just in time to see Mae Boom! hit} \\
K & \quad \text{Kidnaps Winnie only for one day but feels like forever}
\end{align*}
\]
50 BOOK CLUB FORM

Name ____________________________ HR ______ Date ________________

Title All Summer in a Day (pages 313-319)                     Point of View ________
Author ____________________________ Genre ____________________________
Main Characters (If the point of view is 1st person, identify the narrator):
1. ________________________________ 3. ________________________________
2. ________________________________ 4. ________________________________

SUMMARIZE THE STORY

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

50 BOOK CLUB FORM

Name ____________________________ HR ______ Date ________________

Title Eleven (pages 328-330)                     Point of View ________
Author ____________________________ Genre ____________________________
Main Characters (If the point of view is 1st person, identify the narrator):
1. ________________________________ 3. ________________________________
2. ________________________________ 4. ________________________________

SUMMARIZE THE STORY

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
50 BOOK CLUB FORM

Name ___________________________ HR. ___ Date ____________________

Title ___________________________ Point of View __________________
Author __________________________ Genre _______________________
Main Characters (if it’s 1st Person, identify the narrator):
1. ______________________________ 3. _________________________
2. ______________________________ 4. _________________________

SUMMARIZE THE STORY

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

50 BOOK CLUB FORM

Name ___________________________ HR. ___ Date ____________________

Title ___________________________ Point of View __________________
Author __________________________ Genre _______________________
Main Characters (if it’s 1st Person, identify the narrator):
1. ______________________________ 3. _________________________
2. ______________________________ 4. _________________________

SUMMARIZE THE STORY

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
6th Grade Math – MS. MINADEO
(gminadeo@paterson.k12.nj.us)

Weeks 5 and 6

Please check our Google Classroom daily for updates!
ALEKS: 30 Minutes Daily (I will be tracking ALEKS!)

**Day One:** “NJSLA Review Questions”
Assignment: Orange NJSLA Review Booklet pages 24, 37, 38, 45, and 53

**Day Two:** “Numerical Operations and Vocabulary”
Assignment: Envision Workbook Volume 1 page 5

**Day Three:** “Decimal Operations and Coordinate Plane”
Assignment: Envision Workbook Volume 1 pages 63 and 111

**Day Four:** “Solving Expressions with Exponents”
Assignment: Envision Workbook Volume 1 read and complete pages 118-122

**Day Five:** “Solving Expressions and Equations”
Assignment: Envision Workbook Volume 1 page 175

**Day Six:** “Equations and Their Solutions”
Assignment: Envision Workbook Volume 1 read and complete pages 178-181

**Day Seven:** “Divide a Whole Number by a Whole Number”
Assignment: Envision Workbook Volume 1 read and complete page 251

**Day Eight:** “Divide a Fraction By a Fraction”
Envision Workbook Volume 1 read and complete pages 37-41

**Day Nine:** “Ordering Integers and Absolute Value”
Assignment: Envision Workbook Volume 1 read and complete pages 81-84

**Day Ten:** “Writing Algebraic Expressions”
Assignment: Envision Workbook Volume 1 read and complete pages 139-143
Day 21 - Water in the Air

   a. Highlight as you go along - all key, important details
   b. Answer the questions along the side of the reading.
2. Answer questions on page 114.
   May use calculators when needed
   a. Must show work.
   b. Cite where you found your answer.
3. Do the Vocabulary and Section Summary
4. Complete the Section Review.
   May use calculators when needed
   a. Must show work.

Day 22 - Water in the Air

1. Complete the Directed Reading.
   a. May use calculators when needed
   b. Must show work.
   c. Cite where you found your answer.
2. Section Quiz (open book) May also find the quiz on Google Classroom
   Please write your answers on the line with capital print letters or you can take the quiz on Google Classroom
   a. Open book

Day 23 - Air Masses and Fronts

1. Read packet pages 115 - 119.
   a. Highlight as you go along - all key, important details
   b. Answer the questions along the side of the reading.
2. Answer questions on page 120.
   May use calculators when needed
   a. Must show work.
   b. Cite where you found your answer.
3. Do the Vocabulary and Section Summary
4. Complete the Section Review.
   May use calculators when needed

Day 24 - Air Masses and Front cont.

