



UNITED ARAB EMIRATES  
MINISTRY OF EDUCATION



Grade 3 • Unit 4

Student Edition

# Inspire Science

UAE Edition  
Grade 3  
2021-2022

Mc  
Graw  
Hill



## LESSON 1

# Weather Patterns



طقس

# What the air is like outside







sunny



windy



stormy

What's the  
**weather**  
like today?



partly cloudy



cloudy



rainy



snowy



**Mostly sunny**

**Partly cloudy**










# Lesson- Weather pattern

## Lesson – Weather pattern

Identify the weather in Abudhabi

January 2023

Mon 23		
Tue 24		
Wed 25		
Thu 26		
Fri 27		
Sat 28		
Sun 29		

## Word box

Sunny

Rainy

Cloudy

Mostly sunny

Partly cloudy

أجواء

Atmosphere

It is a blanket of gases and dust that surrounds the earth.



When George woke up, there were dark clouds in the sky. On his way to school, it rained. When he walked home from school with his friends, the Sun was shining. There were white clouds in the sky. George and his friends had different ideas about the clouds.

This is what they said:

George: I think the dark clouds are the only ones that contain water.

~~When they get very dark, the water falls as rain.~~

Kamila: I think dark and white clouds contain water. Only the dark clouds release the water as rain.

Jenna: I don't think any clouds can hold water if the Sun is shining.

White clouds do not contain water.

Which friend do you agree with most? \_\_\_\_\_

Explain why you agree.

---

---



 **GO ONLINE**

Check out *Moving Clouds* to see the phenomenon in action.

## Talk About It

Look at the picture and watch the video *Moving Clouds*. What kind of weather is the picture showing? What kind of weather will this place have next? Draw a picture to show your prediction.

# Cloudy Rainy



# Weather

Weather is what the air is like outside at a certain time and place. Even though you cannot see air, you can see it move things, such as leaves on trees. Weather changes from day to day. It can also change from hour to hour.








The air that surrounds Earth is part of the atmosphere.

The atmosphere is a blanket of gases and tiny bits of dust that surround Earth. The atmosphere has several layers. Weather occurs in the layer closest to Earth.

## Temperature

When people describe weather, they describe the condition of the sky. Some terms used are *sunny*, *cloudy*, *rainy*, and *stormy*. They also describe air and its temperature. Temperature is a measure of how hot or cold something is. A thermometer is a tool that measures temperature. The diagram on the next page shows how to read a thermometer. A higher temperature means it is getting warmer. When the temperature goes down, it gets colder.



Mon 23		<b>Partly cloudy</b>
Tue 24		<b>Mostly sunny</b>
Wed 25		<b>Partly cloudy</b>
Thu 26		<b>Rainy</b>
Fri 27		<b>Partly cloudy</b>
Sat 28		<b>Partly cloudy</b>
Sun 29		<b>Sunny</b>

The blanket of Earth made of gases and dust is called -----

**A**

**Weather**

**B**

**Atmosphere**

# Temperature

It is a measure of how hot or cold something is.



# Thermometer

Tool used to measure temperature



# Unit of Temperature

Fahrenheit



Degree Celsius



°C

Liquid





# The unit of Temperature

**A**

**Thermometer**

**B**

**Degree Celsius**

## INQUIRY ACTIVITY

## Data Analysis

## Predict Weather

You looked at a picture of changing weather. Investigate to discover how weather can be predicted. Explain how this happens.

**Make a Prediction** What kind of weather will the area to the east of your location have tomorrow?

Rainy

## Materials



current  
weather  
map













weekly  
weather  
report of  
your area



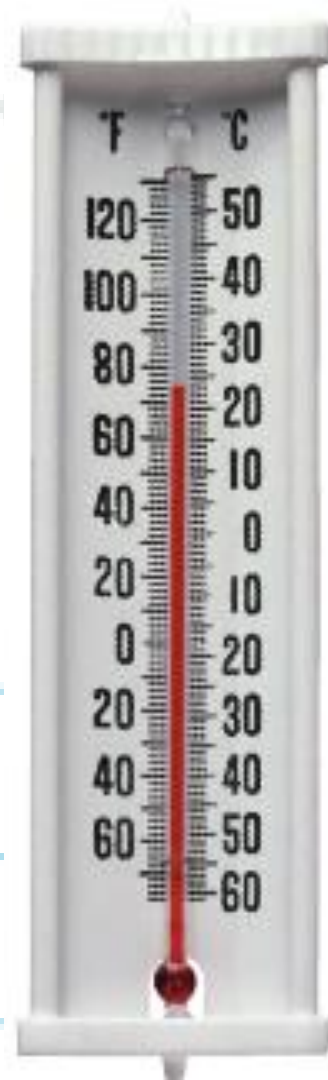
weekly  
weather  
report of  
location  
east of  
you

