

## Multiple Choice

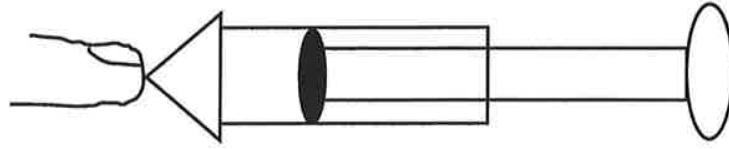
Study the Utah County weather data chart below and answer the next two questions.

Weather Data

	Monday	Tuesday	Wednesday	Thursday	Friday
Temperature	93° F	87° F	82° F	80° F	95° F
Air Pressure	30"	30"	29"	28"	30"
Wind	5 mph	15 mph	25 mph	10 mph	5 mph
Clouds	Clear	Partly Cloudy	Partly Cloudy	Cloudy	Clear

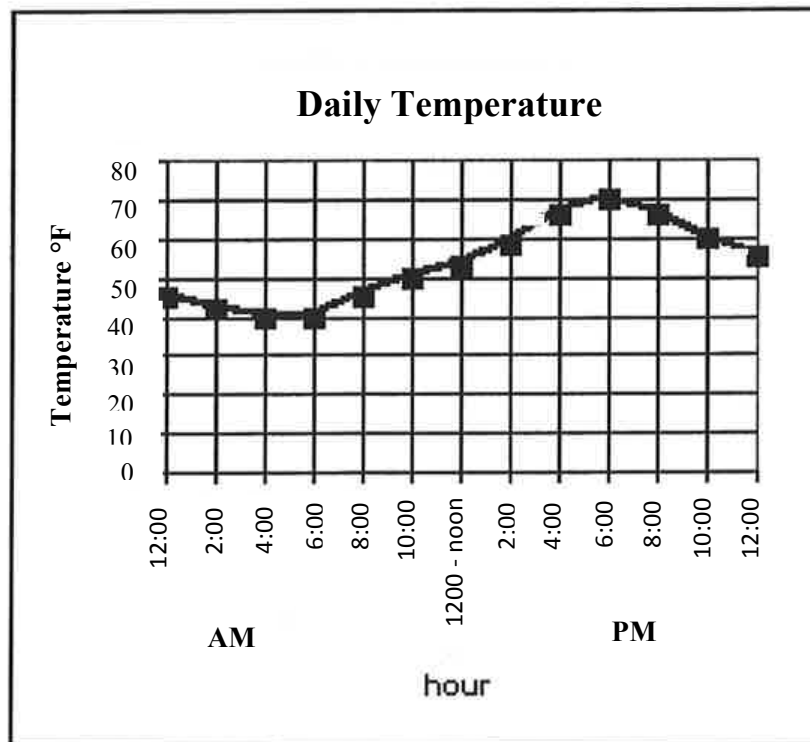
- On which day will it most likely rain?
  - Monday
  - Tuesday
  - Wednesday
  - Thursday
- Which month of the year might this be?
  - January
  - March
  - June
  - November
- A storm is approaching your town. What kind of clouds, temperature, and precipitation can you expect?
  - Cirrus clouds, lower temperatures and rain
  - Cirrus clouds, higher temperatures and rain or snow
  - Cumulus clouds, no temperature change and no rain
  - Stratus clouds, low temperatures and rain

4. The end of a syringe like the one pictured below can be closed with a finger. When the plunger is pushed, it will only go part way. Why?



- A. The plunger gets stuck
  - B. The syringe is full of air
  - C. Friction on the sides
  - D. Gravity stops it
5. Temperature and wind speed are measurements of what substance?
- A. air
  - B. rock
  - C. water
  - D. weather
6. Precipitation becomes snow when ...
- A. The clouds get closer to Earth
  - B. The clouds get darker
  - C. Air temperature gets colder
  - D. The wind blows
7. What do cirrus clouds often predict?
- A. Fair weather
  - B. A storm
  - C. No change in weather
  - D. Low or no wind
8. A calm, cloudless day with little wind usually means the next day will have what kind of weather?
- A. The same
  - B. Rain
  - C. Severe weather
  - D. Colder, fewer clouds