1. Complete the Directed Reading.
   a. May use calculators when needed
   b. Must show work.
   c. Cite where you found your answer.
2. Section Quiz (open book) May also find the quiz on Google Classroom
   Please write your answers on the line with capital print letters or you can take the quiz on Google Classroom
   a. Open book

Day 25 - Severe Weather

1. Read packet pages 121-125.
   a. Highlight as you go along - all key, important details
c. Cite where you found your answer.
2. Do the Reinforcement page

Day 30 - Chapter test
1. Take the Chapter test
   a. Please write your answers on the line with capital print letters or you can take the test on Google Classroom
   b. Open book
BECOME YOU READ
After you read this section, you should be able to answer these questions:
• What are some types of severe weather?
• How can you stay safe during severe weather?

What Causes Thunderstorms?
A thunderstorm is an intense storm with strong winds, heavy rain, lightning, and thunder. Many thunderstorms happen along cold fronts. However, thunderstorms can also happen in other areas. Two conditions are necessary for a thunderstorm to form: warm, moist air near Earth’s surface and an unstable area of the atmosphere.

The atmosphere is unstable when a body of cold air is found above a body of warm air. The warm air rises and cools as it mixes with the cool air. When the warm air reaches its dew point, the water vapor condenses and forms cumulus clouds. If the warm air keeps rising, the clouds may become dark cumulonimbus clouds.

LIGHTNING
As a cloud grows bigger, parts of it begin to develop electrical charges. The upper parts of the cloud tend to become positively charged. The lower parts tend to become negatively charged. When the charges get big enough, electricity flows from one area to the other. Electricity may also flow between the clouds and the ground. These electrical currents are lightning.

Different parts of thunderclouds and the ground can have different electrical charges. When electricity flows between these areas, lightning forms.

Critical Thinking
1. Infer Why does air near the surface have to be moist in order for a thunderstorm to form?

2. Describe How does lightning form?
THUNDER

You have probably seen large lightning bolts that travel between the clouds and the ground. When lightning moves through the air, the air gets very hot. The hot air expands rapidly. As it expands, it makes the air vibrate. The vibrations release energy in the form of sound waves. The result is thunder.

SEVERE THUNDERSTORMS

Severe thunderstorms can cause a lot of damage. They can produce strong winds, hail, flash floods, or tornadoes. Hail can damage crops, cars, and windows. Flash flooding from heavy rain can cause serious property damage. Flash flooding is the leading cause of weather-related deaths. Lightning can start fires and cause injuries and deaths.

How Do Tornadoes Form?

Fewer than 1% of thunderstorms produce tornadoes. A tornado can form when a rapidly spinning column of air, called a funnel cloud, touches the ground. The air in the center of a tornado has low pressure. When the area of low pressure touches the ground, material from the ground can be sucked up into the tornado.

A tornado begins as a funnel cloud that pokes through the bottom of a cumulonimbus cloud. The funnel cloud becomes a tornado when the funnel cloud touches the ground. The pictures below show how a tornado forms.

![Tornado formation images]

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Interactive Textbook 122 Understanding Weather
TORNADO FACTS
About 75% of the world’s tornadoes happen in the United States. Most happen in the spring and early summer. During these times, cold, dry air from Canada meets warm, moist air from the Tropics. This causes the thunderstorms that produce tornadoes.

Most tornadoes last for only a few minutes. However, their strong, spinning winds can cause a lot of damage. An average tornado has wind speeds between 120 km/h and 180 km/h, but some can be much higher. Winds from tornadoes can tear up trees and destroy buildings. They can even be strong enough to lift cars and trailers up into the air. The area damaged by a tornado is usually about 8 km long and 10 to 60 m wide.

