Oklahoma Weather

Brought to you by:

by Allison Cassady, Ph.D.

Adaptable for 6th-8th Grade

6th-8th Grade Weather Unit

Resources

News 6 Weather – http://www.newson6.com/category/112040/weather

NASA - http://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html

US Climate Data - http://www.usclimatedata.com/climate/oklahoma-city/oklahoma/united-states/usok0400

American Veterinary Medical Association - https://www.avma.org/

Weather WizKids http://www.weatherwizkids.com/weather-words.htm

Unit Overview and Goal of Unit

To provide students with information about weather, weather safety, weather predicting, and historic weather events.

Thank you so much for downloading News 6's weather unit! In this unit you will find a lesson plan outline as well as worksheets, vocabulary cards, and posters to post in your room. Feel free to use what you want and adapt it for your needs.

6th-8th Grade Lesson Outline

I. Introduction
   a) KWL Chart (included in unit)
      i) K – Have students write what they know about weather specifically addressing the following:
         (1) Weather - the condition of the atmosphere over a short period of time
         (2) Climate - the behavior of the atmosphere over long periods of time
         (3) Meteorology - science that deals with atmosphere, weather, and weather forecasting
         (4) Forces of Nature
         (5) Safety in Severe Weather
      ii) W – Have students write what they know about weather
      iii) L – At the end of the unit or lesson have students go back and fill in what they have learned about weather.

II. Weather vs. Climate
   a) Text Resources
      i) Oklahoma Weather by Gary England

ii) US Climate Data http://www.usclimatedata.com/climate/oklahoma-city/oklahoma/united-states/usok0400
iii) Understanding Weather and Climate by Edward Aguado and James E. Burt
iv) NASA – What's the Difference between Weather and Climate?
v) The Weather Identification Handbook by Storm Dunlop
vi) The Encyclopedia of Weather and Climate Change by Juliane L. Fry and Hans F. Graf

b) Weather – the condition of the atmosphere over a short period of time
c) Climate – the behavior of the atmosphere over long periods of time
d) Weather in Oklahoma
   i) Annual High Temperature – 72 degrees Fahrenheit
   ii) Annual Low Temperature – 50 degrees Fahrenheit
   iii) Average Temperature – 61.5 degrees Fahrenheit
   iv) Average Annual Precipitation – 36 inches
   v) Average Annual Snowfall – 8 inches
e) Climate in Oklahoma - favorable, seasonally varied climate throughout the year. Summers are sunny and warm, winters are bright and cold, fall is crisp, and springs are often wet. During the average year, skies are clear or partly sunny 65 percent of the time.
f) VENN Diagram – have the students compete the VENN diagram comparing weather versus climate

III. Reading Weather Maps
a) Pocket Guide to Weather Forecasting by Ron Cordes
b) Symbols/Definitions
   i) Low Pressure - A whirling mass of warm, moist air that generally brings stormy weather with strong winds. When viewed from above, winds spiral into a low-pressure center in a counterclockwise rotation in the Northern Hemisphere.
   ii) High Pressure – – A whirling mass of cool, dry air that generally brings fair weather and light winds. When viewed from above, winds spiral out of a high-pressure center in a clockwise rotation in the Northern Hemisphere. These bring sunny skies.
   iii) Stationary Front - A boundary between two air masses that more or less doesn't move, but some stationary fronts can wobble back and forth for several hundred miles a day.
   iv) Cold Front – A boundary between two air masses, one cold and the other warm, moving so that the colder air replaces the warmer air.
   v) Warm Front – The boundary between two air masses, one cool and the other warm, moving so that the warmer air replaces the cooler air.
   vi) Precipitation
      (1) Rain
      (2) Snow

(3) Sleet – ice pellets often mixed with rain or snow
(4) Hail – pellets of frozen rain that fall in showers from cumulonimbus clouds

vii) Fujita Scale - The scale that measures the strength of tornadoes based upon wind speed.
(1) F0: winds 40-72 m.p.h. - (Light damage) Branches broken off trees
(2) F1: winds 73-112 m.p.h. - (Moderate damage) Trees snapped and mobile home pushed off foundations
(3) F2: winds 113-157 m.p.h. - (Considerable damage) Mobile homes demolished and trees uprooted
(4) F3: winds 158-206 m.p.h. - (Severe damage) Trains overturned and cars lifted off the ground
(5) F4: winds 207-260 m.p.h. - (Devastating damage) Houses leveled and cars thrown some distance
(6) F5: winds 261-318 m.p.h. - (Incredible damage) Houses lifted and thrown some distance

c) Weather Map Activity – students identify what the weather maps are showing

IV. Predicting Weather

a) Text Resources
i) The Kids' Book of Weather Forecasting by Mark Breen & Kathleen Friestad
ii) Meteorology: The Study of Weather by Christine Taylor-Butler
iii) Guide to Weather Forecasting: All the Information You'll Need to Make Your Own Weather Forecast by Storm Dunlop

b) Weather Broadcast Activity
i) Have students view various weather forecasts at News 9 (http://www.news9.com /weather)
ii) With a partner or in groups have students create a series of weather maps showing predicted weather for a day or week.
iii) Students will then write a weather script and share their broadcast with the class.

V. Forces of Nature

a) Text Resources
i) News 9 Weather Knowledge Center http://www.news9.com/category/198139/knowledge-center
ii) Extreme Weather: Surviving Tornadoes, Sandstorms, Hailstorms, Blizzards, Hurricanes, and More! by National Geographic
iii) Extreme Weather! by Leanne Annett
iv) DK Adventures: Twister! A Terrifying Tale of Superstorms by Samone Bos

b) Storms/High Winds/Tornadoes – Oklahoma can see a variety of extreme weather, primarily thunderstorms that include lightning, heavy rain, hail, and strong winds.

c) Flooding – Flash floods can occur anytime of the year when several hours of intense rain has fallen in an area. Flash floods are the most deadly weather-related cause of death in the US.
d) Snow/Ice – Snow and ice can be a major cause of problems during the winter months in Oklahoma. Ice storms and/or heavy snow can cause travel issues, power outages, and cases of hypothermia.
e) Extreme Heat – Oklahoma can reach temperature highs in the 100s during the summer months with a Heat Index over 110 degrees. This extreme heat can cause a great deal of issues for people, plants, and pets.