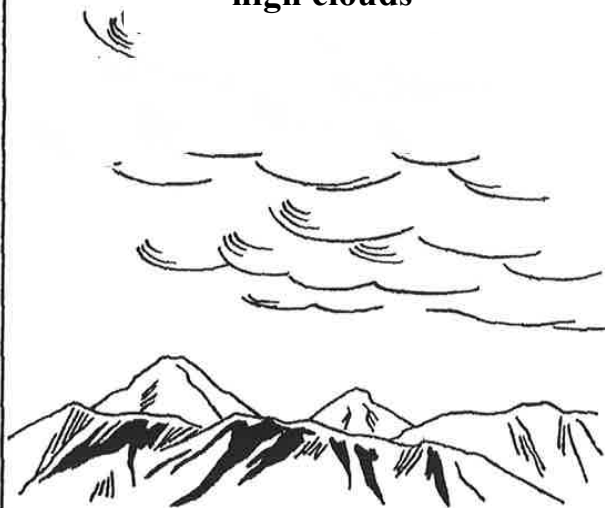
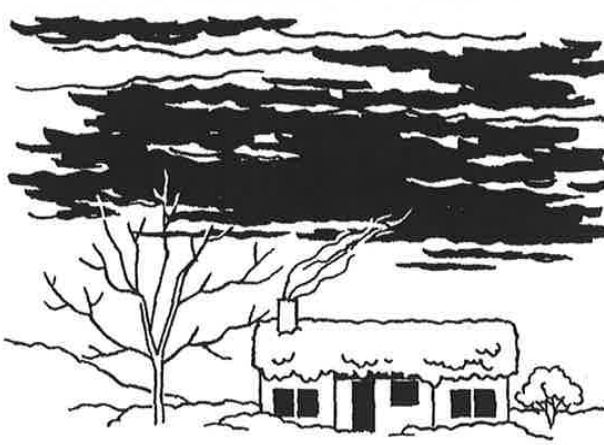
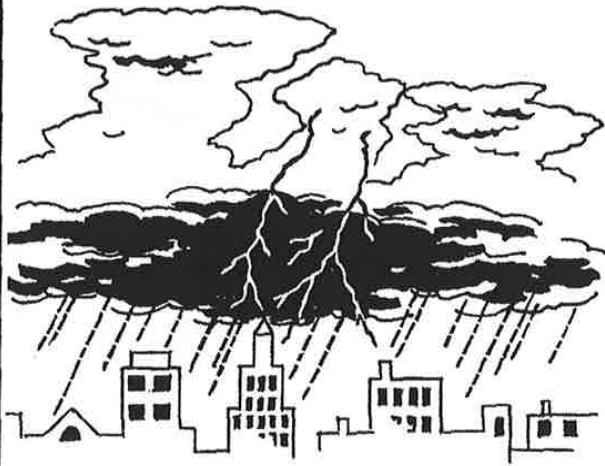
Use this graph to answer the next two questions.



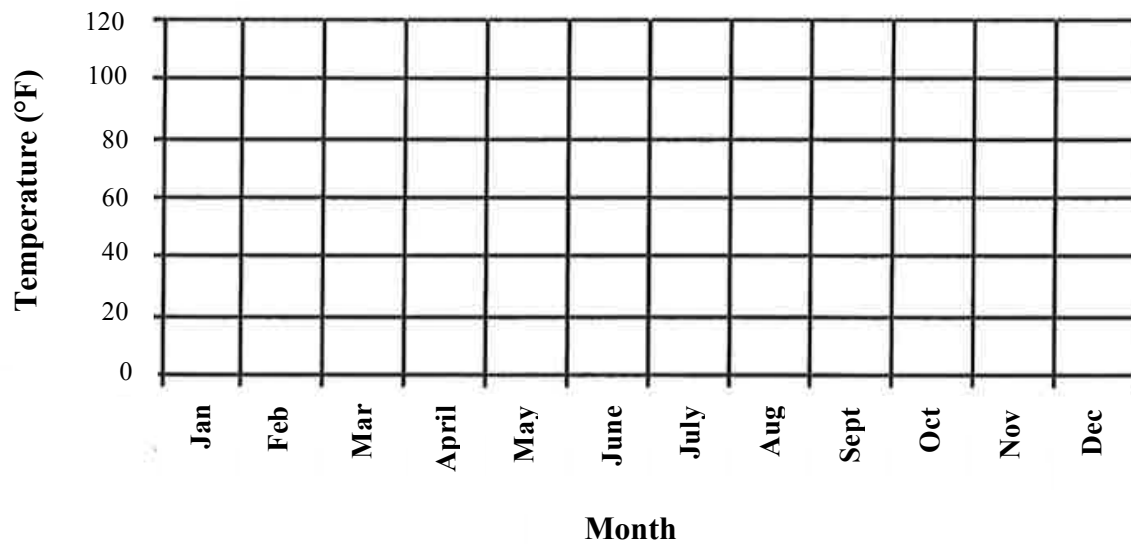
9. Which time of day is the warmest?
- A. morning
  - B. noon
  - C. late afternoon
  - D. after dark
10. What activity would this graph help you plan?
- A. when to have dinner
  - B. what time to wake up
  - C. when to do your homework
  - D. what time to be outdoors
11. Several days with strong winds from the south usually mean...
- A. it will stay the same
  - B. clear skies
  - C. hot weather is coming
  - D. a storm is likely