How Do Hurricanes Form?
A hurricane is a large, rotating tropical weather system. Hurricanes have wind speeds of over 120 km/h. They can be 160 km to 1,500 km in diameter and can travel for thousands of miles. They are the most powerful storms on Earth. Hurricanes are also called typhoons and cyclones.

Most hurricanes form between 5°N and 20°N latitude or between 5°S and 20°S latitude. They form over the warm, tropical oceans found at these latitudes. At higher latitudes, the water is too cold for hurricanes to form.

Hurricanes can be so large that they are visible from space. This photograph of a hurricane was taken by a satellite.
HOW HURRICANES FORM

A hurricane begins as a group of thunderstorms traveling over tropical ocean waters. Winds traveling in two different directions meet and cause the storm to spin. Because of the Coriolis effect, hurricanes rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

Hurricanes are powered by solar energy. The sun's energy causes ocean water to evaporate. As the water vapor rises in the air, it cools and condenses. A group of thunderstorms form and produce a large, spinning storm. A hurricane forms as the storm gets stronger.

At the center of the hurricane is the eye. The eye is a core of warm, relatively calm air with low pressure and light winds. There are updrafts and downdrafts in the eye. An updraft is a current of rising air. A downdraft is a current of sinking air.

Around the eye is a group of cumulonimbus clouds called the eye wall. These clouds produce heavy rain and strong winds. The winds can be up to 300 km/h. The eye wall is the strongest part of the hurricane.

Outside the eye wall are spiraling bands of clouds called rain bands. These bands also produce heavy rain and strong wind. They circle the center of the hurricane.

The hurricane will continue to grow as long as it is over warm ocean water. When the hurricane moves over colder waters or over land, the storm loses energy. This is why hurricanes are not common in the middle of continents. The storms lose their energy quickly when they move over land.
DAMAGE CAUSED BY HURRICANES

Hurricanes can cause serious damage when they move near or onto land. The strong winds from hurricanes can knock down trees and telephone poles. They can damage or destroy buildings and homes.

Many people think that the winds are the most damaging part of a hurricane. However, most of the damage from hurricanes is actually caused by flooding from heavy rains and storm surges. A storm surge is a rise in sea level that happens during a storm. A storm surge from a hurricane can be up to 8 m high. The storm-surge flooding from Hurricane Katrina in 2005 caused more damage than the high-speed winds from the storm.

How Can You Stay Safe During Severe Weather?

Severe weather can be very dangerous. During severe weather, it is important for you to listen to a local TV or radio station. Severe-weather announcements will tell you where a storm is and if it is getting worse. Weather forecasters use watches and warnings to let people know about some kinds of severe weather. A watch means that severe weather may happen. A warning means that severe weather is happening somewhere nearby.

The table below gives ways to stay safe during different kinds of severe weather.

<table>
<thead>
<tr>
<th>Severe weather</th>
<th>How to stay safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thunderstorms</td>
<td>If you are outside, stay away from tall objects that can attract lightning. If you are in an open area, crouch down. Stay away from water. If you are inside, stay away from windows.</td>
</tr>
<tr>
<td>Tornadoes</td>
<td>During a tornado warning, find shelter quickly in a basement or cellar. If you cannot get to a basement, go to a windowless room in the center of the building (such as a closet or bathroom). If you are outside, lie down in an open field or a deep ditch.</td>
</tr>
<tr>
<td>Floods</td>
<td>Find a high place to wait out the flood. Always stay out of floodwaters.</td>
</tr>
<tr>
<td>Hurricanes</td>
<td>Protect the windows in your home by covering them with wood. Stay inside during the storm. If you are told to leave your home, do so quickly and calmly.</td>
</tr>
</tbody>
</table>
Section 3 Review

SECTION VOCABULARY

hurricane: a severe storm that develops over tropical oceans and whose strong winds of more than 120 km/h spiral in toward the intensely low-pressure storm center.

lightning: an electric discharge that takes place between two oppositely charged surfaces, such as between a cloud and the ground, between two clouds, or between two parts of the same cloud.

thunder: the sound caused by the rapid expansion of air along an electrical strike.

thunderstorm: a usually brief, heavy storm that consists of rain, strong winds, lightning, and thunder.

tornado: a destructive, rotating column of air that has very high wind speeds and that may be visible as a funnel-shaped cloud.

