



# Meteorology & Forecasting

## eSeries "GRADE SHEET"

NAME: \_\_\_\_\_

Partner: \_\_\_\_\_

Period: \_\_\_\_\_ Rotation: \_\_\_\_\_

MODULE GRADE: COURSE GR. \_\_\_\_\_ }  
POST TEST \_\_\_\_\_ }

MODULE AVERAGE= \_\_\_\_\_

METEOROLOGY & FORE. "WORKSHEET" "WORKSHEET" TOTAL= \_\_\_\_\_

LAB PERFORMANCE: \_\_\_\_\_

(When absent, write ABS on the line for the day you miss and **DISCUSS** what you need to make up with the teacher)  
LAB PERFORMANCE TOTAL= \_\_\_\_\_

**Extra Credit**—Discuss this with the instructor before beginning!!!

WORD SEARCH \_\_\_\_\_ (5)

MODULE **NOTES** \_\_\_\_\_ (0-10)

MODULE REPORT \_\_\_\_\_ (5)

Comprehensive Level Lessons 4, 5 or 6 \_\_\_\_\_

CHALLENGES \_\_\_\_\_ (5)

TOTAL EXTRA CREDIT= \_\_\_\_\_

BONUS POINTS \*\*\* \_\_\_\_\_

## METEOROLOGY & FORECASTING "WORKSHEET"

**LESSON 2-** Completed worksheet on converting Celsius to Fahrenheit and Fahrenheit to Celsius. **Worksheet:** \_\_\_\_\_ (5)

**LESSON 3-** Print out of Local Data. Use the "Weather Link" software. Show the teacher.

What are the three types of clouds? Describe each type below.

Cloud Type A: \_\_\_\_\_. Describe them: \_\_\_\_\_.

Cloud Type B: \_\_\_\_\_. Describe these: \_\_\_\_\_.

Cloud Type C: \_\_\_\_\_. Describe these: \_\_\_\_\_ (5)

**Printout- "Central Doppler Radar 1800"** "Central Doppler Radar 1800" Printout: \_\_\_\_\_ (5)

### LESSON 4-

World Weather Map & Specific Map from World Weather Map.

T.I.: \_\_\_\_\_

### Environmental Impacts

E.I. Paper: \_\_\_\_\_ (5)

### LESSON 5-Satellite Maps

Describe the Jet Stream Map: \_\_\_\_\_.

Describe the Frontal System Map: \_\_\_\_\_.

Describe the Precipitation Map: \_\_\_\_\_ (5)

**Print maps** from the directions in the Module Guide. Part A: "U.S. Infrared Satellite", Part B: "National Doppler Radar", "Doppler Radar 600", "Doppler Radar 300", "Doppler Radar 100" and **one or more.** **Printout:** \_\_\_\_\_ (10)

### LESSON 6- Storm Track Map

T.I.: \_\_\_\_\_ (5)

**Print outs** of Local Data using the "Weather Link" software from Lessons 3, 4, 5 & 6. **Printouts:** \_\_\_\_\_ (10)

### LESSON 7- NOAA map

T.I.: \_\_\_\_\_ (5)

Turn in "Daily Weather Readings Report Form.

**Worksheet:** \_\_\_\_\_ (10)

Turn in worksheet on "My Forecasting Data" Lesson 6 & 7

**Worksheet:** \_\_\_\_\_ (10)

**Study Guide**-turned in.

**Study Guide:** \_\_\_\_\_ (5)

### LESSON 12-Career Guidance Report-

**C.G. NOTES:** \_\_\_\_\_ (10)

Worksheet Total: \_\_\_\_\_



# MY FORECAST DATA FORM

Now that you can see the weather patterns over the past six lessons (days), try to forecast what weather for tomorrow by filling in all the information below. Fill in only the “Forecast Data For Tomorrow” section below. In Lesson 7 (tomorrow) you will fill in the “Actual” Data section to see how accurate your forecast was from today. Go to the [www.weather.com](http://www.weather.com) web site. Search for a forecast map for tomorrow and see if you can predict tomorrow’s weather. Turn in this map of the forecast for tomorrow.

Weather Data	Forecast Data for Tomorrow	Actual Data of the Day
Current Time		
Current Date		
Inside Temperature		
Outside Temperature		
Outside Wind Speed		
Outside Wind Direction		
Outside Wind Chill		
Barometric Pressure		
Barometric Trend		
Inside Humidity		
Outside Humidity		
Dew Point		
Sky Conditions		

You will need to make your predictions for weather based on what you see on various maps and what the weather is today? Of the above factors (Outside Temp., wind speed, direction, barometric pressure, barometric trends, outside humidity, dew point) which ones are you using to predict tomorrows weather. Why are you using this/these factors. Why do you think these factors are the ones you should use. What was in this/these factors that made you think it would tell you what the weather would be like tomorrow?

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Answer how your prediction from yesterday turned out. Were you accurate. Write why you were accurate or describe why you weren’t accurate in your prediction below.