## Constructed Response

Write down what type of clouds are represented by each picture:

<p><b>fair weather</b> <b>low clouds</b></p>  <p>_____</p>	<p><b>weather change</b> <b>high clouds</b></p>  <p>_____</p>
<p><b>winter weather</b> <b>low clouds</b></p>  <p>_____</p>	<p><b>stormy weather</b> <b>low and high clouds</b></p>  <p>_____</p>

2. What weather components such as temperature, precipitation, wind, and clouds would you experience on a warm spring day? Why?
3. What weather data would you need to collect to make an accurate forecast? List four or more.
4. What re two weather clues that show a storm is coming?
- 5a. Draw a line on the graph using the data below that show the daily noontime temperatures during the year in Salt Lake City.



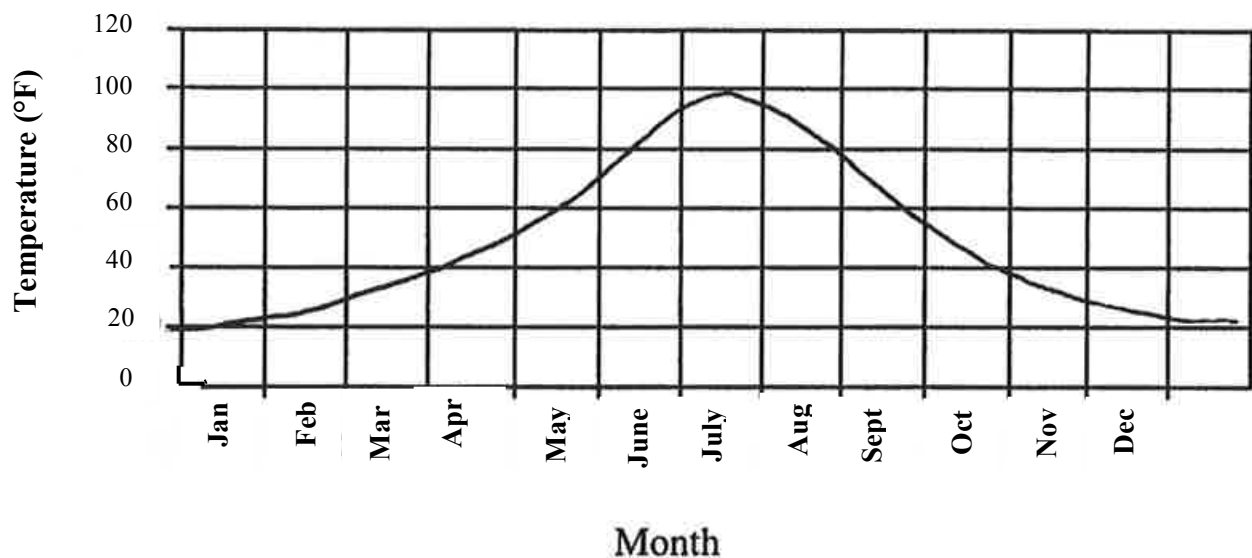
## Answers to Grade 4 Standard 2 Unit Test

### Multiple Choice

1. D
2. C
3. D
4. B
5. A
6. C
7. B
8. A
9. C
10. D
11. D

### Constructed Response:

1. A. Stratus                      B. Cirrus                      C. Cumulus                      D. Cumulonimbus
2. Answers will vary depending on student tastes. Each should be supported by a statement. Ex: Temperature would be 70° F because that is neither too hot or too cold. No rain because I don't like to get wet. Lots of wind because I like to fly a kite, etc.
3. Air temperature, humidity, air pressure, wind, cloud cover, precipitation.
4. Answer: win, especially from the south, cirrus clouds, dropping barometer, high humidity.
5. Something like this:



## **Performance Test 1**

### **Title: Collecting Weather Data**

#### **Activity Description**

Students will collect and record weather data for five consecutive days. Based on data collected and current observations, students will predict weather for the sixth day and write and share a forecast.