1. Explain Why do thunder and lightning usually happen together?

2. Identify How can severe thunderstorms cause damage?

3. Identify Where do most tornadoes happen?

4. Explain Why do most tornadoes happen in the spring and early summer?

5. Analyze How does energy from the sun power hurricanes?

6. Describe When do hurricanes lose energy?

7. Identify Give three ways to stay safe if you are caught outside in a thunderstorm.
Skills Worksheet

Section Review

Severe Weather

USING KEY TERMS

Complete each of the following sentences by choosing the correct term from the word bank.

- hurricane
- tornado
- storm surge
- lightning

1. Thunderstorms are very active electrically and often cause ____________________

2. A ____________________ forms when a funnel cloud pokes through the bottom of a cumulonimbus cloud and makes contact with the ground.

UNDERSTANDING KEY IDEAS

3. The safest thing to do if you are caught outdoors during a tornado is to
   a. stay near buildings and roads.
   b. head for an open area.
   c. seek shelter near a large tree.
   d. None of the above

4. Describe how tornadoes form.

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________

5. At what latitudes do hurricanes usually form?

   ______________________________________
   ______________________________________
   ______________________________________

6. What is lightning? What happens when lightning strikes?

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
CRITICAL THINKING

8. Identifying Relationships What happens to a hurricane as it moves over land? Explain.

INTERPRETING GRAPHICS
Use the diagram in your textbook for this Section Review to answer the following questions.
9. Describe what is happening at point C.

10. What is point B?

11. What kind of weather can you expect at point A?
Severe Weather

VOCABULARY

In your own words, write a definition of the following terms in the space provided.

1. thunderstorm

2. lightning

3. thunder

4. tornado

5. hurricane
SECTION SUMMARY

Read the following section summary.

• Thunderstorms are intense weather systems that produce strong winds, heavy rain, lightning, and thunder.

• Lightning is a large electrical discharge that occurs between two oppositely charged surfaces. Lightning releases a great deal of energy and can be very dangerous.

• Tornadoes are small, rotating columns of air that touch the ground and can cause severe damage.

• A hurricane is a large, rotating tropical weather system. Hurricanes cause strong winds and can cause severe property damage.

• In the event of severe weather, it is important to stay safe. Listening to your local TV or radio station for updates and remaining indoors and away from windows are good rules to follow.
Skills Worksheet
Directed Reading A

Section: Severe Weather
1. Weather that can cause property damage and sometimes death is called _________________.

THUNDERSTORMS
2. Which of the following atmospheric conditions produces thunderstorms?
   a. warm, moist air near Earth's surface and an unstable atmosphere
   b. cold, dry air near Earth's surface and an unstable atmosphere
   c. an unstable atmosphere
   d. warm, moist air near Earth's surface

3. Which type of cloud would most likely produce a thunderstorm?
   a. stratus cloud
   b. cirrus cloud
   c. cumulus cloud
   d. cumulonimbus cloud

4. A usually brief and heavy storm with rain, strong winds, lightning, and thunder is called a(n) _________________.

5. An electric discharge between two oppositely charged surfaces is _________________.

6. Name three places where lightning can happen
   _________________.
   _________________.
   _________________.

7. The sound caused by air rapidly expanding along a lightning strike is called _________________.

8. Name four dangerous conditions that severe thunderstorms can produce.
   _________________.
   _________________.
   _________________.
   _________________.