VI. Safety in Severe Weather
a) Storms/High Winds/Tornadoes/Flooding
    i) People – Stay weather Aware! Be conscious of the weather by staying tuned in to News 9 Weather. Designate a safe place in your home, either a storm shelter or small interior room on the lowest level possible; have pillows/mattress/blankets/helmets/goggles available in case of tornado; keep your shoes on; take drinking water with you; take flashlight, weather radio, first aid kit, batteries, cell phone with you into shelter or safe place
    ii) In the instance of flooding, move to the highest possible location
    iii) Pets – have a safety plan for your pets; bring pets indoors and/or into storm shelter or safe place in your home; have a leash and/or pet carrier available; have water available for your pets
    iv) Things – secure outdoor toys and furniture so that they are not damaged during severe weather or becoming flying hazards during high winds.
b) Snow/Ice
    i) People – layer clothing, cover your head/hands/feet; take caution in walking outside; limit time outside in extreme cold conditions; take extra caution when driving
    ii) Pets – keep pet inside during extreme cold if possible, if not, provide blankets, beds/houses so pet can get out of weather elements; check pets' paws for signs of damage or frostbite; provide (unfrozen) water for pet
    iii) Things – cover exposed pipes and outdoor faucets/spigots to avoid frozen or broken water pipes; use sand/cat litter/ice melt to sand drive and walkways; keep an emergency kit in your car
    iv) Emergency Kit – include the following items for a winter emergency kit:
        (1) Cell phone
        (2) First aid kit and essential medications
        (3) Battery powered weather radio
        (4) Flashlight

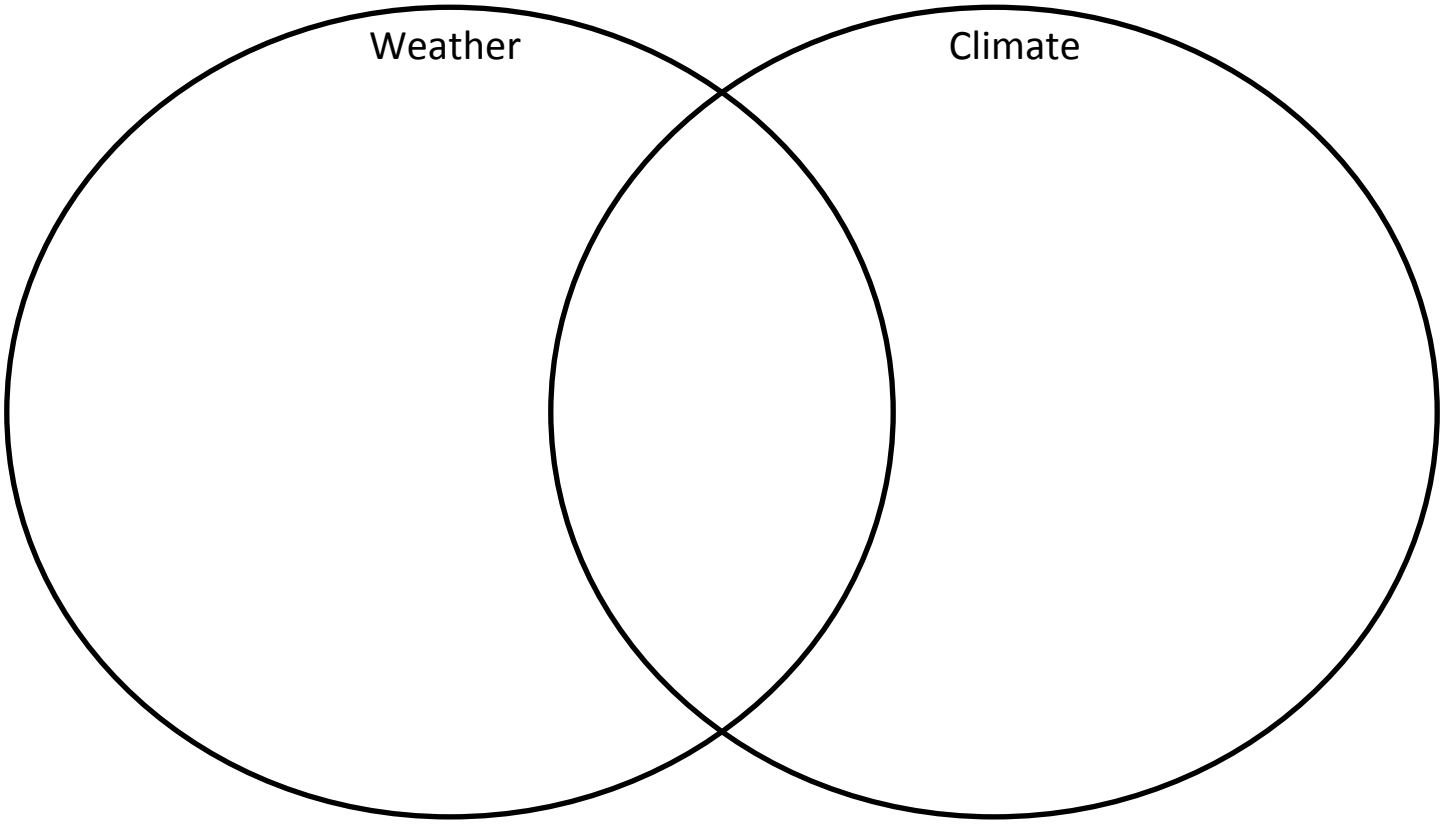
(5) Batteries
(6) Water bottles
(7) Canned food and opener
(8) Extra blankets
(9) Warm clothing

c) Extreme Heat
   i) People – stay hydrated with plenty of water, avoid strenuous outdoor activities during the peak heat of the day, wear sunscreen and lightweight, loose-fitting clothing.
   ii) Pets – provide pets with plenty of water to drink and shade if they must be outside, limit exercise
d) Create an Emergency Plan – have students make a safety plan for all forms of severe weather discussed.

