

Integrated Science

Morris, Schlick, Struempf

Week 3 & 4

April 13th – April 24th



Schedule and Directions for Weeks 3 & 4

Leon High School Distance Learning

Integrated Science

Week 3 (April 13-17):

Monday- Unit 13 Vocab foldable (Directions in folder)

Tuesday- Unit 13 Vocab Crossword Puzzle

Wednesday- Read Unit 13 Reading Passage "Weather" and complete the Information Web

Thursday- Review reading passage and complete Activity G, multiple-choice questions

Friday- Complete all work and turn in by 3 PM.

Week 4 (April 20-24):

Monday- Review Reading Passage and complete Activity I, planning boxes

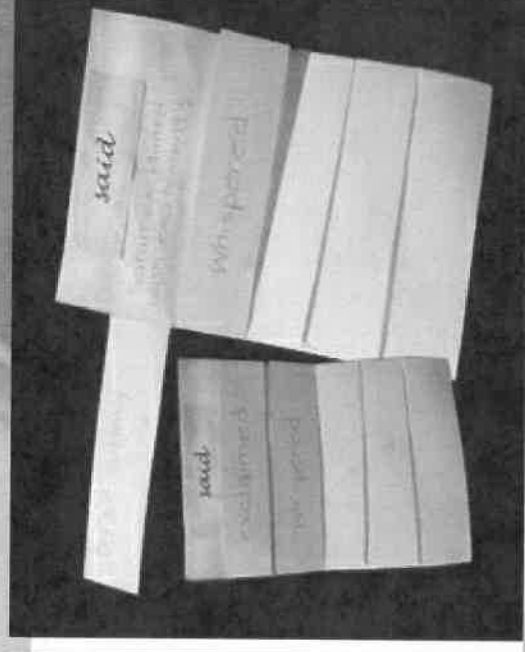
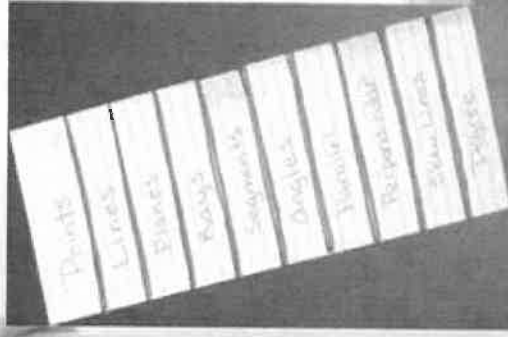
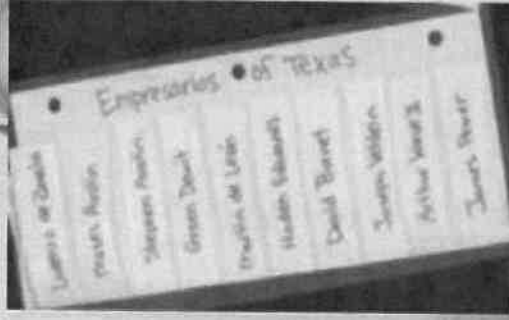
Tuesday- Write the 3 paragraphs using your planning boxes from Activity I

Wednesday- Review Reading Passage and complete Activity J, short answer

Thursday- CommonLit assignment, "Stereotypes Might Make 'Female' Hurricanes Deadlier."

Friday- Complete all work and turn in by 3 PM.

Vocabulary Foldable



- 1. Fold a sheet of notebook paper in half like a *hot dog*.
- 2. On one side, cut every third line. This usually results in ten tabs.
- 3. Label the tabs.

ACTIVITY A Vocabulary

List 1

1. meteorologist *n.* A **meteorologist** is a person who studies the earth's atmosphere and its weather.
2. atmosphere *n.* An **atmosphere** is the air above the earth or other object in space.
3. accompanying *v.* **Accompanying** means going along with or occurring at the same time as something else.
4. hurricanes *n.* **Hurricanes** are storms with violent winds that form over the Atlantic Ocean or eastern Pacific Ocean.
5. tornadoes *n.* **Tornadoes** are dark columns of fast-moving air that pass over land. The column of air is shaped like a funnel.
6. glaciers *n.* **Glaciers** are large, slow-moving masses of ice.
7. associated *v.* When something is **associated** with something else, the things are connected in one's mind.