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Holt Science and Technology 8  Understanding Weather
TORNADOES

9. What is a destructive, rotating air column with very high wind speeds that touches the ground?
   a. thunderstorm
   b. tornado
   c. severe thunderstorm
   d. occluded front

10. In what percent of thunderstorms do tornadoes occur?
    a. 10%
    b. 20%
    c. 1%
    d. 5%

11. What is the relationship between a funnel cloud and a tornado?

12. What causes a column of air spinning like a roll of toilet paper to turn to a vertical position?

13. What happens when the spinning column of air moves to the bottom of the cumulonimbus cloud?

14. Why do most tornadoes in the United States occur in the spring and early summer?

15. Why are tornadoes able to cause so much damage?
**HURRICANES**

16. In order to be called a hurricane, a storm must
   a. cause much damage.
   b. travel thousands of miles.
   c. form over the Pacific Ocean.
   d. have wind speeds of at least 120 km/h.

17. What is a cyclone?
   a. a tornado
   b. a storm in the Pacific Ocean
   c. a hurricane that forms over the Indian Ocean
   d. the second most powerful storm on Earth

18. Hurricanes do not form in higher latitudes because
   a. the water is too warm.
   b. there is not enough wind.
   c. the water is too cold.
   d. they cannot travel that far

19. What causes a group of thunderstorms to become a hurricane?

20. Where does the energy that fuels a hurricane come from?

21. Why does a hurricane begin to die when it reaches land?

---

Match the correct description with the correct term. Write the letter in the space provided.

22. clouds that spiral around the center of a hurricane
   a. eye
   b. eye wall
   c. rain bands

23. cumulonimbus clouds that produce strong winds and heavy rains

24. core of warm, calm air
25. In what two ways can a hurricane cause a great deal of damage?

SEVERE WEATHER SAFETY

26. Which is NOT a safety measure during a thunderstorm?
   a. Stand near a tree.
   b. Stay low to the ground
   c. Stay away from water.
   d. Listen to the radio.

27. What does a tornado warning mean?
   a. that a tornado will strike your area soon
   b. that the possibility of a tornado exists
   c. that a tornado has been spotted
   d. that the weather is likely to produce tornadoes

28. What is the most important safety measure during a hurricane?
   a. Get plenty of food and water
   b. Leave your home
   c. Board up your windows
   d. Do not go outside.
Section Quiz

Section: Severe Weather

Write the letter of the correct answer in the space provided.

1. The most powerful storms on Earth are
   a. tornadoes.
   b. thunderstorms.
   c. hurricanes.
   d. hailstorms.

2. What kind of weather would cumulonimbus clouds likely bring?
   a. clear and sunny
   b. hurricane
   c. light rain
   d. thunderstorm

3. A tornado is dangerous mostly because of its
   a. heavy rains.
   b. lightning.
   c. strong winds.
   d. storm surge.

4. Which describes the eye of a hurricane?
   a. brings winds of up to 300 km/h
   b. has warm, calm air and light winds
   c. has strong, spinning winds
   d. has spiraling bands of heavy rain

5. Which statement about lightning is true?
   a. It is one of the most dangerous parts of a thunderstorm.
   b. It is an electric discharge between two similarly charged surfaces.
   c. It is caused by the rapid expansion of air along an electrical strike.
   d. It always begins in a cloud and strikes the Earth.

6. Finding a high place to wait is a safety measure during a
   a. thunderstorm.
   b. tornado.
   c. hurricane.
   d. flash flood.

7. Wind moving in two directions over a prairie makes air in the middle spin. This is the beginning of a
   a. hurricane.
   b. thunderstorm.
   c. hailstorm.
   d. tornado.
What Is a Weather Forecast?
Weather affects how you dress and how you plan your day. Severe weather can put people in danger. Therefore, accurate weather forecasts are important. A *weather forecast* is a prediction of weather conditions over the next few days. Meteorologists make weather forecasts using information on atmospheric conditions.

Meteorologists use special instruments to collect data. Some of these instruments are far above the ground. Others are tools you may be familiar with from everyday use.