## Weekly Forecast

Area	Day:___	Day:___	Day:___	Day:___	Day:___
	Wed	Thu	Fri	Sat	Sun
My Area:	 23° C	 20° C	 21° C	 21° C	 22° C
Area to the East:	 21° C	 19° C	 19° C	 20° C	 22° C

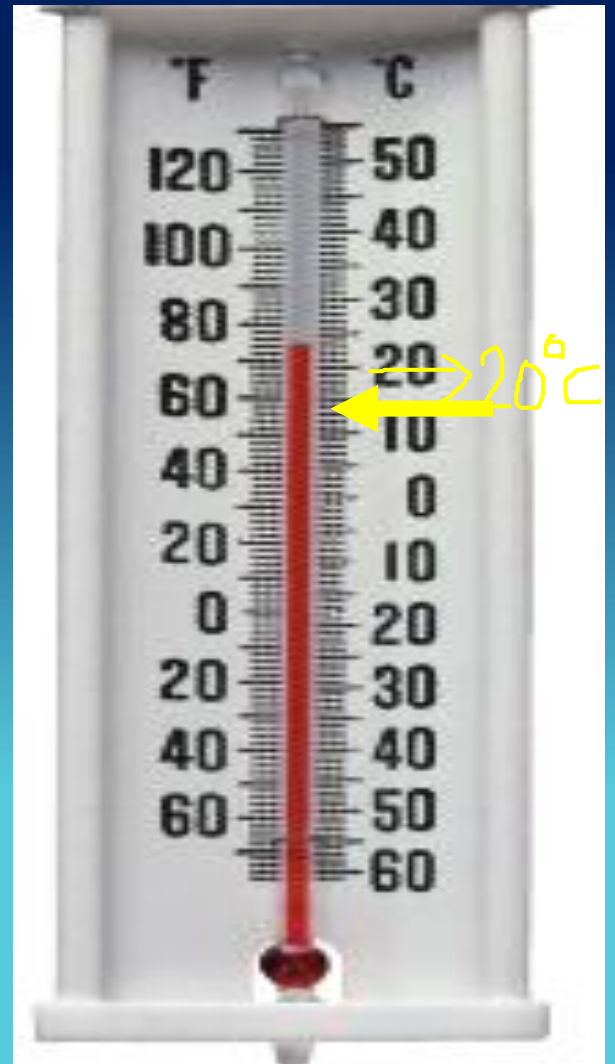
1. **MATH Connection** The height of the red bar, inside the thermometer, shows the temperature of the surrounding air. Look at the diagram. What is the temperature in degrees Celsius?