List 2

1. **alternatively** *adv.* We use the word **alternatively** to talk about something different from or the opposite of what has just been said. **Alternatively** means the same as *on the other hand*.
2. **stationary** *adj.* **Stationary** means not moving.
3. **humidity** *n.* **Humidity** is a measure of the amount of water vapor in the air.
4. **moisture** *n.* **Moisture** usually means small drops of water.
5. **density** *n.* The **density** of something is its thickness.
6. **conditions** *n.* **Conditions** are the way things are; the state of things.
7. **condensation** *n.* **Condensation** is the changing of a gas into a liquid.
8. **precipitation** *n.* **Precipitation** is any form of water falling to earth; it can be rain, snow, sleet, or hail.
9. **dramatically** *adv.* The word **dramatically** is used when something is done in a manner that is powerful, impressively large, or full of emotion.
10. **productivity** *n.* **Productivity** is the quality or state of being **productive**; it is the ability to **produce**.

ACTIVITY B Vocabulary Review

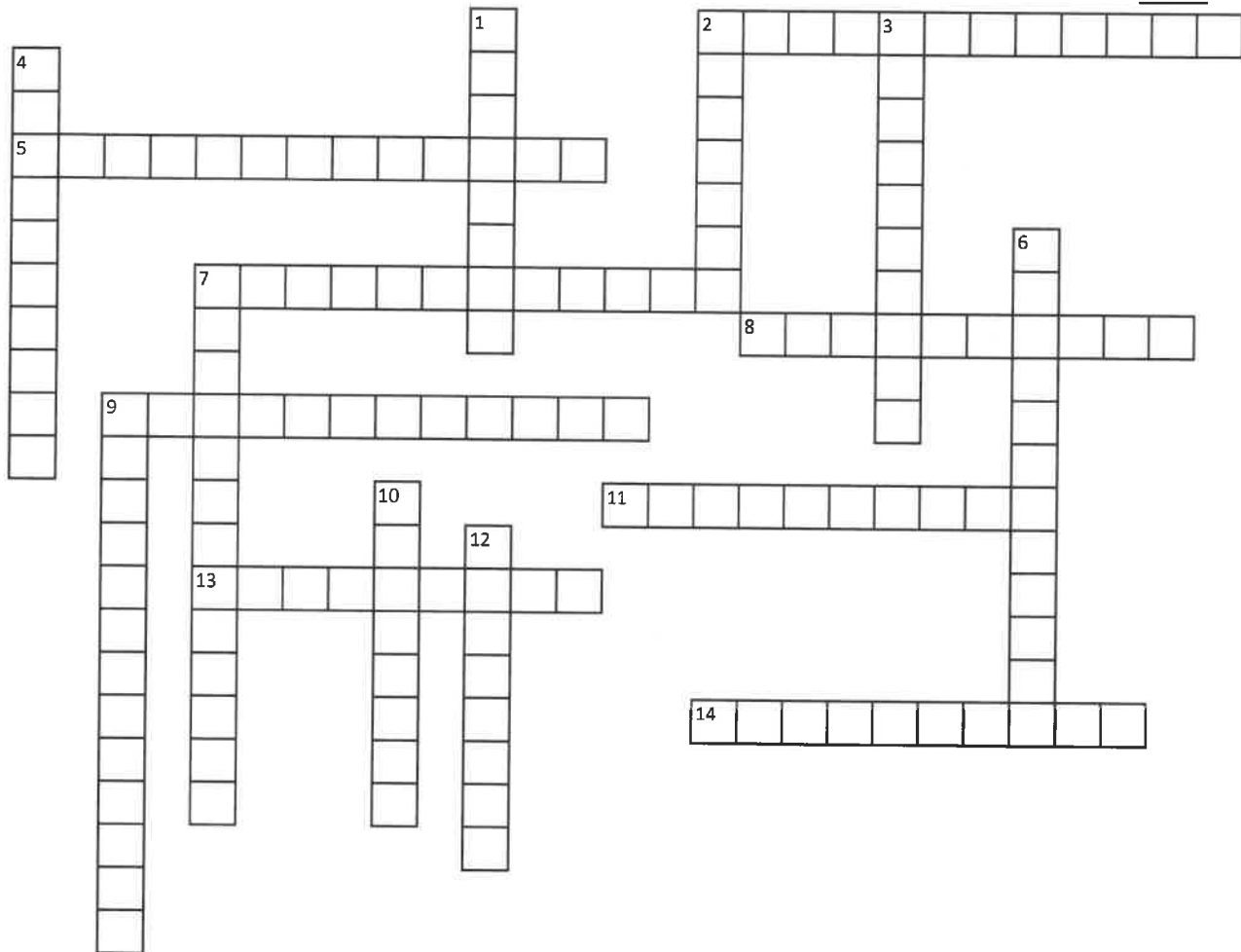
Directions: Look at List 1 or List 2 to find the words your teacher is thinking about.