WEATHER BALLOONS
*Weather balloons* carry electronic equipment. The equipment on a weather balloon can measure weather conditions as high as 30 km above Earth's surface. This equipment measures temperature, air pressure, and relative humidity. It transmits the information to meteorologists using radio signals. Meteorologists can track the path of the balloons to measure wind speed and direction.

Weather balloons carry equipment into the atmosphere. They use radio signals to transmit information on weather conditions to meteorologists on the ground.

National Science Education Standards
ES 1L.1a

**STUDY TIP**
Compare As you read this section, make a chart comparing the different tools that meteorologists use to collect weather data.

**READING CHECK**
1. Explain What do meteorologists use to forecast the weather?

**TAKE A LOOK**
2. Describe How do meteorologists obtain the information from weather balloons?
THERMOMETERS AND BAROMETERS

Remember that air temperature and pressure can affect the weather. Therefore, meteorologists must be able to measure temperature and pressure accurately. They use thermometers to measure temperature, just like you do. They use tools called barometers to measure air pressure.

WINDSOCKS, WIND VANES, AND ANEMOMETERS

Meteorologists can use windsocks and wind vanes to measure wind direction. A windsock is a cone-shaped cloth bag that is open at both ends. The wind enters through the wide end and leaves through the narrow end. The wide end always points into the wind.

A wind vane is shaped like an arrow. It is attached to a pole. The wind pushes the tail of the arrow. The vane spins until the arrow points into the wind.

An anemometer measures wind speed. It has three or four cups connected to a pole with spokes. The wind pushes on the open sides of the cups. This makes them spin on the pole. The spinning of the pole produces an electric current, which is displayed on a dial. The faster the wind speed, the stronger the electric current, and the further the dial moves.

RADAR AND SATELLITES

Scientists use radar to locate fronts and air masses. Radar can locate a weather system and show the direction it is moving. It can show how much precipitation is falling, and what kind of precipitation it is. Most television stations use radar to give information about weather systems. weather satellites orbiting Earth produce images of weather systems. Satellites can also measure wind speeds, humidity, and temperatures from different altitudes. Meteorologists use weather satellites to track storms.

Critical Thinking
3. Infer Why is it important for meteorologists to be able to measure wind direction?

TAKE A LOOK
4. Identify What is an anemometer?

READING CHECK
5. Describe Give two things that meteorologists can use radar to do.
What Are Weather Maps?
In the United States, two main groups of scientists collect weather data. One group is the National Weather Service (NWS). The other group is the National Oceanic and Atmospheric Administration (NOAA). These groups gather information from about 1,000 weather stations across the United States to produce weather maps.

READING A WEATHER MAP
Some weather maps contain station models. A station model is a symbol that shows the weather at a certain location. Station models look like circles with numbers and symbols around them. The numbers and symbols stand for different measurements, as shown below.

- Different symbols represent different kinds of precipitation. For example, two dots mean light rain.
- Temperature (°F)
- The way this circle is filled in shows the cloud cover in the area. For example, this pattern indicates patchy clouds.
- Dew point temperature (°F)
- This number represents the air pressure.
- The markings on the end of this bar indicate wind speed. The more bars there are, the faster the wind speed.
- The direction that this bar points shows the wind direction. For example, here the wind is blowing southwest.

Some weather maps, such as those you see on television, show lines called isobars. Isobars are lines that connect points of equal air pressure. They are similar to contour lines on a topographic map. Isobars that form closed circles represent areas of high (H) or low (L) pressure. Weather maps also show fronts.

TAKE A LOOK
7. Use a Model What is the dew point temperature for the station shown in the figure?