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Polar

# Meteorology & Forecasting Unit Test Study

## Guide (Lessons 1-12)

1. What is the satellite called whose orbit is the same speed as the earth and travels over 20,000 (35,000 km) miles above the earth?  
Geosynchronous                      NASA                      SPUTNIK

2. Which of the following is a device that calculates wind speed and direction?  
Polar satellite                      Anemometer                      Weather receiver                      Antenna

3. Barometric pressure measures which of the following?  
Ozone layer                      Rain level                      Weight of the air                      Temperature of the air

4. Which of the following is the average barometric pressure at sea level?  
10 millibar                      29.92 inches of mercury.                      72 degrees Fahrenheit                      2 parts hydrogen, 1 part oxygen

5. Which of the following forces does not determine wind direction and strength?  
Air pressure                      Gravity                      Friction                      Coriolis effect

6. Cumulonimbus clouds are which of the following?  
Thin, wispy clouds                      Likely to be seen on an overcast day                      Are always very high in the atmosphere  
Usually associated with thunderstorms

7. What is the force called that affects the wind when the Earth spins faster than the air around it?  
Revolution                      Gravitational pull                      Coriolis effect                      Wind velocity

8. What instrument is launched in balloons to measure air pressure, temperature, and humidity?  
Barometer                      Dew point                      Altimeter                      Radiosonde

9. Which of the following best describes a microburst?  
Sudden and torrential rain  
Catastrophic lightning  
Severe and unpredictable winds covering small areas  
Snow accumulations in excess of 12 inches (30 cm)

10. What are lines drawn around high and low pressure areas on barometric pressure maps called?  
Perimeters                      Latitudes                      Isobars                      Verticals

11. Which of the following does a jet stream map show?  
The direction and location of prevailing winds                      Barometric pressure  
High and low frontal systems                      Temperature ranges

12. Which of the following statements is true?  
All rainfall results in storms.  
Snow is not a form of precipitation.  
Cold fronts can be avoided by moving south.  
Storms are the result of cold and warm fronts interacting.

13. Which statement best describes a cold front?  
Temperature at or below 32 degrees Fahrenheit.  
Weather systems that are predominantly at the North and South Poles.

Heavy air that displaces warm air by making the warm air rise.  
A front that never results in storms.

14. Which of the following best describes how hurricanes are formed?  
Wind or a front moves warm humid air on the ground up into cold air.  
Winds move colder air on the ground up into warm air.  
Cold air forces winds upward into warm air.  
The Earth's rotation causes cold air to move circularly.

15. To be classified as a hurricane, wind speeds must reach a minimum of \_\_\_\_\_.  
54 miles per hour    100 kilometers per hour    74 miles per hour    6 miles per minute

16. What is a flood called that develops quickly and generally affects small areas?  
Great flood    Thunderstorm    Flash flood    Intermediate flood

17. Which of the following statements is false?  
In flash floods there is adequate advance warning and in great floods there is no adequate warning.  
In flash floods there is little or no adequate warning and in great floods usually adequate warning.  
Flooding a local stream is an example of a flash flood.  
Individuals should not drive or wade in flood waters.

18. Which of the following statements is true?  
Snow is a form of freezing rain.  
Snow results from condensation of water vapor into ice crystals.  
Snowflakes are always formed as intricate six-sided patterns.  
Snow takes only one form, dry and powdery.

19. Which of the following methods is/are used to keep highways free of snow?  
Snow fences    Rock salt    Snow plows    All of the above are correct.

20. What is the special place in space called that geosynchronous satellites orbit?  
Milky Way    Clarke Belt    The Big Dipper    Equator

21. A high or low pressure system directly in the path of a jet stream is most likely to do which of the following?

Remain stagnant    Dissipate    Move in a counter direction of the jet stream    Move in the same direction as the jet stream

22. Which of the following statements is true as related to predicting weather trends?

A prediction based over a longer period of time tends to be most accurate.

A prediction based over a short period of time tends to be most accurate.

Predictions of weather trends are never accurate.

There is a 50% chance of predicting an accurate weather trend.

23. What organization provides public forecasts, aviation forecasts, and marine forecasts?

Federal Communications Commission

Federal Reserve Board

National Weather Service

National Aeronautics and Space Administration

24. A meteorologist can work in:

private local weather forecasting agencies

government organizations

research groups

All of the above are correct

25. Two events mentioned in this unit that could cause your weather predictions to be inaccurate are changes in:

barometric pressure and wind speed

barometric pressure and wind direction.

temperature and wind speed.

temperature and wind direction.

# Temperature Conversion Worksheet

**BE SURE YOU SHOW YOUR WORK. YOU CAN USE A CALCULATOR, BUT YOU MUST SHOW HOW YOU SET UP THE FORMULA TO SOLVE THE PROBLEM.**

**Convert the temperatures from Celsius to Fahrenheit** in the space provided. You will need to set up the formula to **show** this part of your work, however you can use a calculator to determine the answer.

T<sub>c</sub> is the temperature Celsius. You are converting Celsius temperature to T<sub>f</sub> temperature Fahrenheit. Use the formula below:

$$T_f = (T_c \times 9/5) + 32$$

You can substitute the decimal equivalent of 1.8 for the fraction 9/5's if you prefer.