24°C



2. Place an arrow on the thermometer pointing to the temperature it is in your area today.  
Label the arrow.

20°C



01:00

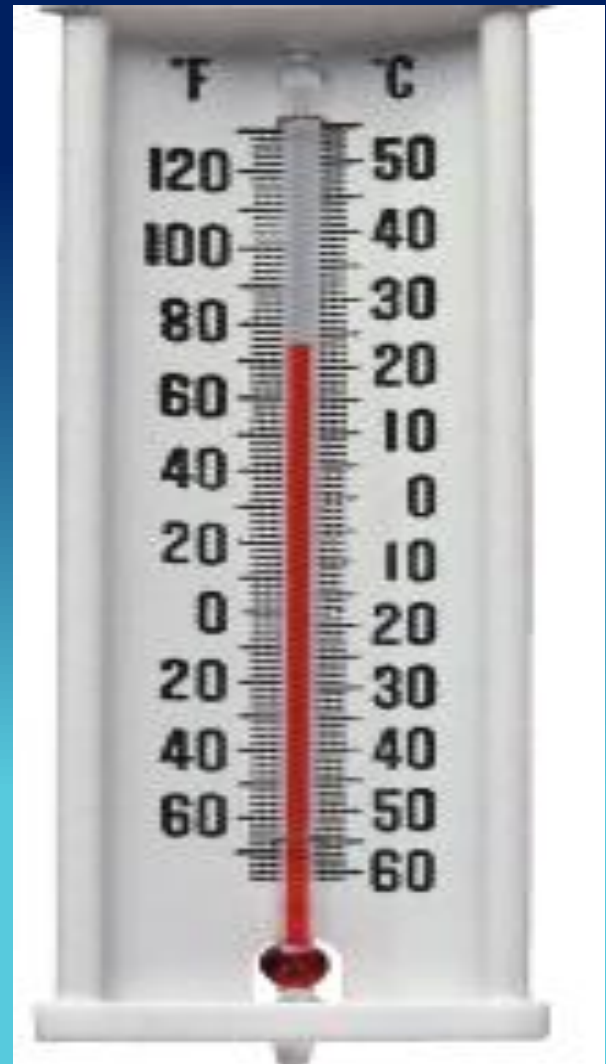


3. What kind of activities can you do in this temperature? What should you wear when you go outside?

Cycling

Woollen Jacket

4. Water usually freezes at  $0^{\circ}\text{C}$ . What is the temperature at which water freezes in Fahrenheit?



5. **READING Connection** What makes up Earth's atmosphere?

Atmosphere is made of gases and dust.