8. Infer Will condensation happen in the air at the station in the figure? Explain your answer.

TAKE A LOOK
9. Read a Map On the map, circle the areas of high pressure.
Section 4 Review

SECTION VOCABULARY

<table>
<thead>
<tr>
<th>anemometer</th>
<th>an instrument used to measure wind speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>barometer</td>
<td>an instrument that measures atmospheric pressure</td>
</tr>
<tr>
<td>thermometer</td>
<td>an instrument that measures and indicates temperature</td>
</tr>
</tbody>
</table>

1. Compare  How is an anemometer different from a windsock or a wind vane?

2. Identify  What three atmospheric conditions do weather balloons measure?

3. Describe  Give three things that meteorologists use weather satellites for.

4. Apply Concepts  Which of the two weather stations below is experiencing higher air temperatures? Which is experiencing higher wind speeds?

   - Station A: 38 °C, 27 °C, 196 K
   - Station B: 15 °C, 10 °C, 190 K

5. Apply Concepts  In which direction is the wind blowing at station A? In which direction is it blowing at station B?
Forecasting the Weather

Using Key Terms

1. In your own words, write a definition for each of the following terms:
   - thermometer
   - barometer
   - anemometer

2. Which of the following instruments measures air pressure?
   - a. thermometer
   - b. barometer
   - c. anemometer
   - d. windsock

3. How does radar help meteorologists forecast the weather?

4. What does a station model represent?
Section Review continued

MATH SKILLS

5. If it is 75°F outside, what is the temperature in degrees Celsius?
   (Hint: °F = (°C × 9/5) + 32) Show your work below.

CRITICAL THINKING

6. Applying Concepts  Why would a meteorologist compare a new weather map
   with one that is 24 h old?

7. Making Inferences  In the United States, why is weather data gathered from a
   large number of station models?

8. Making Inferences  How might several station models from different regions
   plotted on a map help a meteorologist?
Forecasting the Weather

VOCABULARY

In your own words, write a definition of the following terms in the space provided.

1. thermometer
   
2. barometer
   
3. anemometer
   

SECTION SUMMARY

Read the following section summary.

- Meteorologists use several instruments, such as weather balloons, thermometers, barometers, anemometers, windsocks, weather vanes, radar, and weather satellites, to forecast the weather.
- Station models show the weather conditions at various points across the United States.
- Weather maps show areas of high and low pressure as well as the location of fronts.
SECTION: FORECASTING THE WEATHER

1. How far ahead does a weather forecast predict the weather?

2. A person who makes weather predictions based on data on atmospheric conditions is a(n) ____________

WEATHER-FORECASTING TECHNOLOGY

Match the correct description with the correct term. Write the letter in the space provided.

_____ 3. measures wind direction    a. anemometer
_____ 4. carries electronic equipment that measures weather conditions above Earth’s surface    b. windsock
c. barometer
d. weather balloon
e. thermometer
_____ 5. measures air pressure
_____ 6. measures air temperature
_____ 7. measures wind speed

8. Weather balloons carry equipment that measures what three things?

9. How do weather balloons send measurements to weather stations on the ground?

10. The liquid in a thermometer moves up the glass tube when the air temperature ____________________
11. How does a barometer work?

12. The technology that shows the form, amount, and location of precipitation is called _________________.

13. What is a special type of radar meteorologists could use to predict when a tornado might touch down?

14. As they orbit Earth, ________________ provide images of weather systems that we see on television weather reports.

**WEATHER MAPS**

15. Where does the National Weather Service get its information for its weather maps?

16. A representation of a weather station on a map is called a(n) _________________.

17. The lines on a weather map that connect points of equal air pressure are _________________.

18. What does an isobar that is a closed circle represent?
Section: Forecasting the Weather

Match the correct description with the correct term. Write the letter in the space provided.

1. measures air pressure  
   a. radar  
   b. thermometer  
   c. anemometer  
   d. barometer  
   e. windsock

2. measures wind speed
3. measures wind direction
4. locates precipitation
5. measures air temperature

Write the letter of the correct answer in the space provided.