Tally

LESSON 13 CROSSWORD

Name _____

Period _____



Across

2. by a strikingly large amount or to a great extent
5. a person who studies weather
7. the state or quality of producing something
8. immobile
9. going along with something
11. the state of things
13. destructive, fast-moving air in a funnel shape
14. storms with violent winds that form over warm oceans

Down

1. a measure of the amount of water vapor in the air
2. equal to the mass of an object divided by its volume
3. two things that are connected in some way
4. the gasses surrounding the surface of a planet
6. a change of the state of matter from gas to liquid
7. water falling to earth
9. as another option or possibility
10. massive sheets of ice
12. water in small quantity as vapor, within a solid, or on a surface

ACTIVITY E Passage Reading and Comprehension

Weather

People everywhere talk about the state of the atmosphere. Although they spend more time talking about hurricanes and thunderstorms, most people prefer sunshine and breezes. But why is some weather so violent while other weather is milder by comparison? Before you read about some of the factors that contribute to the weather, you need to understand something about air masses.

How Do Air Masses Behave?

An air mass is an enormous chunk of air in the atmosphere. An air mass can be anywhere from ten miles to a thousand miles wide, and it can be warm or cold. If warm, the entire air mass is warm; if cold, it is uniformly cold. When an air mass becomes warmer, it becomes less dense than the air around it, so the warm air rises. Alternatively, when an air mass becomes cooler and denser, it falls. (Part A-#1)

Marine air masses, whether warm or cold, are full of moisture. Because the sun continuously causes evaporation of the ocean, warm air masses over the ocean contain great quantities of water vapor. The water (a liquid) changes into water vapor (a gas). As a warm air mass rises, it carries water vapor up into the atmosphere. Then the water vapor in the air begins to cool and condense into tiny drops of liquid water. The drops of water get larger and larger, eventually forming clouds. In cold air masses, the water vapor has already cooled and condensed. Once condensation has occurred, and the clouds have become heavier, the clouds produce precipitation over the ocean or over the land. (Part A-#2)

Strong Winds as Factors in the Weather

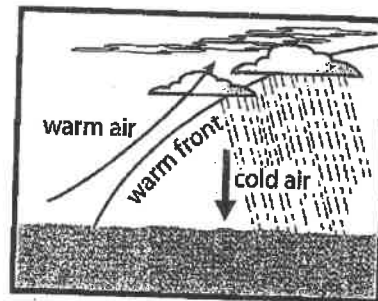
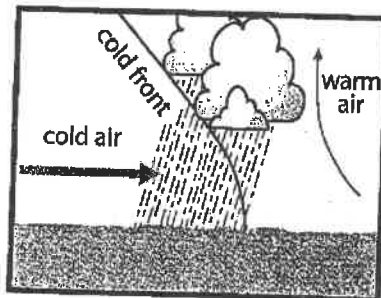
Jet streams are fast-flowing rivers of air that circle the planet from west to east at speeds of 100 miles per hour or more. These strong winds dramatically influence the weather because they push air masses around, sometimes for great distances and sometimes very quickly. For example, if a jet stream moves far into the north, it brings warm air from the tropics with it and pushes the cold air mass away. This causes unusually warm weather for northern locations. (Part B-#3)

349 Movement of Air Masses as a Factor in the Weather

359 When you notice your weather changing, you can be confident that a new air
373 mass is moving into your region. Movement of air masses directly affects weather
386 conditions. As air masses move and collide, the properties of your local weather,
399 such as temperature and humidity, depend upon many details. These details include
411 where the air masses came from, which air mass is doing the pushing, and what
426 type of weather front occurs. (Part C-#4)