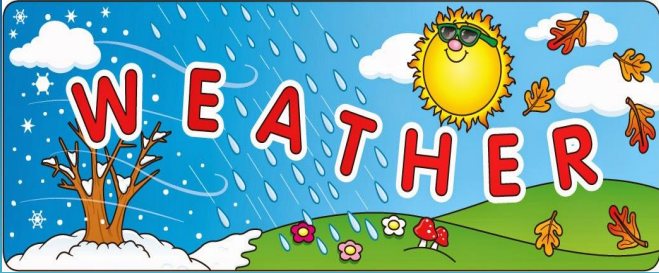
We can talk about weather by using

1. Air Temperature

2. Air Pressure

3. Precipitation

4. Wind



# Vocabulary

## 1. Air Temperature



# Weather Tool

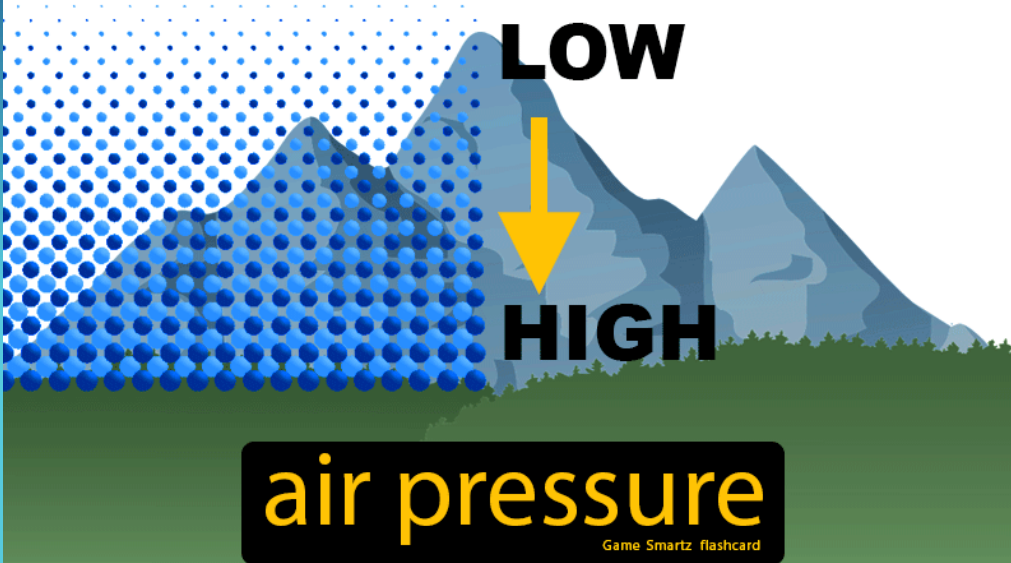
## Thermometer



# Vocabulary

## 2. Air Pressure

the weight of the air pressing down on a surface



Weather  
Tool

## Barometer





## 3. Precipitation

water that falls to Earth in any form - rain, snow, sleet, or hail



rain



snow



sleet



hail

Weather  
Tool

Rain gauge



## Vocabulary

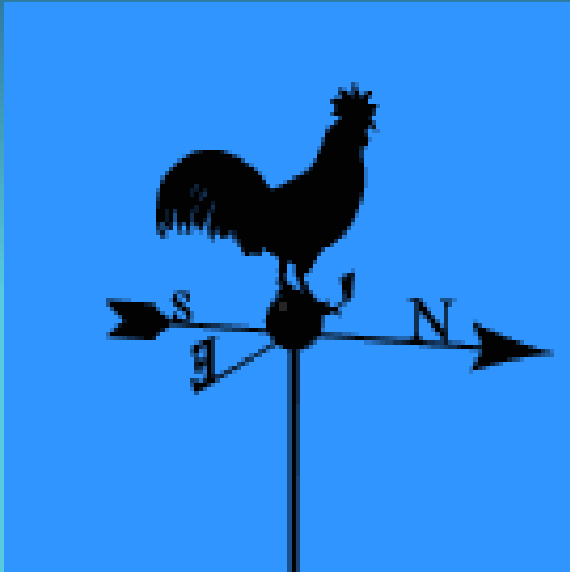
# 4.Wind



Weather  
Tool

## Windvane

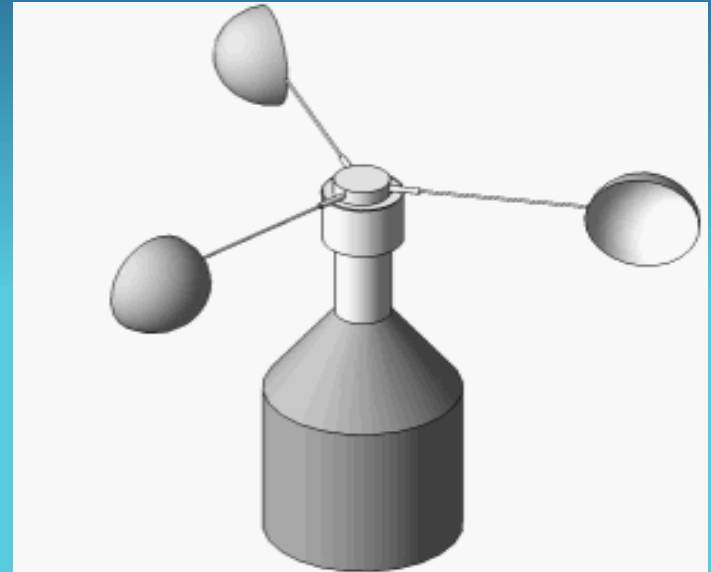
Direction of wind



Weather  
Tool

## Anemometer

Speed of wind



## Describing and Measuring Weather

Air temperature is one measurement of weather. Precipitation, wind, and air pressure also describe weather. When one of these factors changes, so does the weather.

**Precipitation** Precipitation is water that falls to the ground from clouds. Liquid rain is the most common type of precipitation. Precipitation falls as liquid rain when the air temperature is warmer than  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ). A rain gauge is used to measure precipitation.

Sleet, snow, and hail are frozen precipitation. Sleet forms when rain falls through a layer of freezing-cold air. Snow is made of ice crystals. Hail forms when rain freezes and is tossed about in a tall cloud.



A rain gauge measures how much rain has fallen.

**Air Pressure** Air pressure is the force of air pressing down on Earth's surface. Weather reports often describe air pressure. Scientists use a tool called a barometer to measure air pressure.

**Wind** Wind is moving air. It is caused by differences in air pressure. Scientists measure how fast the wind is blowing with an anemometer. Because winds in the United States usually blow from west to east, the weather will usually move from west to east as well.

The arrow of a weather vane points into the wind.



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What is the relationship between wind and air pressure?



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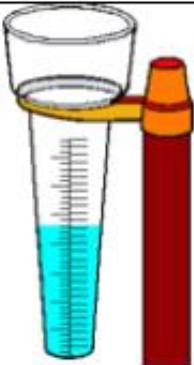
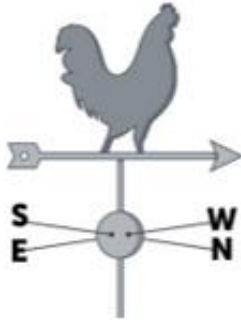

Wind moves from high pressure area to low pressure area.