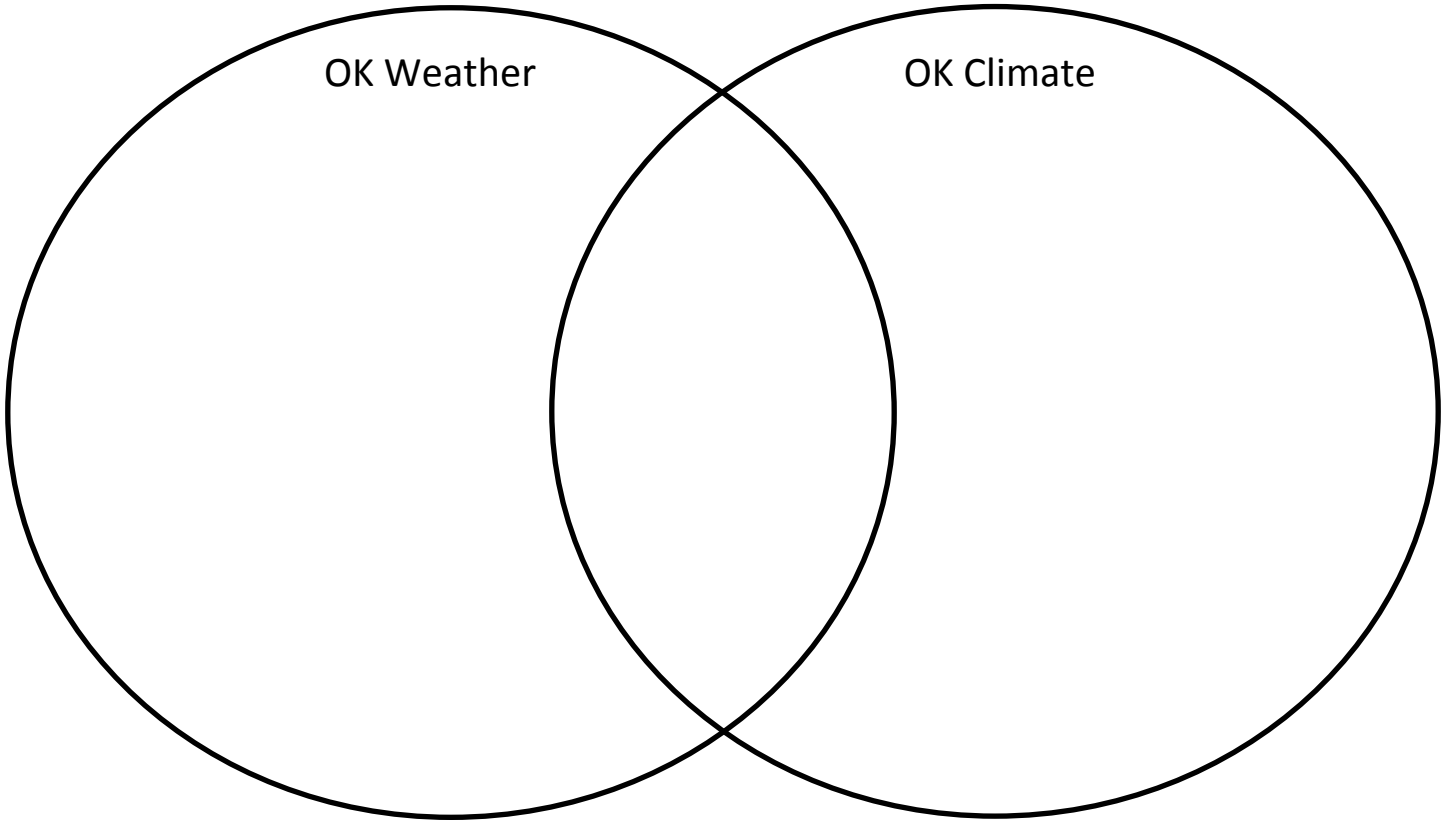
VII. Closing
a) Go back and fill out the "What I Learned" section of the KWL chart
b) Have students complete the Unit Exam

K	W	L
What do you already KNOW about weather?	What do you WANT to know about weather?	What did you LEARN about weather?