1. 35°C converts to: \_\_\_\_\_ °F  
(set up the formula)

2. 310°C converts to: \_\_\_\_\_ °F  
(set up the formula)

3. 1004°C converts to: \_\_\_\_\_ °F  
(set up the formula)

# Temperature Conversion Worksheet

**BE SURE YOU SHOW YOUR WORK. YOU CAN USE A CALCULATOR, BUT YOU MUST SHOW HOW YOU SET UP THE FORMULA TO SOLVE THE PROBLEM.**

**Convert these temperatures from Fahrenheit to Celsius:**

**BE SURE TO SHOW YOUR WORK. YOU CAN USE A CALCULATOR, BUT YOU MUST SHOW HOW YOU SET UP THE FORMULA TO SOLVE THE PROBLEM.**

$$(T_f - 32^\circ\text{F}) \times 5^\circ\text{C}/9^\circ\text{F} = T_c$$

You can substitute the decimal equivalent of  $5/9$ 's if you prefer.

1.  $95^\circ\text{F}$  converts to: \_\_\_\_\_  $T_c$   
(set up the formula)

2.  $806^\circ\text{F}$  converts to: \_\_\_\_\_  $T_c$   
(set up the formula)

3.  $2192^\circ\text{F}$  converts to: \_\_\_\_\_  $T_c$   
(set up the formula)

## Meteorology & Forecasting

Y	Y	D	N	G	W	E	A	T	H	E	R	E	H	N
L	T	N	M	E	N	C	G	W	X	Y	R	E	R	O
Y	I	I	U	O	W	A	L	I	Z	U	A	R	R	I
B	D	W	Z	S	V	A	C	O	S	T	E	I	J	T
A	I	D	T	Y	G	J	T	S	U	T	A	E	G	A
R	M	A	P	N	K	O	E	E	E	D	T	T	E	T
O	U	U	R	C	I	R	G	M	R	S	S	J	O	I
M	H	C	N	H	P	O	O	S	T	V	D	T	S	P
E	K	F	Y	R	I	M	P	R	N	I	A	R	Q	I
T	W	K	F	O	E	N	E	W	S	P	F	P	V	C
E	E	E	Y	N	P	A	B	E	E	M	W	D	O	E
R	R	U	A	O	M	Q	B	O	S	D	L	C	G	R
D	S	T	D	U	E	T	I	L	L	E	T	A	S	P
I	T	X	X	S	C	L	A	R	K	E	B	E	L	T
G	N	I	T	I	B	R	O	R	A	L	O	P	P	T

AIR

ANEMOMETER

BAROMETER

CLARKEBELT

CLOUDS

DEWPOINT

GEOS

GEOSYNCHRONOUS

HEAT

HUMIDITY

JETSTREAM

MAP

POLARORBITING

PRECIPITATION

PRESSURE

RAIN

SATELLITE

SCAN

WATERVAPOR

WEATHER

WIND

# ACTIVITY GUIDE DIRECTIONS

## “DOWNLOADING LOCAL DATA”: LESSON 3, 4, 5, & 6

You will now open the weather monitoring station. The Lab Volt Lesson 3 tells you to click on “Application Launch” & then click on the “Weather Station”. You will then:

1. Click on File.
2. Click on Open Station.
3. Select the station called “LAKEVIEW”, then click “OK”.

## DOWNLOADING DATA

You will now download the data which has been stored at 10-minute intervals in the weather monitors memory. You will make a graph of the weather conditions over the past 24 hours.

4. Click on “File”.
5. Click on “Download”.
6. Click on “OK”. If it says that the “Archive” memory is empty, just click “OK”. What it means is that the weather station has already downloaded the latest information/data already.

## TO PREPARE A DATA PLOT

7. Click on Window.
8. Click on Plot.

The plot screen appears. “WeatherLink” uses the default settings to plot the Outside Temp.

9. View the graph you created. If you don’t see any of the lines, call the teacher and ask for some help. The outside temperature values are listed on the left and the hours of the day are listed across the bottom. The YELLOW (don't worry if this is a different color) line represents temperature readings for the day (today).

## **TO ADD DATA TO YOUR PLOT**

1. A list of several weather topics appear at the bottom of the screen. Click on the small white box to the left of Outside Hum. "WeatherLink" automatically plots the new data on the existing graph. (Clicking on the white box again removes the topic from your graph.)
2. The outside humidity values are listed on the right, in addition to the previous information. Analyze the data displayed. Can you notice any trends? Can you explain the trends?

## **PRINTING WEATHER MONITOR DATA**

NOTE: Verify that the printer is on.

3. Click on Window.
4. Click on Bulletin. See the example on the next page.
5. Click Yes. You will have to wait a minute for the next screen to open, be patient.
6. Click on the Printer icon in the upper right corner of the screen.
7. Click on Setup to select a printer you will be printing to the TechLab printer.
8. Click OK.
9. Click OK again to print.
10. Click on Window.
11. Click on Strip Charts. See the example on the next page.
12. Click on the Printer icon.
13. Click OK to print.

NOTE: You will use the data from your printout to complete today's DAILY WEATHER READINGS REPORT form.

Attach the printouts to your packet when you have finished.

