

**WEATHER WHYS- CLOUD WATCHING JOURNAL**  
**“How Do Clouds Affect the Weather?” or “Is the Weatherman Right?”**

**Performance Standard 12E/11A/13A/13B.B**

Students will apply scientific inquiries to examine the natural processes that change the earth’s surface by identifying the water cycle in local weather conditions and features.

- Knowledge: Recognize the weather patterns and cloud types.
- Application: Record different cloud types through use of photographs, observational anecdotes and stories.
- Communication: Match scientific research to images and observations.

**Procedures:**

1. *In order to understand the concepts that explain the structure and the Earth’s place in it (12F) and concepts, principles and processes of scientific inquiry (11A) and apply the accepted practices of science (13A)*, students should experience sufficient learning opportunities to develop the following:

- Describe daily cloud formations and weather factors (observed science concept).
- Begin guided inquiry.
- Collect, record, analyze and display data about the three major cloud types accurately, using appropriate scientific tools and technology.
- Match the water cycle components into cloud observations.
- Recognize the weather patterns connected to the water cycle and cloud types.
- Communicate their results.
- Generate ideas about how to relate cloud-watching or weather-watching to other learning.

Note to teacher: this activity relates to the knowledge associated with standard 12E, while addressing the performance descriptors for stage B within standard 11A. Applying scientific habits of mind noted in standard 13 are foundational to these activities. Using various technologies to estimate, measure and record data address some performance descriptors in 13B.

2. Have student’s review and discuss the assessment task and how the rubric will be used to evaluate their work.

3. Begin guided inquiry by having students ask questions about clouds-how they look, how the sky changes, what happens when they see the sky change, what tools and instruments they can use to observe them, etc. Guide students toward answering their questions using applicable scientific vocabulary terms and resources. Initially, as a group, the teacher and students could observe the clouds. They could start investigation with sky observations scheduled as a whole group activity. Establish cloud observations over the course of one to three months. Record and compare the findings during and at the conclusion of the observation period. Weather Journals are used to collect and record Weatherman Predictions from mass media sources; i.e., radio, television, internet, and/or newspapers. The information is recorded for easy assessment and comparison to students’ own observations, predictions and long range forecasts. Instant photographs (i.e., Polaroid, digital) are taken each day, at the same time, from the same location. (If Polaroid’s are used, the students can see the pictures develop instantly which promotes hands-on and immediate feedback.) The photographs also will be used to classify cloud types, graph weather pattern data, and help to teach weather forecasting.

4. Continue the guided inquiry by comparing observations throughout the observation period and have students predict what they might see, using it as an observational focus. Students should be documenting their observations in their “Weather Journal”, using appropriate technological tools and instruments to collect and report their data.

5. Evaluate each student’s work with the Weather Journal Rubric as follows and add the scores to determine the performance levels:

- *Knowledge:* The student’s journal entry included daily sky conditions, weather predictions and rationale, weather questions and the temperature; the student can identify the parts of the Water Cycle and can identify the three main cloud types.
- *Application:* Observations were compared and documented and were complete and correct.
- *Communication:* The student can explain how weather conditions relate to cloud type and water cycle processes.

## Examples of Student work not available

### Resources

- Fiction and Non-Fiction reference and trade books
- Cloud Pictures, Weather Maps, Water Cycle Charts (from newspapers, television, internet, etc.)
- Journals
- Camera and Film
- Outdoor thermometer, Wind Anemometer, Rain Gauge
- Newspapers

*The Following Activities could be incorporated:*

**Weather Journals** are used from the beginning of the school year and continued throughout the year. The Weather Journals increase in complexity as the students gain information and are at ease with weather/science terminology.

Prompts may include: The Sky Looks \_\_\_\_\_

The Air Feels \_\_\_\_\_

I am wearing \_\_\_\_\_

Tomorrow will be \_\_\_\_\_. I know because \_\_\_\_\_

Once students have increased observation and documentation skills

Prompts may include:

The Clouds Look \_\_\_\_\_

The temperature is \_\_\_\_\_ degrees.

The weatherman predicted \_\_\_\_\_ degrees and \_\_\_\_\_ skies.

My weather question is \_\_\_\_\_?

### Written Journal Description can include:

- Sensorial description: I saw...
- Orientation (location of you and the object)
- Pattern: (phase, altitude, orbit...)
- Features
- Daily rise/set times
- Atmospheric conditions (clear, cloudy...)
- Description of close objects and relation to chosen observation

### **Students should label their photographic images with the following information:**

Name of object: scientific and common

Date and time of observation: using correct scientific format

### **Literature Connections:**

Teacher can share fiction and non-fiction books and stories about the weather, clouds and the water cycle. Folklore, myths, legends, stories, songs, poems and anecdotes: Ask what do we learn about clouds from these stories?