#### **Materials Needed**

Thermometer, anemometer, barometer, rain gauge, wind vane, cloud chart, seasonal weather charts, pencil and paper (all weather instruments are not necessary, three would be enough.)

#### **Prior to Assessment**

Students should have had experiences with weather concepts relating to air temperature, wind speed, air pressure, weather fronts, humidity, cloud types, precipitation. They should have built and used weather instruments. Students also need experience collecting and reporting data.

#### **Time Needed for Assessment**

Five ten-minute periods over five consecutive days

One class period (45-60 min) on the fifth day

#### **Procedure**

1. Collect and record observable weather data for five consecutive days: temperature, barometric pressure, wind direction and speed, precipitation, cloud type or percent of cloud cover.
2. Use recorded data and seasonal weather charts to predict the weather for the sixth day.
3. Write your prediction in the form of a weather forecast using a newspaper, television or radio format.
4. Share predictions with classmates.

#### **Suggested Scoring Guide:**

- |   |                 |
|---|-----------------|
| 1. 1 for each piece of data (7 possible) for 5 days .....         | 35 pts          |
| 2. 1 for each piece of data predicted on day 6 .....              | 7 pts           |
| 3. Correct sentence structure .....                               | 2 pts           |
| 4. Verifiable prediction .....                                    | 1 pt            |
| 5. Explaining the weather forecast using the collected data ..... | <u>5 pts</u>    |
|   | Possible 50 pts |

## Performance Test 2

### Title: Recording Weather Data

#### Activity Description

Students will use recorded weather data and look for simple patterns.

#### Materials Needed

Graph paper, colored pencils, student sheet

#### Prior to Assessment

Students should be familiar with how weather is observed and recorded. They should be familiar with precipitation, air temperature, and cloud cover.

#### Time Needed

45 minutes

#### Procedure

1. Hand out student sheets and go over directions on graphing with students.
2. After students have graphed data, discuss how graphs may show patterns indicating that one weather factor may be related to another. For example, a cloudy day may be cooler in summer than a clear day because the sun's rays are blocked. Be careful not to make causal relationships; it may be cloudy because it was cool that day.
3. After you have discussed possible reasons for relationships of one graph to another, allow students time to answer the questions.

#### Suggested Scoring Guide:

- |   |                 |
|---|-----------------|
| 1. Graphs are completed with correctly draw lines ..... | 15 pts          |
| 2. Questions are correctly answered .....               | 5 pts           |
| Answers:  | Possible 20 pts |
| 1. Wednesday  |                 |
| 2. Wednesday  |                 |
| 3. Wednesday  |                 |
| 4. There was a storm                                    |                 |



## Student Page

Name \_\_\_\_\_

### Title: Graphing Weather

**Introduction:** In this activity you will make three graphs of weather factors measured during one week. The graphs create a “picture” of data that helps you see and compare different kinds of data.