Weather vs. Climate



Oklahoma Weather vs. Oklahoma Climate



WEATHER SYMBOLS

Cool Front

H

High

Warm Front

Stationary Front

L

Low

Thunderstorm

Rain

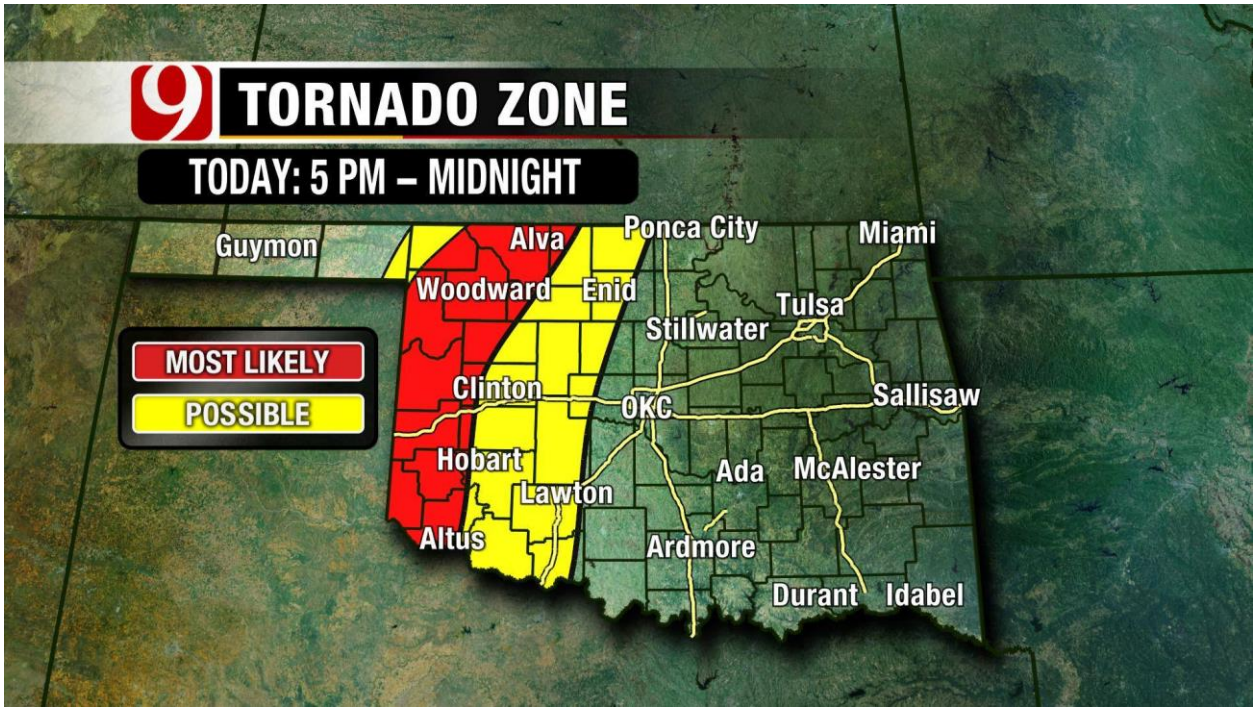
Partly Cloudy

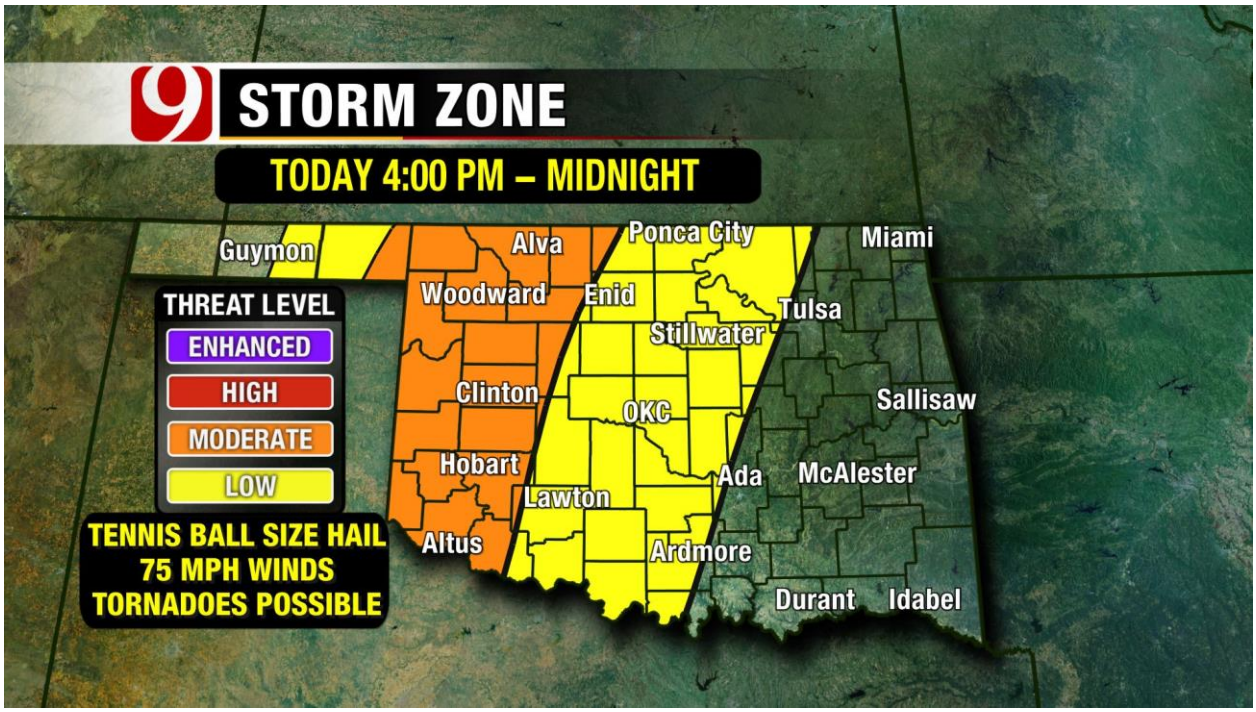
Sunny

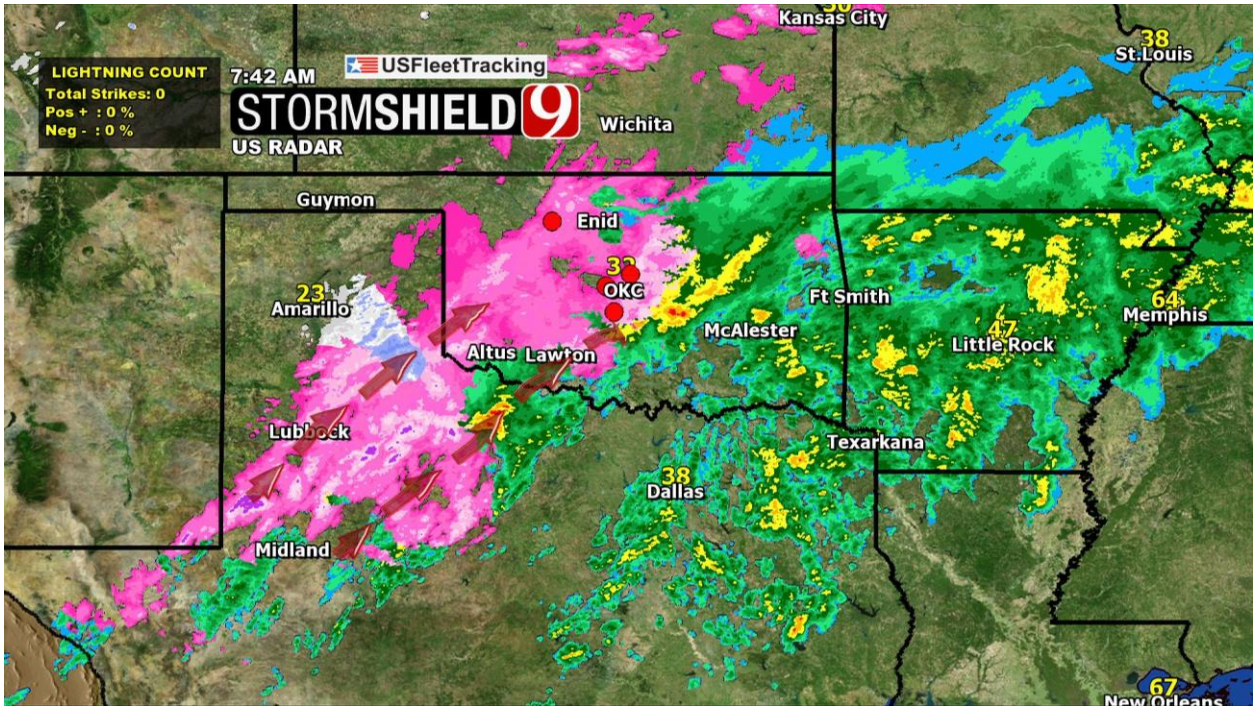
Cloudy