431 Cold Weather Front

434 A cold weather front occurs when a cold air mass rushes into a region and
449 moves under a warm air mass, pushing the warm air mass upward. When the colder,
464 denser air takes the place of the warmer, moisture-filled air, tall clouds form, and
479 the probability of heavy rains or thunderstorms is high. Sometimes the density of
492 the cold air mass is greatly different from the density of the warm air mass. The
508 greater the difference, the more violent the weather will be. The difference can
521 result in hailstorms or tornadoes. Usually, severe weather doesn't last very long, but
534 it can be more damaging or destructive than weather that lasts longer. (Part C-#5)



546 Warm Weather Front

549 A warm weather front occurs when a warm air mass moves into a region,
563 bumps into a cold air mass, and rises up over the top of the cold air mass. When the
582 warm air rises up high enough, clouds form and rain begins to fall. The rain can last
599 for many days. Normally, a warm front is associated with less violent weather than
613 that caused by a cold front. (Part C-#6)

619 Stationary Front

621 A stationary front happens when two air masses collide but neither is stronger
634 than the other. The two air masses stop moving. Usually the rainy weather along
648 a stationary front is more like that of a warm front than a cold front. (Part C-#7)

663 **Surface Temperatures as a Factor in the Weather**

671 An air mass forms over an ocean or over a particular land feature, such as a
687 forest or a desert, and stays there until the wind causes it to move. The new air
704 mass takes on characteristics of the water or the land, such as temperature. On
718 land, light-colored areas of the earth, including glaciers, snowfields, and any area
731 with plants (forests or farms), tend to reflect the sun's energy back into space, so
746 these surfaces are cooler, and the air masses above them are cooler. Dark-colored
760 areas of the earth, including mountains and plowed fields with no vegetation, tend
773 to absorb more of the sun's energy, so these surfaces are warmer, and the air masses
789 above the surfaces are warmer. Roads, cities, and parking lots are also dark-colored
803 areas, so the air masses above these areas are warmer. Deliberate land use could
817 make a significant difference in how the temperature of the land affects the
830 weather. (Part D-#8)

831 **Amounts of Sunlight as a Factor in the Weather**

840 Differing amounts of sunlight cause changes in weather patterns, too. The earth
852 takes a year to rotate around the sun. As it rotates, the earth is tilted toward or
869 away from the sun. When your part of the earth is tilted toward the sun, you have
886 summer and warmer weather. When your part of the earth is tilted away from the
901 sun, you have winter. Varying sunlight throughout the year affects the temperature
913 of the earth's surface and the accompanying air masses, which, in turn, affects the
927 amounts of evaporation, condensation, and precipitation.

933 Amounts of sunlight, surface temperatures, movement of air masses, and strong
944 winds are only a few of the factors that interact to cause weather. If you study to
961 become a meteorologist, you will learn much more. In the meantime, the current
974 weather gives you plenty to talk about. (Part E-#9)
981

ACTIVITY F Rate Development

Cold Timing

Practice 1

Practice 2

Hot Timing

ACTIVITY G Comprehension—Multiple-Choice Questions

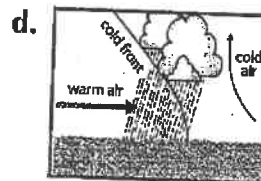
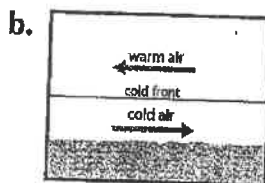
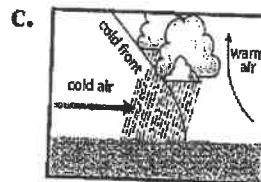
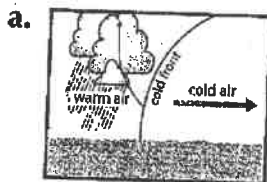
Multiple-Choice Strategy

- Step 1:** Read the item and think about what it is requesting.
- Step 2:** Read each choice and think about why it might be correct or incorrect. Check the text for evidence as needed.
- Step 3:** Read *all* of the choices, even if you think you know which one is correct.
- Step 4:** From the possible correct choices, select the best answer.

1. (Main Idea) **The main idea of this passage is best stated as:**

- The sun affects surface and air temperatures and evaporation of water into the air.
- Weather is affected by many factors, including jet streams, movement of air masses, land and ocean temperatures, and amounts of sunlight.
- To understand changes in the atmosphere, you need to understand cold and warm weather fronts.
- Meteorologists are people who study the weather and explain what is happening with jet streams, movement of air masses, and weather fronts.