14. To exit "WeatherLink 4.01", click on "File" and then on "Exit".

# “REVIEWING THE WEATHER SITE FORECAST”

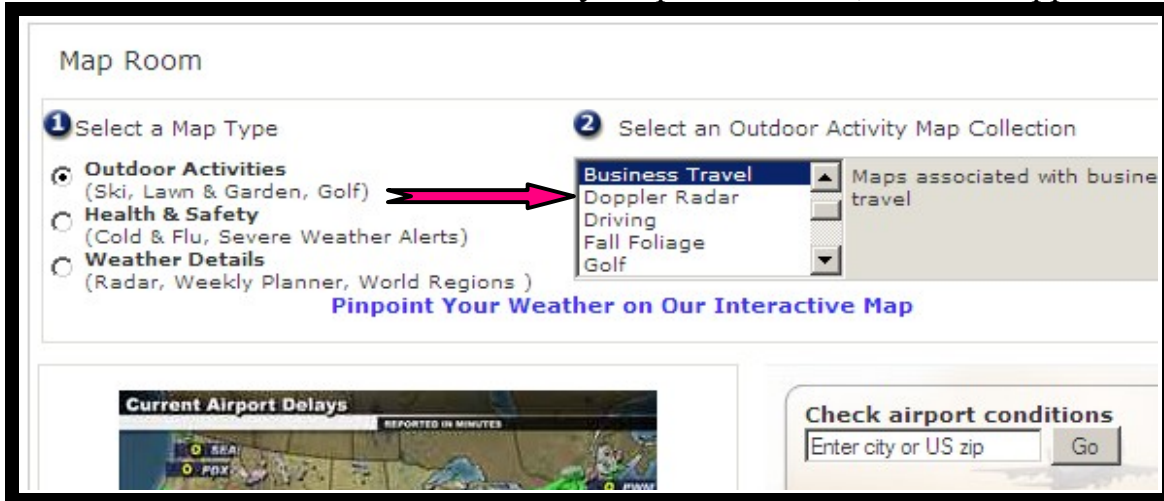
## LESSON 3, 4, 5, & 6

*Notice: the web site that you will be using below is **constantly being changed**. Because of the changes the **directions you are following may not be up to date** with the web site changes. Do your best to try and **figure out what map** they are trying to get you to and find it. If you search the web site you should be able to find it somewhere.*

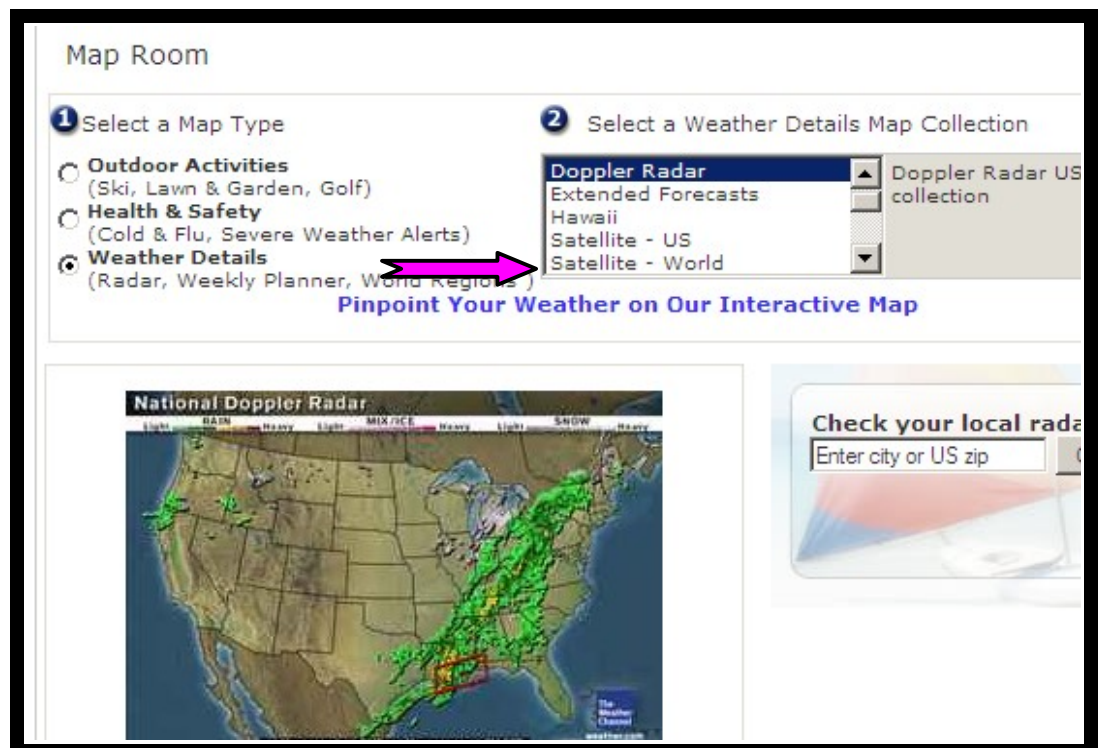
1. Click on the “Internet” button at the bottom of the Lab Volt software screen. Then type [www.weather.com](http://www.weather.com) in the address box.
2. You will get a page that has the current weather information for the U.S.
3. Enter your ZIP CODE underneath the “HOME” tab. And Click “Find Weather”.
4. A forecast and the current conditions will appear for the city's zip code you entered. You will also find the actual readings for today in your area. Under the “Right Now” column, you will see “Expand Weather Details”. These may include temperature, wind, dew point, relative humidity, visibility, barometric pressure, sunrise and sunset. You can also change from fahrenheit to celsius by clicking the tab at the top right.
5. Take out your “Daily Weather Readings Report” form. Enter the readings that appear for your area under the column heading “Internet” (not the DAVIS column).
6. Compare the observations that you recorded under the Weather Station column with those of the Weather Site.
7. Scroll down on this page and You will find the Regional Satellite Map on this web page.
8. Under the map, it should say “More Maps”. Look for “Classic Radar Map” and click on it.
9. Under the map that loads is a list of maps you can scroll through for various maps. Click on “Doppler Radar 1800”.
10. At the top of the screen, click on "File", "Print Preview".
11. Find the page that the map is on. In this case it **should be page 2**.
12. Click on Print. Select "Page" and type in page 2(or whatever page it is on). Click the "Print" button. This will only print the map and save paper. You will turn this printout in at the end of the module.
13. You will only need to make the Doppler Radar 1800 map for lesson 3, not lessons 4, 5, & 6.
14. Close the Internet Explorer and return to the Lab Volt lesson and continue to the end of the period.