#### Directions:

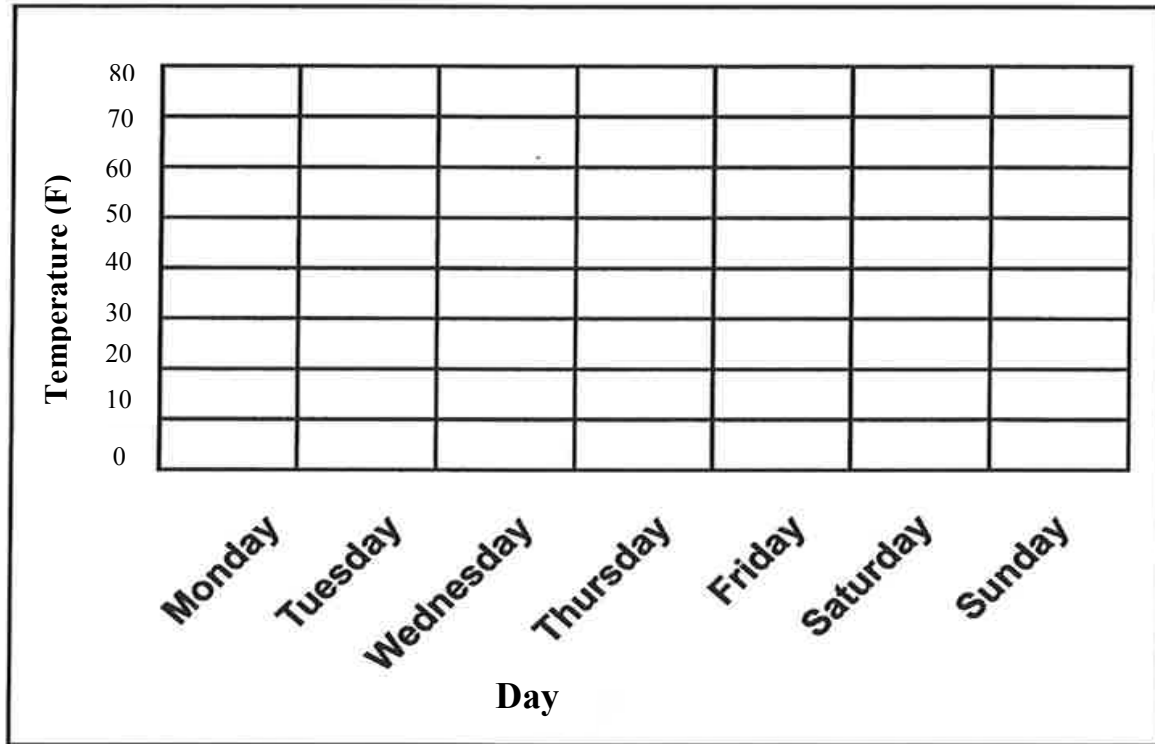
1. Use the data in the chart below to make three graphs, one for temperature, cloud cover, and rainfall.
2. Use a colored pencil to draw the dots for temperature on the temperature graph. Find the day on the bottom of the graph and go up to the temperature measured to place the dot. Connect them when you are done.
3. Do the same thing for the cloud cover (what percent of the sky is covered by clouds, 100% means the sky was totally covered) and rainfall (measured in inches of rain).
4. Compare the graphs and discuss with your teacher the different ways the graphs are the same and different.
5. Answer the questions.