6. What is the purpose of isobars?
   a. to measure air pressure  
   b. to describe the weather conditions in a weather station  
   c. to find out what form precipitation will take  
   d. to connect points of equal air pressure on a weather map

7. Images of weather systems on television come from
   a. station models  
   b. weather satellites  
   c. weather balloons  
   d. anemometers

8. Which information can you get from a weather map?
   a. a 5-day weather forecast  
   b. wind speeds and directions  
   c. the locations of cold fronts  
   d. barometric pressure

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Holt Science and Technology  Understanding Weather
Skills Worksheet

Chapter Review

USING KEY TERMS
For each pair of terms, explain how the meanings of the terms differ.
1. relative humidity and dew point

2. condensation and precipitation

3. air mass and front

4. lightning and thunder

5. tornado and hurricane

6. barometer and anemometer

UNDERSTANDING KEY IDEAS
Multiple Choice
7. The process in which water changes from a liquid to gas is called
   a. precipitation.
   b. condensation.
   c. evaporation.
   d. water vapor.

8. What is the relative humidity of air at its dew point?
   a. 0%
   b. 50%
   c. 75%
   d. 100%
9. Which of the following is NOT a type of condensation?
   a. fog
   b. cloud
   c. snow
   d. dew

10. High clouds made of ice crystals are called _____ clouds.
    a. stratus
    b. cumulus
    c. nimbostratus
    d. cirrus

11. Large thunderhead clouds that produce precipitation are called _____ clouds.
    a. nimbostratus
    b. cumulonimbus
    c. cumulus
    d. stratus

12. Strong updrafts within a thunderhead can produce
    a. snow
    b. rain
    c. sleet
    d. hail

13. A maritime tropical air mass contains
    a. warm, wet air
    b. cold, moist air
    c. warm, dry air
    d. cold, dry air

14. A front that forms when a warm air mass is trapped between cold air masses and is forced to rise is a(n)
    a. stationary front
    b. warm front
    c. occluded front
    d. cold front

15. A severe storm that forms as a rapidly rotating funnel cloud is called a
    a. hurricane
    b. tornado
    c. typhoon
    d. thunderstorm

16. The lines connecting points of equal air pressure on a weather map are called
    a. contour lines
    b. highs
    c. isobars
    d. lows

Short Answer

17. Explain the relationship between condensation and dew point.

18. Describe the conditions along a stationary front.

19. What are the characteristics of an air mass that forms over the Gulf of Mexico?
20. Explain how a hurricane forms.

21. Describe the water cycle, and explain how it affects weather.

22. List the major similarities and differences between hurricanes and tornadoes.

23. Explain how a tornado forms.

24. Describe an interaction between weather and ocean systems.

25. What is a station model? What types of information do station models provide?

26. What type of technology is used to locate and measure the amount of precipitation in an area?

27. List two ways to keep yourself informed during severe weather.

28. Explain why staying away from floodwater is important even when the water is shallow.
29. Concept Mapping  Use the following terms to create a concept map: evaporation, relative humidity, water vapor, dew, psychrometer, clouds, and fog.

30. Making Inferences  If both the air temperature and the amount of water vapor in the air change, is it possible for the relative humidity to stay the same? Explain.

31. Applying Concepts  What can you assume about the amount of water vapor in the air if there is no difference between the wet- and dry-bulb readings of a psychrometer?
32. Identifying Relationships Explain why the concept of relative humidity is important to understanding weather.

33. Where are thunderstorms most likely to occur? Explain your answer.

34. What are the weather conditions in Tulsa, Oklahoma? Explain your answer.
Severe Weather

Complete this worksheet after you finish reading the section "Severe Weather." The table below will help you to compare and contrast the different types of severe storms. Fill in the table according to the directions.

1. Describe the conditions under which each storm is most likely to occur. Name the regions where these storms occur most frequently.
2. Describe how each storm forms.
3. In two sentences, describe a possible scene in the aftermath of a severe occurrence of the storm. For example, after a hailstorm many cars might be dented.

<table>
<thead>
<tr>
<th>Conditions/Region</th>
<th>Formation</th>
<th>Aftermath</th>
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</thead>
<tbody>
<tr>
<td>Hallstorm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thunderstorm</td>
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