# Lesson 4: “WORLD WEATHER”

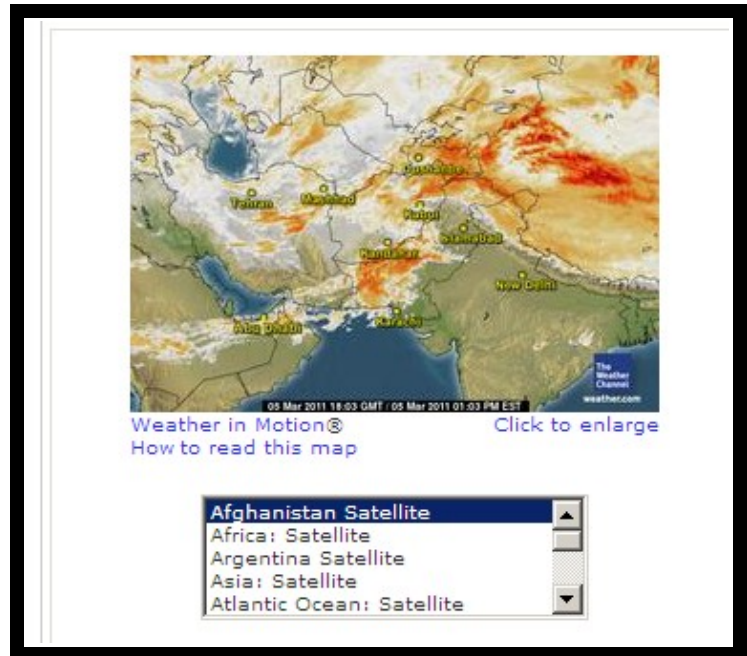
1. Open the internet browser (Internet Explorer). Type in: [www.weather.com](http://www.weather.com)
2. At the top, Click on the Maps tab. In the Maps tab scroll down to “ALL MAPS” and click.
3. In the Section #2 “Select an Outdoor Activity Map Collection”, select “Doppler Radar”.



4. When the “Doppler Radar” page opens. Click on “Sattelite – World”.



5. In the map that opens (see the one to the right), Select one of the maps from the list.



6. Select one of the maps you viewed that you like the most by clicking on the map itself to enlarge it.

7. Select “File” and “Print Preview”. Find what page the map is on (page 1 usually). Click on the printer Icon. You will print to the LVW\_TECH\_COLOR printer, print only the page the map is on. You will turn this printout in at the end of the module.

8. Underneath the map you selected, you should now see there are specific maps in that world region. Select one of the world region maps of that specific subregion from the list under the map.



8. Do a print preview of the map and then print it to the same color printer. You will turn this printout in at the end of the module.

## Lesson 5 Part A: “Satellite Maps” (OLD Lesson 4 directions).

1. Click on the “Internet” button. Enter [www.weather.com](http://www.weather.com) In the Address line.
2. Click on the TAB above the map called "Map".
3. Under the map scroll to and click on "Current Weather".
4. This will give you the “**U.S. Current Weather/U.S. Current Surface**” like lesson 3.
5. Under the map you see, you will see a box with various maps listed. Click on the map that says “US Infrared Satellite”. This will open the map called “IR Satellite” map.
6. Click on “File” and then “Print Preview”. Find which page the map is on. Click on the Print button at the top. Find the “**LVW\_Tech\_Col**” printer in the list of printers and select it. Now click on Print. You will turn this printout in at the end of the module.
7. (DON'T close the internet) Minimize the Internet browser. You will use it later in the lesson.
8. Go back to the next section in the Lab Volt Lesson 4 presentation.

## Lesson 5 Part B: “Precipitation Maps” (Old Lesson 4 Part B)

1. Click on the “Internet” button at the bottom of the screen if you still have it open, otherwise, open the internet and in the Address line, type [www.weather.com](http://www.weather.com) .
2. Click on the Map tab at the left. Under the map, click “Current Weather”.
3. Under the “Current Weather” map, click on: “U.S. Doppler Radar”.
4. Click on “File” and then “**Print Preview**”. Find the page that the map is on and then print this to the “**LVW\_Tech\_Col**” printer. You will turn this printout in at the end of the module.
5. At the top of the page, type in your zip code and click “Search”. Scroll down and click on the interactive map. Again, scroll down underneath the map. Look for: “Classic Local Maps” and click on it.