2. (Compare and Contrast) **Which diagram best represents a cold front?**



3. (Cause and Effect) **What happens to an air mass that forms over a particular piece of land?**

- The air mass tends to absorb the sun's energy.
- The air mass tends to reflect the sun's energy.
- The air mass causes precipitation to fall on that piece of land.
- The air mass becomes the same temperature as that land.

4. (Vocabulary) **What words or phrases from the passage do *not* mean the same thing?**

- violent and destructive*
- water and water vapor*
- water vapor and gas*
- properties and characteristics*

ACTIVITY I Writing—Multiple Paragraphs

Multi-Paragraph Writing Strategy

- Step 1: LIST** (List the details that are important enough to include in your response.)
- Step 2: CROSS OUT** (Reread the details. Cross out any that you decide not to include.)
- Step 3: CONNECT** (Connect any details that could go into one sentence.)
- Step 4: NUMBER** (Number the details in a logical order.)
- Step 5: WRITE** (Write the paragraph.)
- Step 6: IMPROVE** (Revise, edit, and proofread your response.)

Prompt: Describe how these factors affect weather on the earth: (a) movement of air masses, (b) surface temperatures, and (c) amounts of sunlight.

Planning Box

(topic a)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)

Planning Box (continued)	
(topic b)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	
(topic c)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	
(detail)	

Write: Write *paragraphs a, b, and c* on a separate piece of paper.

ACTIVITY J Writing—Short Answer

Short-Answer Strategy

Step 1: Read the question.

Step 2: Turn the question into part of the answer and write it down.

Step 3: Think of the answer or locate the answer in the passage.

Step 4: Complete your answer.

Step 5: Reread your answer. Ask yourself: Does it make sense? Did I answer all parts of the question?

Prompt:

What Is—Many factors interact to cause weather, including surface temperatures.

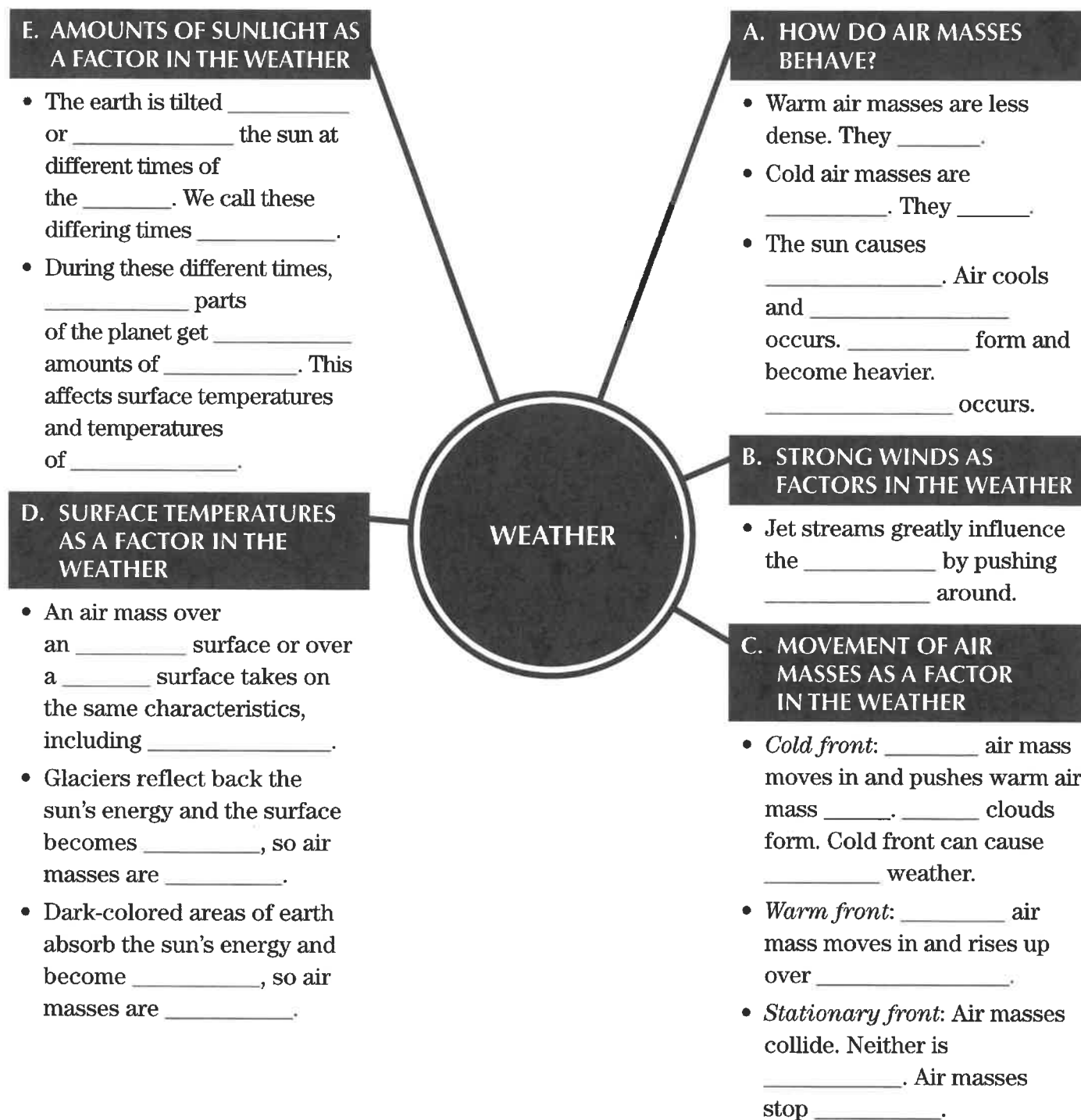
What If—What would happen to the weather if a city continued to get larger? What could a city do to have less effect on the weather?