12 EXPLAIN Module: Weather Impacts

05:00




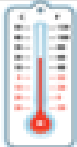

# Weather Tools

Air temperature	Air pressure	Precipitation	Wind direction	Wind speed
<b>Thermometer</b>	<b>Barometer</b>	<b>Rain gauge</b>	<b>Wind vane (Weathervane)</b>	<b>Anemometer</b>
				



Identify and write the name of the weather tools.



No	Picture	Name of the weather tool
1		
2		
3		
4		
5		



Help box

Thermometer  
Anemometer  
Rain gauge  
Wind vane  
Barometer

## Predicting Weather

Knowing the weather helps people stay safe. Airplane pilots study the weather to find out if it is safe to take off and land in another area. Predictions of hurricanes can give people time to find shelter.

Scientists use many tools to predict the weather. For example, a weather balloon is a tool that is launched into the air. It carries devices that collect data about the atmosphere. A satellite is a tool that scientists put into space.

It travels around Earth and collects data over very large areas. A satellite can spot storms over the ocean. Scientists then use other information about the atmosphere to predict where the storm will move next.

Scientists use the data they collect and past information about an area to predict what the weather will be like in that area. They may look at what the weather is mostly like during a particular month or even a year.



Weather balloons are used to gather data about weather.

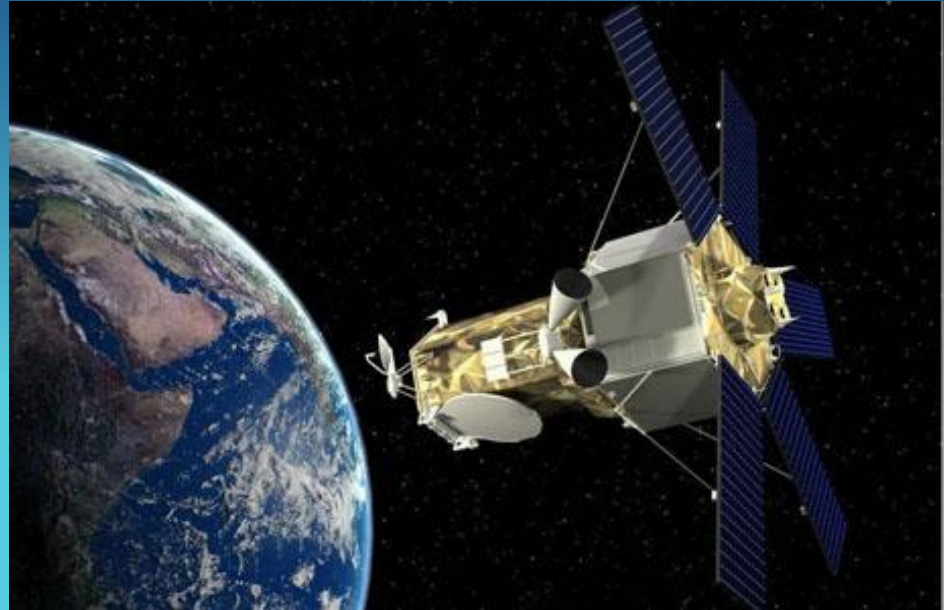
## Vocabulary

# Scientists use tools to predict weather

## Weather balloons



## Weather satellites





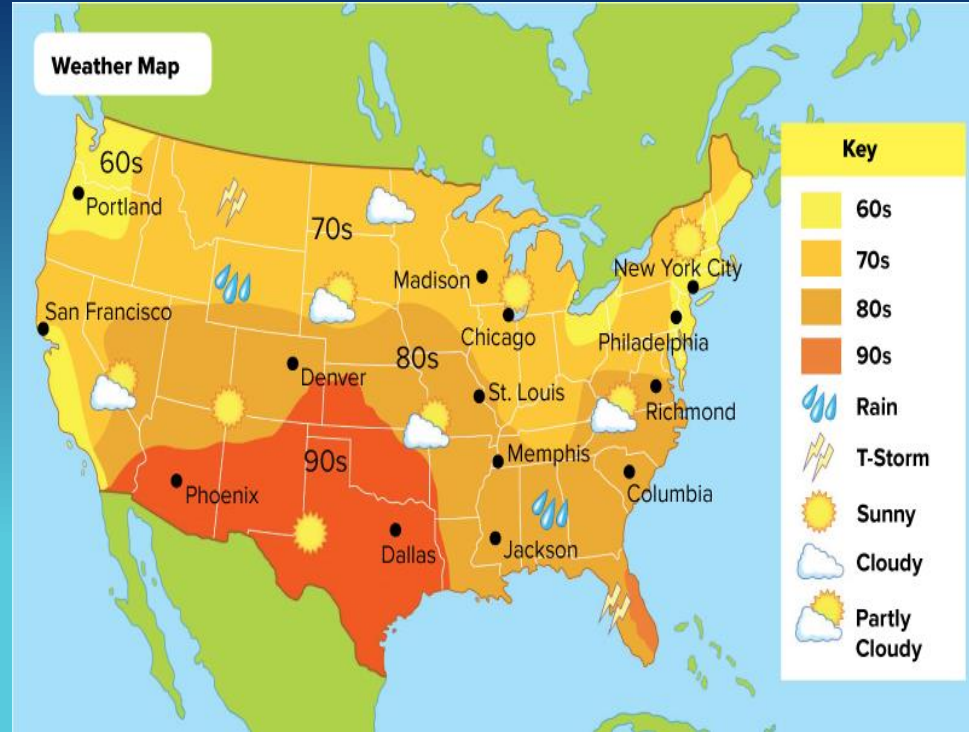
## Talk About It

What are some ways knowing weather predictions can help people plan their lives better?

It helps people  
\*what to wear,  
\*to stay safe and find  
shelter during severe weather.

# Weather Map

It shows the temperature and precipitation in an area.





# Weather Map

A weather map lists the temperatures, precipitation, and other upcoming weather predictions over a large area. It may show the high temperatures for the day. It may show where it will be sunny.





**Read a Diagram** Look carefully at the key. The colors show areas where different high temperatures will occur. The symbols show the kind of weather different areas will have.

Look at the weather map. Name two cities that will have high temperatures in the 90s.