6. This will give you the “**Doppler Radar-600Mile**” Map. Select file, print preview, print the page with the map. Print to the **Tech lab** printer. You will turn this printout in at the end of the module.
7. Under the map, scroll through the list of maps and select, “**Doppler Radar-300Mile**” . Print this map following the directions previously given.
8. Under the map, this time select “**Doppler Radar 100 Mile**”. Print this map.
9. Print **one other map** from this list of your choice. You will turn these printouts in at the end of the module.
10. Click on File and then Exit from the Internet browser menu.
11. Go to the next section in the Lab Volt Mind-Sight presentation.

# **Lesson 6 Part : “STORM TRACKS”**

1. Open Internet Explorer.
2. Select “Map” and select “Radar Map”.
3. You should get the Interactive Radar Map. It should show the entire United States. If not, zoom so that the entire U.S. is shown.
4. Under the map, click on the “Play” button and watch the path of any storms in the United States.
5. Click “Pause”. Click on “Next 6 Hours” and click “Play”. Watch where they are predicting any storms to continue on its path.
6. Click back on the “Past” button. Be sure the animation of the storm is paused.
7. Go to “File”, “Print Preview” and check to see which page the map is on (probably page 1). Print the page that the map is on to the LVW\_TECH\_COLOR printer. You will turn this printout in at the end of the module.

# **LESSON 7: “National Hurricane Center”**

1. Open the Internet Explorer software. Type in this address: [www.noaa.gov](http://www.noaa.gov)
2. Click on the Explore Weather icon (on the right) to get the current watches, warnings, floods, hurricanes, etc.
3. Read the information on the screen about the weather.
4. Next, Click on the “Active Weather Alerts” on the left side.
5. See if there are any warnings for active hurricanes, tornadoes, or severe thunderstorms at the present time by selecting any of the buttons.
6. You can also click and find a state (like Illinois) click on the state and then click “Go” to see if there are any warnings for a particular state (like Illinois).
7. Select the Radar tab, and click at the bottom of the map where it says “Loop if this image”. You should see a view of the latest 3-D weather images, including events such as hurricanes, or other weather situations.
8. You can also click anywhere on the map and it will zoom in. Then at the left, you can click on any of the places where it says “Loop” and see various map loops of this area.
9. Go to “File” and then “Print Preview”. Print a color print of this map page.

# **OLD stuff**

## **LESSON 4: “DOWNLOADING LOCAL DATA 2”**

You will now open the weather monitoring station. Click on “Application Launch” and then “The Weather Station”.

1. Click on “File”.
2. Click on “Open Station”.
3. Select a station (Lakeview), then click “OK”.

### **DOWNLOADING DATA**

4. Click on “File”.
5. Click on “Download”.
6. Click on “OK”.

### **TO PREPARE A DATA PLOT**

7. Click on “Window”.
8. Click on “Plot”.

Notice the plot sub-screen appears.

9. Click on the “Eraser” icon in the top right corner of the plot sub-screen. A blank graph appears.
10. Click on “**Outside Hum**” in the list of weather topics at the bottom of the screen. A graph line indicating your outside humidity readings should appear.

11. View the graph you created. The outside humidity values are listed on the left and the hours of the day are listed across the bottom. The green line represents the outside humidity readings for the day.

**Notice: colors may not be the same as listed above. You will need to be sure you pick the correct item such as the “outside humidity” because that is what is important.**

### **TO ADD DATA TO YOUR PLOT**

1. Click on “Dew Point” in the list of weather topics at the bottom of the screen.
2. View the new graph you have created. The dew point values are listed on the right, in addition to the previous information. Analyze the data displayed. Can you notice any trends? Can you explain the trends?

## **TO PRINT WEATHER MONITOR DATA**

3. Click on Window.
4. Click on Bulletin.
5. Click Yes.
6. Click on the Printer icon in the upper right corner of the screen.
7. Click on Setup to select a printer. Be sure to select the Techlab printer.
8. Click OK.
9. Click OK again to print.
10. Click on Window.
11. Click on Strip Charts.
12. Click on the Printer icon.
13. Click OK to print.

**NOTE:** You will use the data from your printout to complete today's DAILY WEATHER READINGS REPORT form.

Attach the printouts to the form when you have finished.

14. To exit "WeatherLink 4.01", click on File and then on Exit.

## **LESSON 5: “JET STREAM MAP DIRECTIONS”**

1. Click on the “**Application Launch**” button.
2. Click on “**Weather Site**”. In Microsoft Word click on [www.weather.com](http://www.weather.com) or just type it in the address section.
3. Above the map, click on the "Map" tab.
4. Under the map, use the right scroll arrow and scroll to: "See more maps" and click on it.
5. In the section #2 where it says: “**Select an Outdoor Activity Map Collection**” scroll through the list and click on “**Aviation**”.
6. Scroll down to the map. Under the map, click on the down arrow and scroll down and look for “**US 5000 Foot Winds Aloft**” and click on it (to enlarge).
7. At the top of the screen, Click on “File”, then “**Print Preview**”.
8. Click on the forward arrow and look for the page with the map you need, it is probably on page 2. Click on “**Print**” button. This time change the printer to the “**IMC Color**” printer. Change the “Print Range” to page 2 (to print just the map). Click on print.
9. Then, for the next map, click on the down arrow again and find the “**US 34000 Foot Winds Aloft**”. **Print this map** in the same manner as the last one.
10. Turn these in for credit at the end of the module stapled to your Grade Sheet.