Write and Discuss: Write a paragraph on a separate piece of paper. Then read Julieta's paragraph with your teacher and share your ideas. Use the Discussion Guidelines below.

Discussion Guidelines

Speaker		Listener	
Looks like:	Sounds like:	Looks like:	Sounds like:
<ul style="list-style-type: none">• Facing peers• Making eye contact• Participating	<ul style="list-style-type: none">• Using pleasant, easy-to-hear voice• Sharing opinions, supporting with facts and reasons from the passage and from your experience• Staying on the topic	<ul style="list-style-type: none">• Facing speaker• Making eye contact• Participating	<ul style="list-style-type: none">• Waiting quietly to speak• Giving positive, supportive comments• Disagreeing respectfully

Reproducible M: Information Web for Unit 13



Name: _____ Class: _____

Stereotypes Might Make 'Female' Hurricanes Deadlier

People may get fatally lax in preparing for severe storms with women's names

By Bruce Bower
From Societyforscience.Org • 2014

For decades, meteorologists have been giving hurricanes and tropical storms human names. Hurricanes are named in alphabetical order, alternating between male and female names. A recent study at the University of Illinois at Urbana-Champaign discovered that due to gender stereotypes, hurricanes given female names are not always treated equally. As you read, take note of the different types and sources of data that the researchers collected and analyzed, and the conclusions they drew.

- [1] People view hurricanes with names such as Alexandra and Kate as less dangerous than hurricanes called, say, Alexander and Danny, reports a team led by business graduate student Kiju Jung and psychologist Sharon Shavitt, both of the University of Illinois at Urbana-Champaign. As a result, those in the path of an oncoming "female" hurricane are less likely to evacuate or take other precautions, upping the storm's death toll, the researchers conclude June 2 in the Proceedings of the National Academy of Sciences.



"Hurricane Jeanne" is licensed under CC BY-NC-ND 2.0.

Other investigators, however, question that conclusion, which they say is based on too little data to give a complete picture.

"Giving human names to hurricanes may bring to mind qualities that are stereotypically associated with women or men, like mildness or aggressiveness, causing perceived qualities of the hurricane to shift toward those traits," Shavitt says.

Her team analyzed data on fatalities¹ caused by 94 Atlantic hurricanes between 1950 and 2012. A severe hurricane with a masculine name caused an average of about 15 deaths, compared with an average of around 42 deaths for a severe hurricane with a feminine name, the researchers estimate. So, changing a severe hurricane's name from, say, Charley to Eloise could nearly triple its death toll.