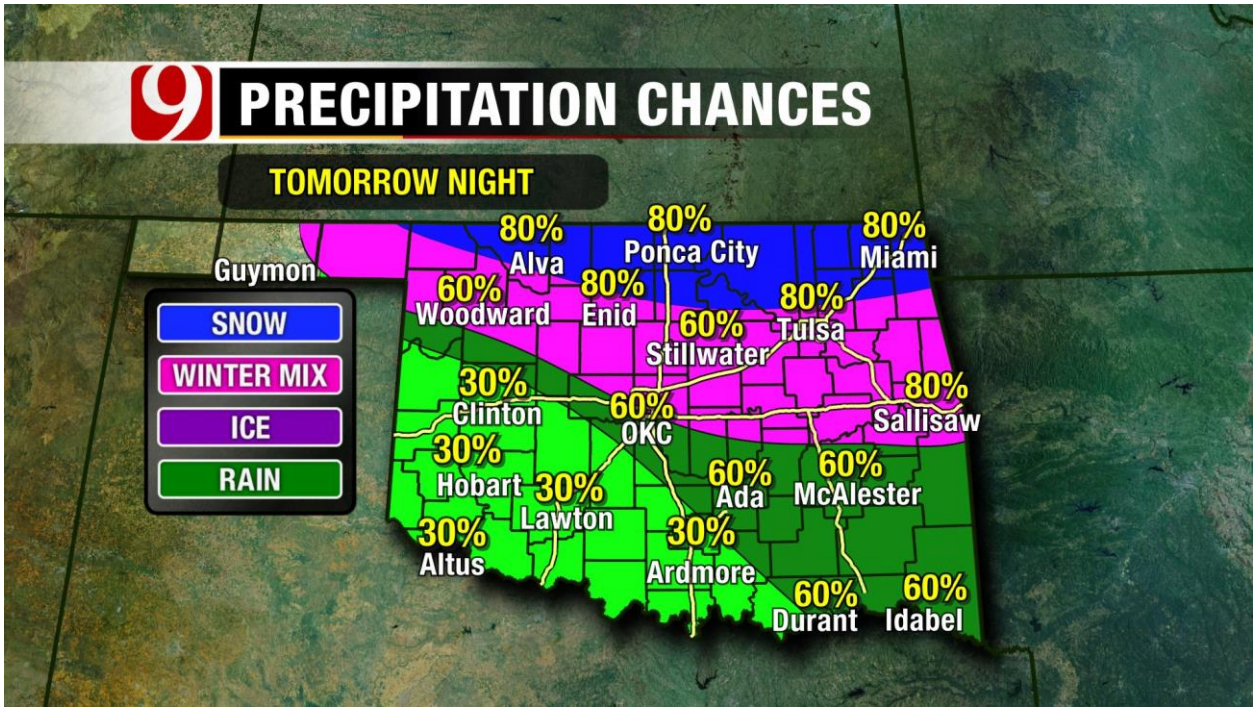
Snow

SAMPLE WEATHER MAPS






LIGHTNING COUNT
Total Strikes: 0
Pos + : 0 %
Neg - : 0 %
7:42 AM
USFleetTracking
STORMSHIELD 9
US RADAR
Kansas City
38
St.Louis
Wichita
Guymon
Enid
3
OKC
23
Amarillo
Ft Smith
64
Memphis
McAlester
47
Little Rock
Altus
Lawton
Lubbock
Texarkana
38
Dallas
Midland
67
New Orleans