Phoenix and Dallas



Use the data. What will the weather be like in Chicago?

Sunny and warm



# Textbook

Page No:  
15

## SYSTEM CONNECTION

What Does a Broadcast Meteorologist Do?



Broadcast meteorologists report on the weather. They usually work for radio or television networks.

Meteorologists study the effects of weather in their local communities and around the country. They read weather charts and information on past weather conditions to create weather reports. They report predictions for precipitation, temperatures, and wind. They are very good at communicating their data and findings. During weather broadcasts, they use maps and charts to explain weather patterns to people and make suggestions for how to prepare for the days ahead.



### It's Your Turn

As a broadcast meteorologist, what information would you need to have in order to create a broadcast about your local weather? What would you show people to help them understand the forecast?

ELABORATE LESSON 1 Weather Patterns 15

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## Communicate Information







3. Write your weather forecast.

**GO ONLINE** Explore Patterns of Weather to see how weather moves and changes.

Tomorrow will be -----.

The high temperature will be-----.

The low temperature will be -----.

Day	Conditions		
	Temperature	Weather	
Tue 31 Jan	 24 / 15 °C	Sunny.	
Wed 1 Feb	 26 / 18 °C	Mostly sunny.	
Thu 2 Feb	 26 / 18 °C	Sunny.	
Fri 3 Feb	 27 / 17 °C	Sunny.	
Sat 4 Feb	 26 / 17 °C	Afternoon clouds.	
Sun 5 Feb	 26 / 16 °C	Cloudy.	

4. What patterns did you notice in the weather?

Low temperatures  
Sunny days










### Summarize It

Explain how we can make predictions about weather in the United States.

Weather patterns helps us to know what weather will come next.

## Weekly Forecast for Dallas, Texas:

Monday	Tuesday	Wednesday	Thursday	Friday
				

1. The weather map predicts that the high temperature in Dallas will be in the \_\_\_\_\_.  
A. 60s      B. 70s  
C. 80s      **D. 90s**
2. What kind of weather conditions would you expect Dallas to have on Thursday?

**Hot and partly cloudy**