#### Data

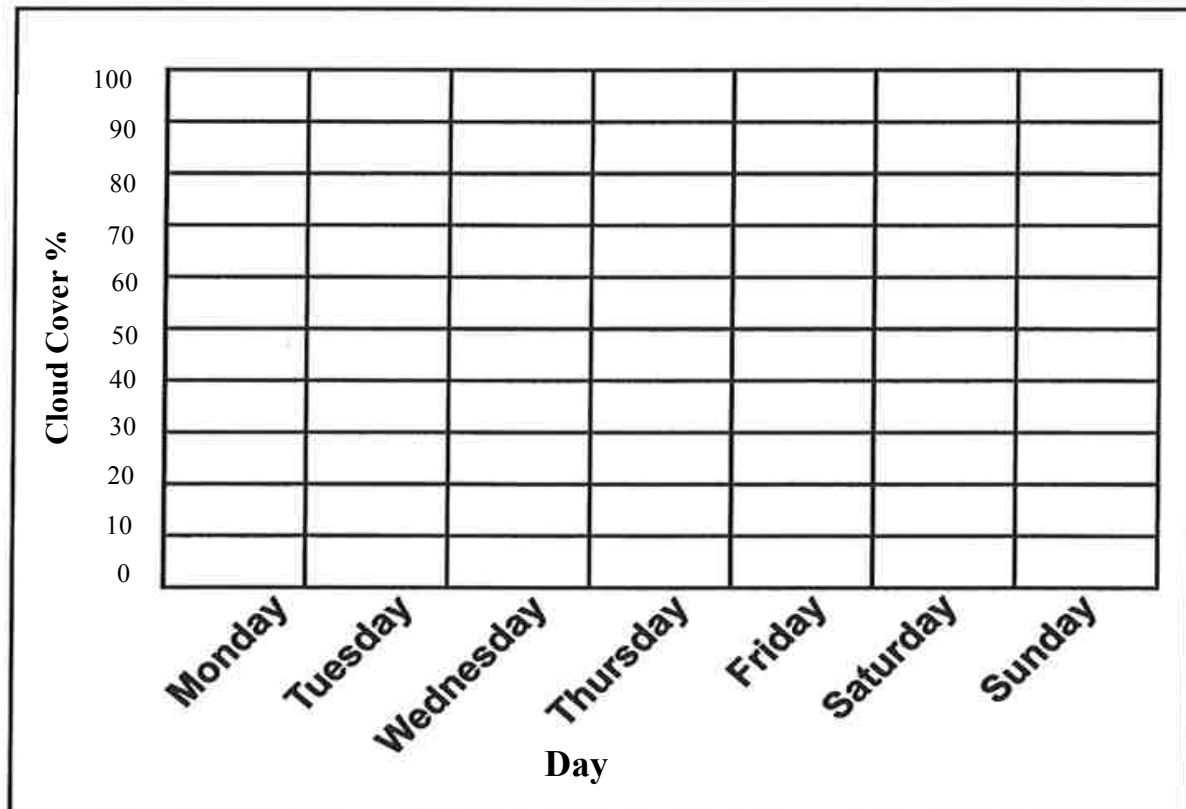
#### Chart

Day	Temperature (F)	Cloud Cover (%)	Rainfall (inches)
Monday	75° F	20%	0
Tuesday	66° F	35%	0
Wednesday	44° F	100%	.34
Thursday	50° F	80%	.05
Friday	67° F	60%	0
Saturday	70° F	20%	0
Sunday	78° F	10%	9

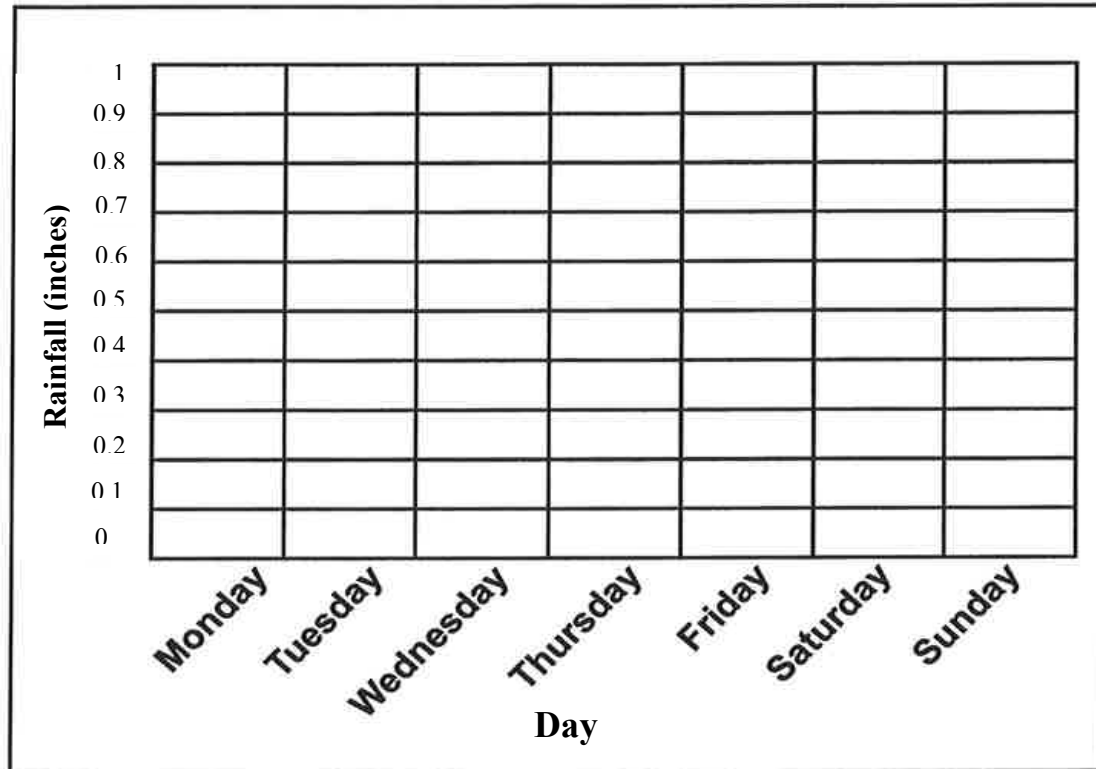
**Temperature Graph**



**Cloud Cover Graph**



## Rainfall Graph



### Questions:

1. What day was coldest?
2. What day had the most clouds?
3. What day had the most rainfall?
4. How would you describe what happened Wednesday?
5. If cloud cover went up, what would you expect temperature and rainfall to do?