PRECIPITATION CHANCES
TOMORROW NIGHT
SNOW
WINTER MIX
ICE
RAIN
Guymon
80%
Alva
80%
Ponca City
80%
Miami
60%
Woodward
80%
Enid
80%
Tulsa
60%
Stillwater
30%
Clinton
60%
OKC
80%
Sallisaw
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Hobart
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Ardmore
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Durant
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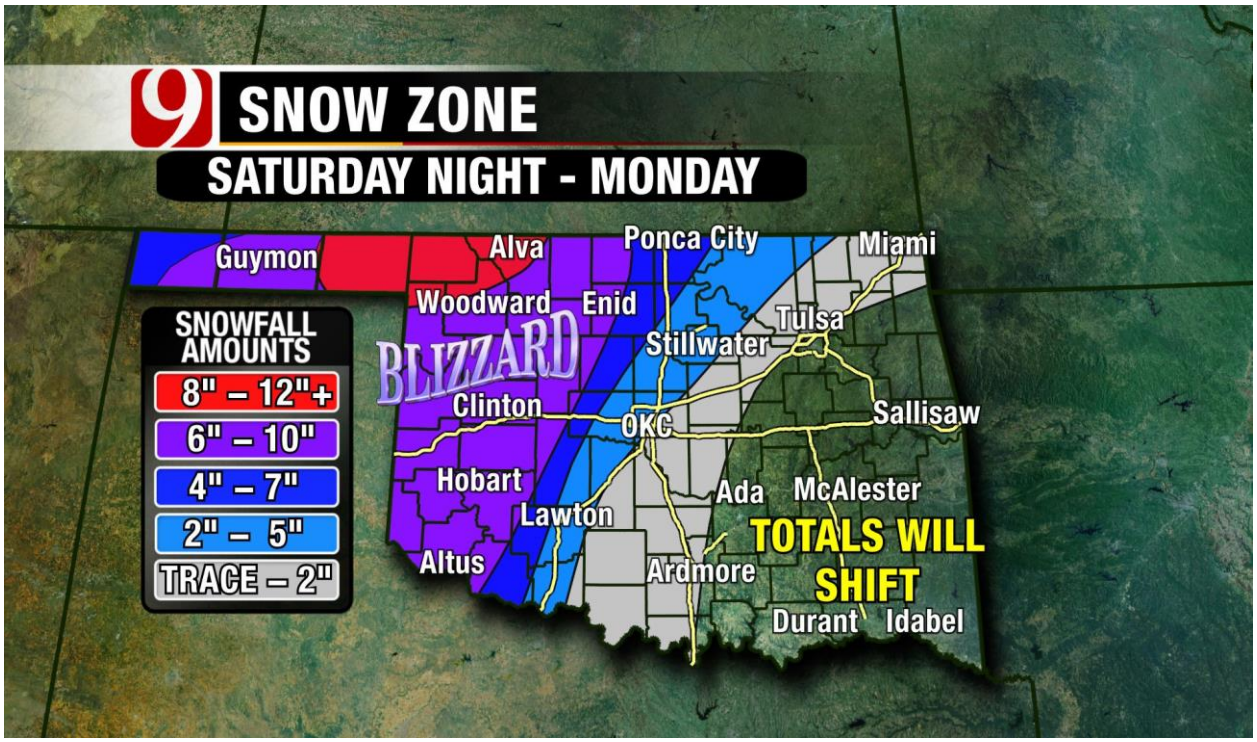
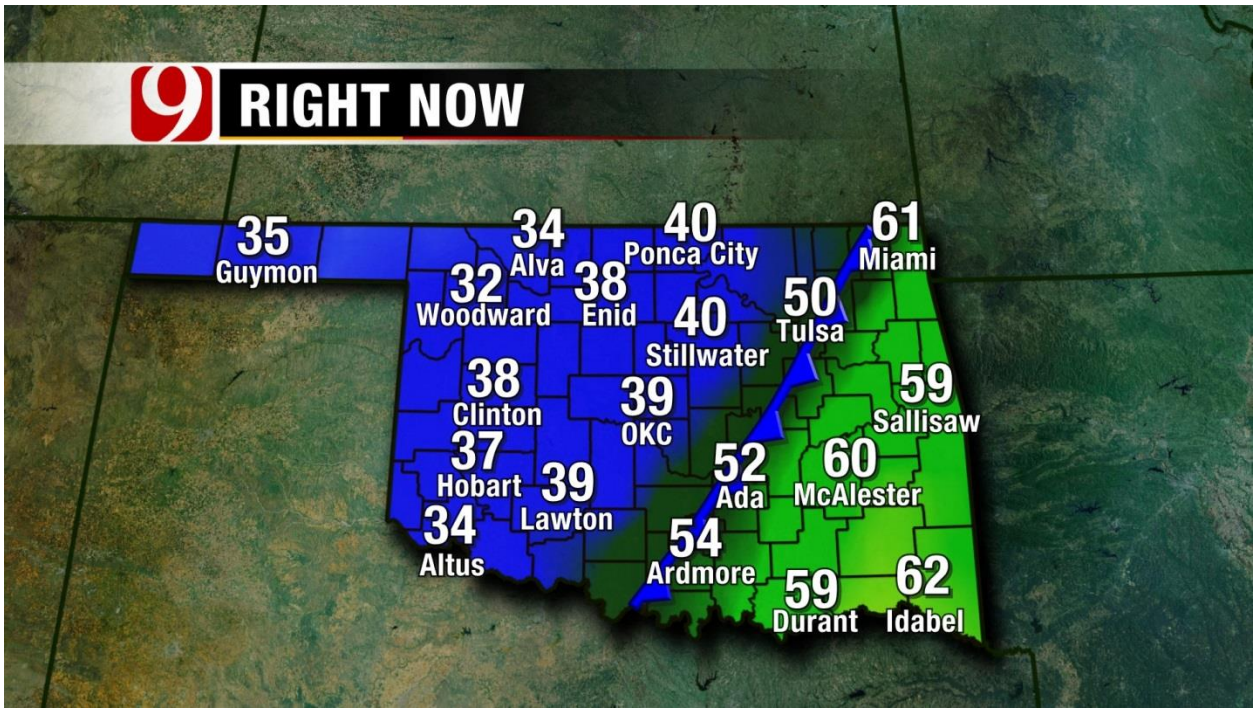
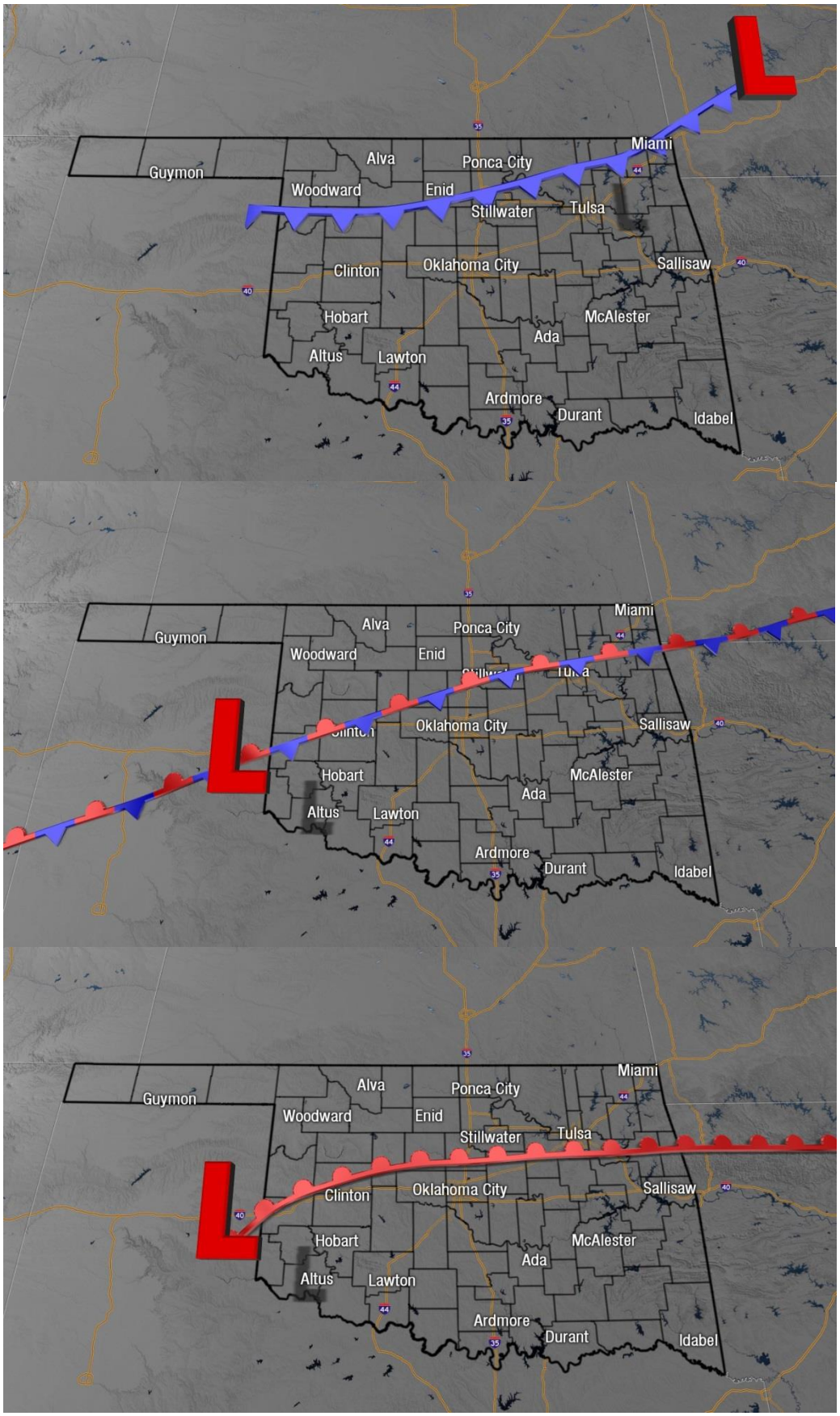
Idabel