## **Lesson 5: “Downloading Local Data 3”**

You will now open the weather monitoring station. Click on “Application Launch” then “Weather Station”.

1. Click on “File”.
2. Click on “Open Station”.
3. Select a station (Lakeview), then click “OK”.

### **DOWNLOADING DATA**

4. Click on “File”.
5. Click on “Download”.
6. Click on “OK”.

### **TO PREPARE A DATA PLOT**

7. Click on “Window”.
8. Click on “Plot”.

Notice the plot sub-screen appears. “WeatherLink” uses the default settings to plot the “**Outside Temp**”.

9. View the graph you created. The outside temperature values are listed on the left and the hours of the day are listed across the bottom. The red line represents the temperature readings for the day.

### **TO ADD DATA TO YOUR PLOT**

1. Click on “**Wind Speed**” in the list of weather topics at the bottom of the screen.
2. View the new graph you have created. The wind speed values are listed on the right, in addition to the previous information. Analyze the data displayed. Can you notice any trends? Can you explain the trends?

### **TO PRINT WEATHER MONITOR DATA**

3. Click on “Window”.
4. Click on “Bulletin”.
5. Click “Yes”.
6. Click on the Printer icon in the upper right corner of the screen.
7. Click on “Setup” to select the ***Techlab*** printer.
8. Click “OK”.
9. Click “OK” again to print.
10. Click on “Window”.
11. Click on “Strip Charts”.
12. Click on the Printer icon.
13. Click “OK” to print.

**NOTE:** You will use the data from your printout to complete today's “DAILY WEATHER READINGS REPORT” form.

Attach the printouts to the form when you have finished.

14. To exit “WeatherLink 4.01”, click on “File” and then on “Exit”.

## **LESSON 6: “DOWNLOADING LOCAL DATA #4”**

You will now open the weather monitoring station. Click on “Application Launch” then “Weather Station”.

1. Click on “File”.
2. Click on “Open Station”.
3. Select a station, then click “OK”.

### **DOWNLOADING DATA**

4. Click on “File”.
5. Click on “Download”.
6. Click on “OK”.

### **TO PREPARE A DATA PLOT**

7. Click on “Window”.
8. Click on “Plot”.

Notice the plot sub-screen appears.

9. Click on the Eraser icon in the upper right corner of the plot sub-screen. A blank graph appears.

10. Click on the **barometer** box to view the barometer readings for the day.

11. View the graph you created. The barometer values are listed on the left and the hours of the day are listed across the bottom. The yellow line represents the barometer readings for the day.

### **TO ADD DATA TO YOUR PLOT**

1. Click on **Wind Speed** in the list of weather topics at the bottom of the screen. “WeatherLink” automatically plots the new data on the existing graph. The Wind Speed values are listed on the right, in addition to previous information.

## **Lesson 6, Downloading Local Data 4 (continued)**

2. View the new graph you have created. Analyze the data displayed. Can you notice any trends? Can you explain the trends?

## **TO PRINT WEATHER MONITOR DATA**

**NOTE:** Verify that the printer is ON.

3. Click on “Window”.

4. Click on “Bulletin”.

5. Click “Yes”.

6. Click on the Printer icon in the upper right corner of the screen.

7. Click on “Setup” to select the ***Techlab*** printer.

8. Click “OK”.

9. Click “OK” again to print.

10. Click on “Window”.

11. Click on “Strip Charts”.

12. Click on the Printer icon. Click on Low Quality print.

13. Click “OK” to print.

**NOTE:** You will use the data from your printout to complete today's DAILY WEATHER READINGS REPORT form.

Attach the printouts to the form when you have finished.

14. To exit “WeatherLink 4.01”, click on “File” and then on “Exit”.

## **LESSON 7: COMPARING THE READINGS**

1. Click on the Application Launch button and select “Weather Site”. Click on [www.weather.com](http://www.weather.com)
2. Get your local weather by entering your city or zip code.
3. Compare the readings you entered on your FORECAST DATA REPORT form with the actual readings shown on the Weather Site.
4. Click on “**10 Day**” yellow button on the right. Take a look at your area's extended forecast. See how close your prediction from yesterday (Lesson 6) is to the professionals’ forecast for today.
5. If you can, review a satellite picture. Maybe the clouds you anticipated or the front you expected did not move as quickly as you thought it would. The jet stream could have changed, the winds may have increased or diminished unexpectedly, or the barometric pressure may have dropped or went up. If any of these things happened, you’re experiencing a typical day in the life of a weather forecaster. Remember: “there is nothing as unpredictable as the weather”.
6. Click on “File” and then “Exit” from the Internet browser menu.
7. Go to the next section in the presentation.

# DIRECTIONS FOR USING “WEFAX” SOFTWARE

1. Double click on the “DOS PC GEOS WEFAX4” Icon.
2. Let the software load. When you see the blue screen, click the left mouse button.
3. Click on “Receive” in the top menu bar.
4. Click on “Manual Start”.
5. The computer will begin to receive the picture that has been sent from the GEOS 8 satellite to the satellite dish on the roof of the school. It will take about 10 seconds for you to see something begin to appear on the screen. **If this doesn't work after a minute or so, call the teacher.**
6. When you get a picture and the bottom left of the screen will say “**OFF**”, you can print. Go to “**File**”, scroll down to “**Print**”. It will then open a box where you will choose “Photographs” and press “Enter”. Then from the list pick either “Current Image” (which is the whole picture of which part of it may be off the screen) or “Current View” (which is what you see on the screen). Press “Enter”.
7. Your print should begin to print a picture.
8. After printing you will need to exit by going to “File”, then “Exit”.



