Deborah Bartlett
Grade 4
Discipline: Science
Content: Weather
Type of Class: Heterogeneous

Purpose of Tiered Lesson: To tier the content of the weather unit. Students will complete task cards that tell them which numbers questions to answer and then they may choose one to answer.

Type of Management System:
During this unit there will be an explanation of materials to access prior knowledge, independent center work, and whole class work. During the first week students will be exposed to information that will allow them to access their prior knowledge on the topic . At the end of that week, students will complete a pretest on the topic. This pretest will be used by the teacher to decide where students will start on their task cards. Sometimes students will skip some questions because they already know that information. Those students may be on level 2 or level 3 of that particular sub topic.

Scheduling Time: The work will be done within the 60 minute class period each day. Some activities could be completed at home if this is necessary for individual students. Some need more time others get very involved and want to go further.

Assessment Types and Procedures: Daily work on task cards will be monitored for correctness and quality. Teacher will keep a status of the class on a daily level and an individual record of each student which will show how each student did on the questions . This can then be entered as a grade by day or by week. There will be at least one project of building a weather instrument which will be scored on a rubric.

Name: Deb Bartlett
Grade: 4
Discipline: Science
Content / Themes: Weather

Critical Content

Topic: Influences of water cycle
- Subtopics: plants
- Subtopics: animals
- Subtopics: humans

Topic
Influences of clouds
- Subtopics: cumulus - fair
  cirrus - change in
  stratus - stormy

Topic: Purposes of weather instruments
- Subtopics: barometer - air pressure
  thermometer - temperature
  weather vane- wind direction
  wind chart - wind speed

Topic: atmosphere
- Subtopics: layers

Topic: Problems relating to severe weather
- Subtopics: tornadoes
  hurricanes
  blizzards
  thunderstorms
  ice storm

Topic: Formation of precipitation
- Subtopics: rain
  sleet
  snow
  hail

Maine Learning Results:
Science F. The Earth
Demonstrate an understanding that many things about the earth (e.g., climate) occur in cycles that vary in length and frequency.

4. Illustrate how water and other substances go through a cyclic process of change in the environment.

Themes and Generalizations

Theme: Systems

Systems may cause positive and/or negative results.

Systems interact.

Systems are made up of parts.

Systems provide order.

(Theme: Change

Change causes change.

Change may be instantaneous or take place over time.

Change may be obvious.)

Essential Questions (reflect important concepts)

1. What is a cycle?
2. What is the environment?
3. What is the relationship between weather and environment?
4. Why is it important to know about weather?
5. Is the prediction of weather reliable?

Essential Unit Questions (make essential questions specific)

1. What is the water cycle?
2. How do meteorologists predict weather?
3. What are kinds of severe weather that can affect us?
4. How do the different kinds of precipitation form?
5. What are some instruments used to predict weather?

1. Describe the 3 basic cloud types and then draw a picture of each.

2. Describe how the particles are arranges in the 3 states of matter (solid, liquid and gas).

3. Draw a diagram of the water cycle and label the 4 stages. (evaporation, condensation, precipitation, storage)

4. Using a copy of a weather map, tell where it is raining, snowing, and sunny. What is the temperature in Maine?

5. Locate Maine on a climate map and explain what the climate is where we live.

6. List these weather instruments and tell what each measures. (barometer, weather vane, thermometer)

7. Read page E6 and E7 in your science book. Explain what made the fog on the mirror? After you write your explanation, go try it on one of our windows.

8. Identify the kind of front that would be coming in if the weather report said that temperatures were going to rise?

9. Explain how weather systems move across the United States.

10. Describe 3 different types of severe weather.

11. Compare and contrast the 3 basic cloud formations. Tell about the shape, color and kind of weather they bring.

12. Design a test to tell whether a sample of matter is solid, liquid or gas.

13. We've talked about humans colonizing the moon. Predict how a domed environment make the water cycle.

14. Use a copy of a weather map and predict the weather for at least 3 different states. Justify your predictions.

15. Use a climate map and choose a climate different form ours. Design a new type of structure that would protect humans from the weather.

16. Make a barometer and use it to record whether the pressure rises or falls for 3 days. Use this to predict the weather. (This will take more than one day to complete.)

17. A weather report says that the humidity is 95% and the temperature is dropping. Predict what the weather will be. (Read pp. E6 and E7 for hints.)

18. Create a diagram that would help someone who didn't know about fronts know what weather to expect.

19. Using what you know about the movement of the earth, explain why weather systems move in the direction that they do.

20. Give a type of precipitation that would fall for the given situation:

- 70° F and summer
- 20° F and winter
- 32° F and winter

21. Investigate combinations of cloud formations and tell about the shape, color and kind of weather they bring.

22. Choose a type of weather and predict the pros and cons that could occur.

23. How does the water cycle provide order?

24. Predict if weather forecasts will ever be 100% accurate. Justify your reasons.

25. What evidence have you heard that the climate on earth is changing? Decide if you believe this to be true or false and give reasons.

26. Listen to today's weather report. Determine how the temperature, wind speed and direction, air pressure, and humidity will interact to form tomorrow's weather.

27. What would happen to our climate if the tilt of the earth changed to:

- more tilted.
- less tilted.

28. Use today's weather map and what you know about weather to predict tomorrow's

- temperature
- wind speed
- wind direction
- precipitation

29. Research the parts of a weather system that make tornadoes.

30. Create a diagram showing reasons why people talk so much about the weather.

	Week #1	Week #2	Week #3	Week #4
Monday	Intro. use posters show books read "Magic School Bus : At the Waterworks"	Students work in Learning Centers following individual plans on their cards.	Students work in Learning Centers following individual plans on their cards.	Students choose a topic (extreme weather) to teach to the class (may be in groups) Begin preparing lesson today.
Tuesday	Intro to vocab. list have students make cards with a drawing for the words	Students work in Learning Centers following individual plans on their cards.	Students work in Learning Centers following individual plans on their cards.	Finish preparing lesson.
Wednesday	watch Weather video at end students list or draw favorite parts teacher complies list	Class activity: Hot air rises. Use spinners above heater or tissue balloon and hair dryer to show that hot air rises.	Class Activity: Use red and blue cloths to show fronts meeting. or "Make It Rain" activity	Present lessons.
Thursday	Students complete Pretest on knowledge for this unit	Students work in Learning Centers following individual plans on their cards.	Students work in Learning Centers following individual plans on their cards.	Present lessons.
Friday	Teacher introduces Learning Center activities.	Students work in Learning Centers following individual plans on their cards.	Students work in Learning Centers following individual plans on their cards.	LAD Assessment and solar system assessment.