- [5] In six lab experiments, a total of 745 college students and 516 paid online volunteers read information about the severity of a hurricane with a female or male name. Participants increasingly downplayed the intensity and risk of hurricanes and became less willing to comply with voluntary evacuation requests as names became more feminine. For instance, Hurricane Dolly was viewed as less intense on average than Hurricane Bertha, which was seen as weaker than Hurricane Omar.

1. **Fatality** (noun): death

Don't alert the National Hurricane Center yet, cautions psychologist Clark McCauley of Bryn Mawr College in Pennsylvania. A larger sample of male and female storms is needed to confirm that more people die in female versus male hurricanes, McCauley says. The new study compares female hurricanes that have been named since 1950 with male hurricanes that have been named only since 1979, muddying any trends in the data, he adds. In 1979, federal officials began alternating between male and female names for hurricanes.

Although statistically significant, relationships between hurricane names and volunteers' perceptions of hurricane risk were relatively weak in the new study, McCauley says. Much stronger associations are needed to conclude that sex stereotypes largely accounted for a tripling of death rates from female hurricanes, he contends.

Average death rates for U.S. hurricanes have declined since 1979, consistent with the idea that naming only half the storms after females rather than all of them might have helped to reduce fatalities, Shavitt responds. And in her experiments, volunteers' estimates of storms' riskiness systematically declined as names became more feminine, suggesting that a subtle form of sexism influences people's willingness to prepare for hurricanes, she proposes. Weather officials perhaps should name hurricanes that require evacuation after dangerous animals and find neutral names for those deemed less urgent.

It's far from clear that female stereotypes caused more hurricane deaths in the new study, argues psychologist Yueh-Ting Lee of the University of Toledo in Ohio. Other factors, such as whether storms were strong and fast-moving or moderate and slow-moving, could have affected preparedness and created a false statistical impression that gender expectations played a role, he says.

- [10] Fear-inducing words, not gender references, best motivate people to perceive dangers quickly and take defensive action, Lee proposes. So Hurricane Tiger would cause fewer deaths than Hurricane Pigeon, much like Hurricane Omar compared with Hurricane Dolly, he predicts. Earlier studies found that stereotypes of males as more aggressive than females, and of females as warmer and more caring than males, are generally accurate, he adds. If feminine-named hurricanes are shown to be especially deadly in further studies, it may be due to a tendency to attribute a positive female stereotype to those storms.

Whether people actually take fewer precautions against real-life hurricanes with feminine names than storms with male names is still an open question, says psychologist David Funder of the University of California, Riverside. "A hurricane bearing down on your city surely invokes different psychological processes than reading an online scenario about a hurricane."

"Stereotypes Might Make 'Female' Hurricanes Deadlier" from [societyforscience.org](https://www.societyforscience.org), © 2014, Society for Science. Reprinted with permission, all rights reserved. This article is intended only for single-classroom use by teachers. For rights to republish Science News for Students articles in assessments, course packs, or textbooks, visit: <https://www.societyforscience.org/permission-republish>.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. In your own words, summarize the central ideas of this article. [RI.2]

2. Which sentence best describes how the information in this article is organized? [RI.5]

- A. The author describes the methods used by the researchers to conduct the study, then explains why the study's findings were not scientifically valid.
- B. The author describes the study's findings, then lists the ways in which the study could have been conducted in a more scientifically accurate way.
- C. The author explains the purpose of the study, describes the research methods, then lists the different findings of the study.
- D. The author presents the study's findings, explains how the study was conducted, then presents potential problems with the findings.

3. Explain why the evolving history of naming hurricanes by gender may have resulted in a "muddying" of trends in data, as discussed in paragraph 6. [RI.3]

4. PART A: As it is used in paragraph 5, the word "severity" most closely means: [RI.4]

- A. Strictness
- B. Dangerousness
- C. Cruelty
- D. Difficulty

5. PART B: Which word from the paragraph provides the best context for determining the meaning of "severity"? [RI.1]
- A. Risk
 - B. Downplayed
 - C. Less willing
 - D. Comply



Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Are you surprised by the findings of this study? Why or why not?
2. If the results of the study are true, what strategy would you propose for naming hurricanes? Why?
3. In the context of this article, what are the effects of prejudice? How do stereotypes – particularly gender stereotypes, in this case – impact science, as well as our everyday lives?