## Meteorology & Forecasting

### Study Guide 6.0

Circle the correct answers to these questions as you come upon them during your next seven lessons. This study guide can then be used as a resource for your final test!

1. Geosynchronous satellites orbit at about (1- REVIEW) miles above the Earth.  
*22,000 - 25,000 - 500 - 15,000*
2. (1- WHAT MAKES WEATHER) of the Earth, caused by the tilt of the Earth on its axis and the rotation of the Earth, drives the weather.  
*Polar motion - Unequal heating - Equilateral pressure - Rotational flux*

3. (1- GROUND BASE WEATHER STATION) are photographic stations in space which constantly make and transmit images of particular places on Earth for us to view.  
**Space stations - Anemometers - Weather receivers - Weather satellites**
4. The (1- GROUND BASE WEATHER STATION) is a device that calculates both wind speed and wind direction. **Doppler radar antenna - barometer - anemometer - weather receiver**
5. (1- INTRODUCTION TO WEATHER MONITOR II) is (are) connected to the local weather receiver used in this module. **Outside sensors - A power source - A computer - all of the answers**
6. Weather satellites that maintain a fixed position in the sky relative to the Earth are known as (1- SATELLITE LOCATIONS) satellites.  
**polar orbiting - geosynchronous - both answers - neither answers**
7. When the \_\_\_\_\_ key function on the weather monitor is pressed the temperature is displayed.  
**BAR – WIND CHILL – TEMP - HUM**
8. Dew point is a measure of the (2- WEATHER BASICS) at which the air will be completely full of water vapor. **barometric pressure - temperature - relative humidity - time**
9. The (2- THE ATMOSPHERE) is the atmospheric layer where most of the Earth's weather occurs. **mesosphere - troposphere - thermosphere - stratosphere**
10. (2- WEATHER BASICS) is the amount of water vapor in the air. **Storms - Humidity - Mercury - Pollen**
11. When the temperature and the (2- WEATHER BASICS) are within five to eight degrees of each other, you will probably see some form of visible moisture.  
**precipitation - relative humidity - dew point - air pressure**
12. Warm air is (2- WEATHER BASICS) than cool air. **heavier - lighter - faster - slower**
13. The (2- WEATHER BASICS) is a device to measure the weight of the air, invented by Evangelista Torricelli in 1643. **air scale - anemometer - mercury barometer - Beaufort scale**
14. The wind distributes (3- WIND) of the heat around the Earth.  
**20% - 85% - 40% - 60%**
15. Areas of the sky that have a high concentration of water droplets or ice crystals are called (3- CLOUDS). **high pressure zones - clouds - isobars - jet streams**
16. (3- WIND) winds are also called prevailing winds, or jet streams.  
**Local - Global - Polar - Equatorial**
17. Wind direction is always identified by (3- WIND).  
**where it is going - its relative humidity - where it comes from - the Earth's rotation**
18. The effect of the Earth's rotation on the wind is called the (3- WIND).  
**Doppler effect - friction coefficient - Coriolis effect - rotational constant**
19. In the Northern Hemisphere, a low pressure air mass rotates (4- PRESSURE SYSTEMS).

**counterclockwise - clockwise - up and down - hourly**

20. Good weather is usually associated with a (4- TYPES OF WEATHER MAPS) area.  
**low pressure - high temperature - high pressure - low temperature**
21. The (4- TYPES OF WEATHER MAPS) shows the location and direction of the prevailing winds.  
**precipitation map - jet stream map - frontal system map - air movement map**
22. The location of high and low pressure areas are shown on the (4- TYPES OF WEATHER MAPS).  
**precipitation map - jet stream map - frontal system map - air movement map**
23. (4- TYPES OF WEATHER MAPS) are lines drawn around high and low pressure areas on the barometric pressure map. **Isobars - Level lines - Pressure bars - Lapse rates**
24. Another name for rain, sleet, or snow is (4- TYPES OF WEATHER MAPS).  
**relative humidity - precipitation - slush - water vapor**
25. To assist in developing a forecast, weather forecasters utilize (4- REVIEW) in addition to weather charts. **satellite pictures - local weather data - both answers - neither answers**
26. Pressure areas are moved around by the (5- BASIC WEATHER FORECASTING).  
**pressure gradient - lapse rate - storm front - jet stream**
27. The study of (5- BASIC WEATHER FORECASTING) in addition to present weather conditions helps to make weather forecasts more accurate.  
**probability - past weather conditions - astrology - mathematics**
28. Geosynchronous satellites orbit the Earth in the area called the (5- SATELLITE LOCATIONS).  
**Steve belt - Amy belt - Clarke belt - Orbit belt**
29. The Davis Weather Monitor is used as the local weather receiver. The monitor has a display screen and a Lesson 1. **keypad - mouse - monitor - computer**
30. When the Lesson 1 key function on the weather monitor is pressed the Humidity reading is displayed. **BAR - WIND CHILL - TEMP - HUM**