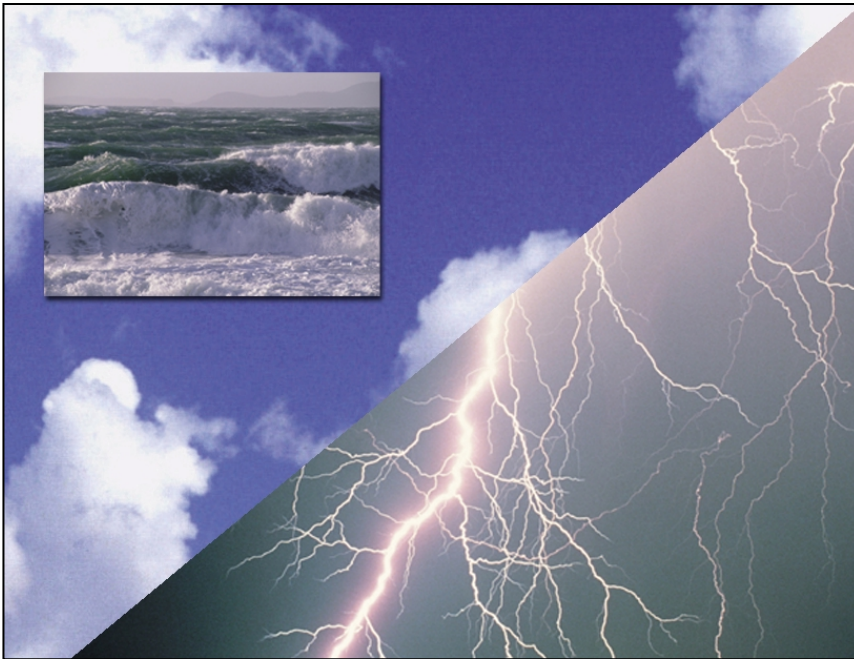


# Weather Monitoring (40-assignment)



**Typical 30-assignment topic areas include:**

- Local and global weather
- Animation of satellite images
- Weather maps
- Gasses
- Air pressure
- The Beaufort Scale
- Wind chill
- Weather maps
- Water
- Light
- Visible light and infrared satellite images
- Data logging
- Satellite orbits
- Temperature measuring
- Cloud classification
- Weather fronts, storms, lightning
- Fog and mist
- Rain measurement, precipitation
- Floods, tornadoes, Fujita wind damage scale
- Drought
- Factors affecting the Earth's climate
- Global issues
- Contributory factors of weather trends
- Forecasting

**Typical 30-assignment activities include:**

- Explore the methods for measuring weather conditions.
- Identify key characteristics of weather satellites.
- Describe factors that drive weather systems.
- Extract information from the Beaufort Scale.
- Determine what type of clothing is best suited to counter wind chill.
- Extract wind speed and direction information from a weather map.
- Define air pressure.
- Describe conventions used for representing areas of air pressure on a weather map.
- Describe the properties of water.
- Download and view satellite images.
- Explore the history of satellites.
- Describe the characteristics of visible light images.
- Define key points in the origin of satellite technology.
- Describe the characteristics of visible light images.
- Plot graphs of weather data.
- Plot a graph comparing internal and external temperature.
- Describe seasonal changes in global temperature.
- Identify temperature regions from satellite images.
- Describe the use of satellites to monitor the weather.
- Track polar and geostationary satellites.
- Explore color-coded temperature maps.
- Identify key characteristics of weather satellites.
- Identify the height of clouds.
- Distinguish between cloud types.

**Typical 10-assignment topic areas include:**

- Characteristics of the atmosphere
- Transitional states of water
- Localized weather data
- Rain, temperature, wind direction and wind speed weather sensors
- Satellites
- Data logging and display of weather information
- Characteristics of various cloud types
- Download and display of satellite images
- National weather conditions
- Formation of storms
- The climate

**Typical 10-assignment activities include:**

- Define characteristics of the atmosphere.
- Record readings from weather sensors.
- Investigate the components and links in the water cycle.
- Identify the transitional states of water.
- Identify methods for gathering weather data.
- Use a computer to display localized weather data.
- Describe the use of satellites to monitor the weather.
- Track satellites. Examine the main features of common cloud types.
- Create a record of cloud types.
- Describe how thunder and lightning are formed.
- Examine the basic properties of electricity.
- Define the meteorological term 'precipitation'.
- Examine a sample computer log of rainfall.
- Examine infrared satellite images.
- Identify temperature regions from satellite images.
- Distinguish between weather and climate.
- Identify elements that have an effect upon the climate.
- Define characteristics of a hurricane.
- Forecast the approach of a hurricane and issue a warning.

This is an integrated instructional module designed specifically to operate within the LJ ScanTEK Modular Technology Program environment. It includes a 10-assignment exploratory curriculum and a further 30-assignment in-depth curriculum. The exploratory curriculum and the in-depth curriculum are each split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks form the core of the student work. Where appropriate, these are accompanied by research tasks based upon illustrated textbooks and on-screen applications. Assessment questions are incorporated into each task.

# Weather Monitoring (40-assignment)

**Typical 30-assignment activities include (continued):**

- Identify weather front symbols.
- Apply weather front symbols to a weather map.
- Define the terms mist and fog.
- Extract forecast information from a weather map.
- Describe the components of a cold front in a storm system.
- Add weather symbols to satellite images.
- Describe the characteristics of lightning.
- Identify lightning distribution for a sample region.
- Describe the characteristics of liquid precipitation.
- Compare rainfall data with humidity, wind speed and pressure.
- Describe the characteristics of snow.
- Approximate average annual snowfall.
- Describe the potential for disaster created by floods.
- Interpret a contour map and issue a warning to sites at risk from flood.
- Describe the characteristics of tornadoes.
- Identify tornado safety precautions.
- Define characteristics of a hurricane.
- Predict weather conditions for cities in the path of a hurricane.
- Extract information from a precipitation distribution map of the U.S.
- Use an atlas to identify regions of the world.
- Determine the effects of extreme temperature on the human body.
- Predict the consequences of a heat wave on major cities in the U.S.
- Describe characteristics of the Earth's climate.
- Classify areas of the Earth into climate types.
- Describe main issues affecting the Earth's climate.
- Define climate characteristics for a vacation resort.
- Describe the technology used to make a TV weather forecast.
- Create TV weather graphics.
- Describe contributory factors towards weather trends.
- Identify trends from recorded weather data.
- Use software to view animated weather images.
- Make a weather forecast and presentation.

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

**The items supplied with this instructional module include:**

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Assignment Guide
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- 30-assignment Student Assignment Guide
- 30-assignment Student Workbook
- 30-assignment Instructor's Guide
- Computer Aided Instruction Software
- Satellite images accessed from the Internet
- Text book '*Eyewitness Guides - Weather*'
- Text book '*Essential Atlas of the World*'
- Text book '*USA Today - The Weather Book*'
- Davis Instruments Vantage Pro wireless weather monitor system
- Sample Newspaper Report Sheet
- Weather Map Editor software

**Additional items required:**

- Computer with Internet access and standard web browser
- Fixtures for fastening the weather monitor sensor outside. Must extend above edge of roof and be within 150 feet (46 metres) of the wireless weather monitor receiver console located inside the building.

**Module Facts**

For Technology Program, order as: ST110/40 Weather Monitoring

	No.	Average time
Assignments	40	45 minutes
Extension Activities	4	45 minutes
<b>Total</b>		<b>33 hours</b>



**LJ Technical Systems**  
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