SNOW ZONE
SATURDAY NIGHT - MONDAY
SNOWFALL AMOUNTS
8" – 12"+
6" – 10"
4" – 7"
2" – 5"
TRACE – 2"
BLIZZARD
Guymon
Alva
Ponca City
Miami
Woodward
Enid
Tulsa
Stillwater
Clinton
OKC
Sallisaw
Hobart
Lawton
Ada
McAlester
Altus
Ardmore
TOTALS WILL SHIFT
Durant
Idabel


RIGHT NOW
35 Guymon
34 Alva
40 Ponca City
61 Miami
32 Woodward
38 Enid
40 Stillwater
50 Tulsa
38 Clinton
39 OKC
59 Sallisaw
37 Hobart
39 Lawton
52 Ada
60 McAlester
34 Altus
54 Ardmore
59 Durant
62 Idabel


Guymon
Alva
Ponca City
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Woodward
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Stillwater
Tulsa
Clinton
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Sallisaw
Hobart
McAlester
Ada
Altus
Lawton
Ardmore
Durant
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Guymon
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Miami
Woodward
Enid
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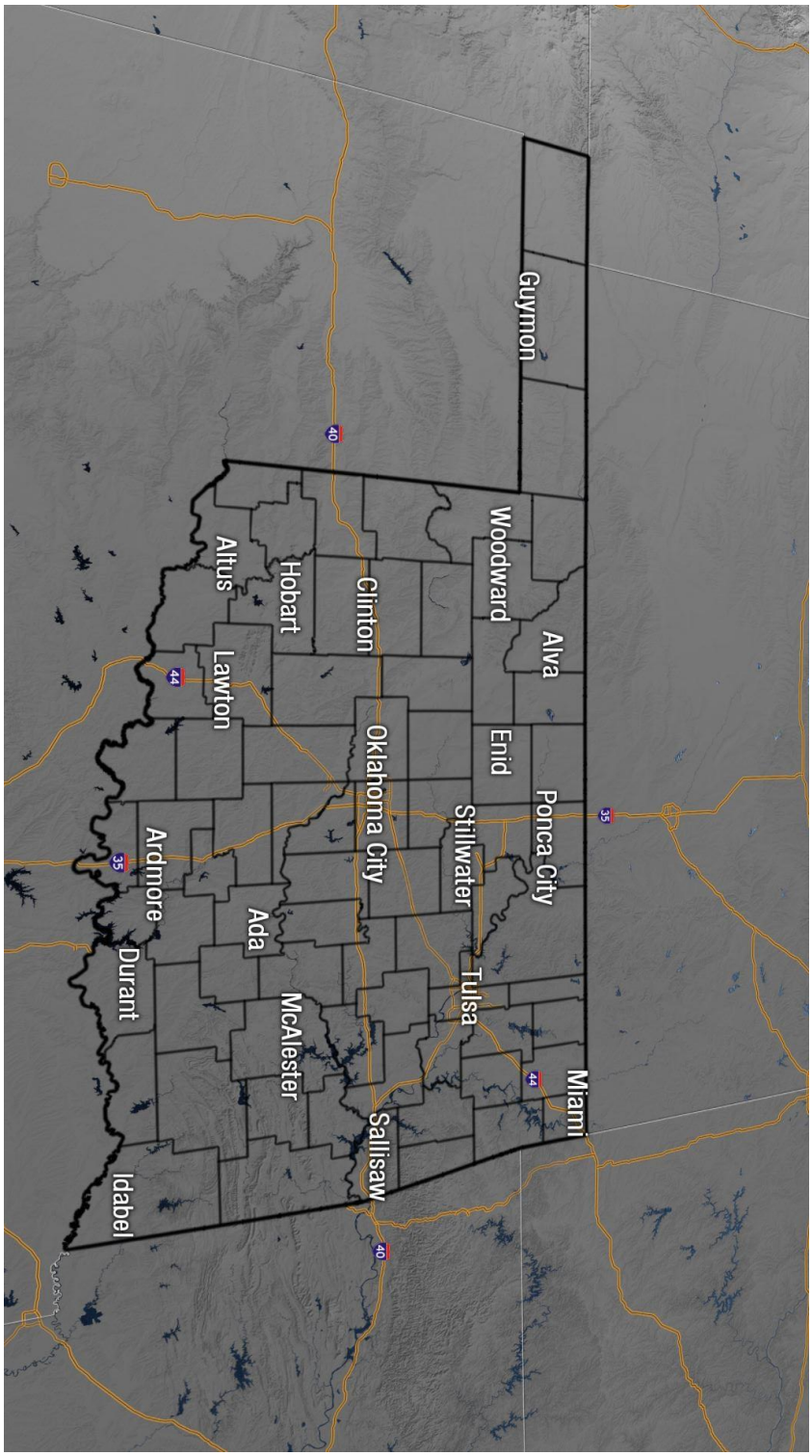
PREDICT YOUR OWN WEATHER

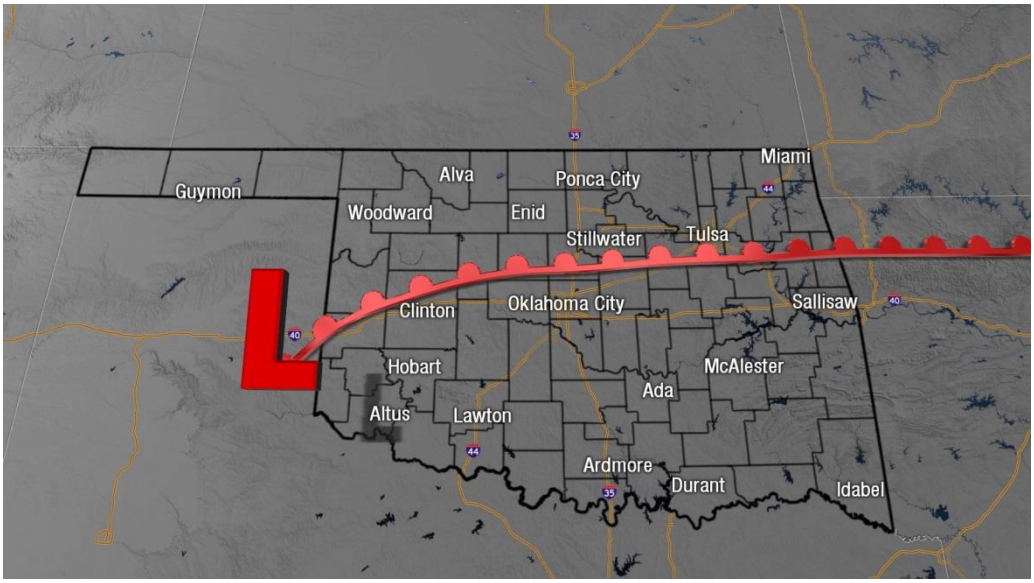


SEVERE WEATHER PLAN

Thunderstorm/High Winds/Tornadoes		Flooding	
What to take:			
Where to go:			
What to be aware of:			
Snow/Ice		Extreme Heat	
What to take:			
Where to go:			
What to be aware of:			

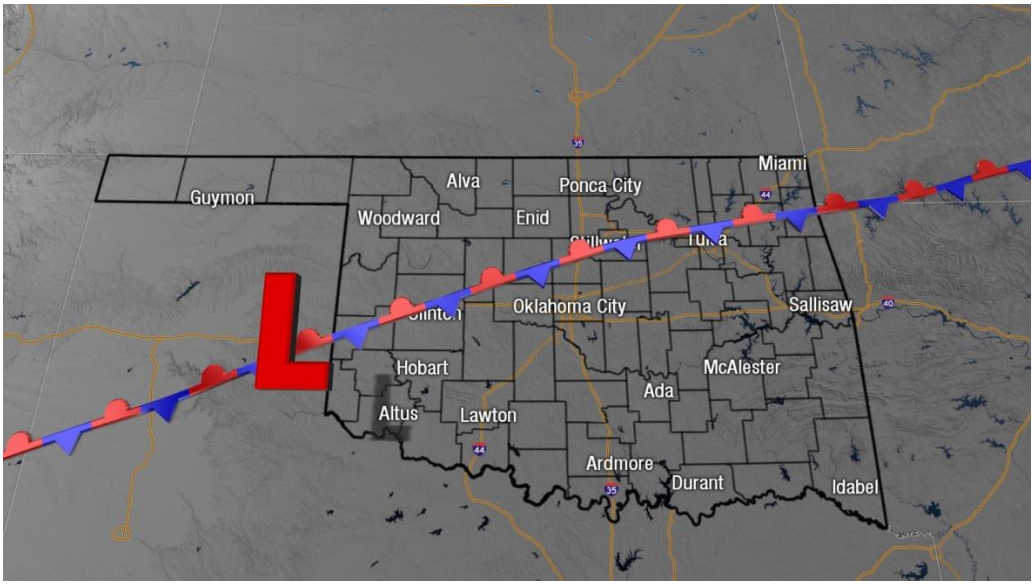
WEATHER QUIZ

Identify the symbols on the weather map and give a written weather prediction:



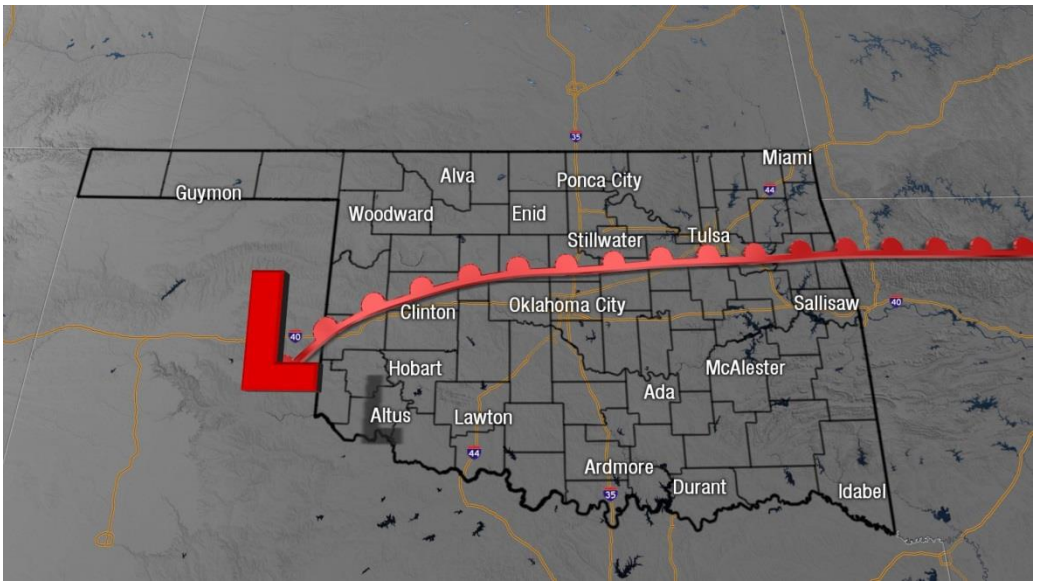
1._____

Identify the symbols on the weather map and give a written weather prediction:



2. _____

Identify the symbols on the weather map and give a written weather prediction:



3. _____

Label the symbols:

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. Compare and contrast <u>weather</u> and <u>climate</u>: