# I'm a Weather Watcher

Watching plants grow by……my,my,my

Upper Primary

Millcreek

Developed by: Kim Walker and Mary Buzard

## *Organizer*

How does weather affect living things around me?

### *Targeted Academic Expectations and Demonstrators*

1.5-1.9 Students use mathematical ideas and procedures to communicate, reason, and solve problems.

1.16 Students use computers and other kinds of technology to collect, organize, and communicate information and ideas

2.11 Students understand mathematical change concepts and use them appropriately and accurately

**2.2:** Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.

## *Supporting Academic Expectations*

**Math**

**N/P2.1** Demonstrate number sense to 1000 through modeling, applying and communicating multiple representations (drawings, concrete materials, & symbols) and using order relations

**M/P2.1** Use a variety of units, tools, and methods to measure (including estimation)

**M/P2.2** Compare & order weight/mass and length

**AI/P2.1** Create, extend and communicate simple patterns.

**PS/P2.1** Read & interpret displays of data (bar graphs, pictographs).

**Social Studies**

**2.19:** Students recognize and understand the relationship between people and geography and apply their knowledge in real-life situations.

**PRIMARY WRITING EXIT PERFORMANCE STANDARD 1:** Produce real world writing by using appropriate types, forms, and grammatical and mechanical conventions to communicate ideas and information to different audiences for different purposes.

### *Essential Questions*

- ❑ What is weather?
- ❑ How do weather patterns affect what I do?
- ❑ How do weather patterns affect living things.
- ❑ Why is it important for me to find out today's weather?

## *Culminating Performance*

Using a Web cam or digital camera with spin photo, create a movie showing plant growth for the same types of seeds that have been planted in different locations (indoor and outdoor).

Collect data for a week (plant growth, temperature both inside and outside and precipitation) and create a graph. Then using data collected, predict what the graph might look like for the next 5 days. Test predictions by collecting data.

# Rubric for Culminating Performance

| | |
|---|---|
| 4 | • Active participant in creating movie.<br>• Data is accurate, complete and includes more relevant information than expected.<br>• Accurate prediction.<br>• Line graph is accurate and complete (title labels, data) with an extension of relevant information. |
| 3 | • Active participant in creating movie.<br>• Data is accurate and complete.<br>• Reasonable prediction.<br>• Line graph is accurate and complete (title labels, data) |
| 2 | • Somewhat participates in creating movie.<br>• Data is somewhat accurate and complete.<br>• Prediction not reasonable or missing<br>• Graph is somewhat accurate and complete (title labels, data) |
| 1 | • Not active participant in creating movie.<br>• Data is inaccurate and incomplete.<br>• Unreasonable prediction or none.<br>• Graph is inaccurate and incomplete (title labels, data) or missing. |
| 0 | • Very little or no attempt |

# Answer Open Response question.

# Open Response

Plants grow differently at different times of years.

a. Make four blocks on your paper. Label blocks as winter, spring, summer and fall.

b. Draw what a bean plant would look like in each season.
c. Explain how the plant is different in each season.

Rubric for open response

| **Student** | **Date** |
|---|---|
| **4** | Student made four blocks and labeled blocks appropriately.<br>Student correctly drew plant in all seasons with extensive detail.<br>Student correctly explained, with extensive detail and correct vocabulary, how the plants are different in all seasons. |
| **3** | Student made four blocks and labeled correctly.<br>Student correctly drew plant in all seasons with basic detail<br>Student's correctly explained with basic details and some vocabulary, how the plants are different. |
| **2** | Student may have blocks and/or labeled some correctly.<br>Student drew plants, but may have missing or incorrect information.<br>Student attempts to explain with little or no details. |
| **1** | Student shows minimal effort and is unable to follow directions. |
| **Comments** | |

# Open Response for students at a different level.

Plants grow differently at different times of years.

a. Draw what a bean plant would look like inside in winter.
b. Draw what a bean plant would look like outside in winter.
c. Explain the differences and predict what would happen in spring.

| **Student-** | **Date-** |
|---|---|
| **4** | Student follows all directions clearly.<br>Student clearly answers question asked.<br>Student's work is neat and has much detail. |
| **3** | Student follows most of the directions.<br>Student answers question but not in a clear fashion.<br>Student's work is neat and has some detail. |
| **2** | Student follows some of the directions.<br>Student attempts to answer the question, but has few details. |
| **1** | Student shows minimal effort and is unable to follow directions. |
| Comments: | |

by: Gary Marr, Jr.
1999-2000

***Evaluation Component–*** Use open response in culminating performance.

## *Knowledge (Core Content)*

**SC-E-3.1.2**

Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

**SC-E-3.3.2**

The world has many different environments. Distinct environments support the life of different types of organisms. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.

**SC-E-2.3.2**

Weather changes from day to day and from over seasons. Weather can be described by observations and measurable qualities such as temperature, wind direction and speed, and precipitation.

**SC-E-2.1.1**

Earth Materials are solid rocks and soils, water, and the gases of the atmosphere. Minerals that make up rocks have properties of color, texture, and hardness. Soils have properties of color, texture, the capacity to retain water, and the ability to support plant growth. **Water on the Earth and in the atmosphere can be a solid, liquid, or gas.**

**PS/P2.1** Read & interpret displays of data (bar graphs, pictographs).

**M/P3.1** Use standard units (metric & customary) of measurement (include estimation)

## *Technology Standards*

T5.3 Evaluate information from the Internet
T5.7 Enter and edit spreadsheet information
T6.6 Use digital imaging and audio

## *Skills and Abilities*

- Skip count to 100 (by 2s, 5s, & 10s)
- Read a thermometer
- Find and read information
- Use background knowledge to make predictions
- Identify needs of a plant
- Describe seasonal changes
- Use of very basic computer terminology, i.e. click,
- Use Graph Club software
- Reading a rain gauge
- Reading a ruler
- Using a digital camera
- Using Spin Photo object software

***Instructional/Assessment Activities***

| | Completed | Objective | Suggested Activities | Assessment | Critical Resources |
|---|---|---|---|---|---|
| | | To collect data and record observations. | Pretest<br>Journal introduction: Explain what is expected to be recorded in the journal: weather data, plant growth data, cloud information, and other important information. | Student will have completed journal by end of unit. | Notebook |
| 1 | | To observe and describe the three states of matter of water. | Melt ice cube, states of matter, measure temperature. Take pictures at one minute intervals for future use in making movies. Explain to students how to use the digital camera. | Teacher observation and oral questioning of students. | Digital Camera, ice, pan, heat source |
| 2 | | To classify objects into three states of matter. | Teacher uses (beginning) "Three States of Matter" Power Point which provides graphic examples of 3 states of matter | Student will cut out pictures from magazine and categorize correctly into 3 states of matter. | "Three States of Matter" Power Point. Magazines, paper, scissors, glue. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | | To create a model of the water cycle. | Teacher uses the last part of "Three States of Matter" Power Point to explain water cycle. | Student correctly completes drawing of water cycle using MS Paint program or paper and crayons. | Paint program. |
| 4 | | To create a model showing the water cycle. | *Teacher models and student follows. Use 1 zip lock bag and draw water cycle on the bag and fill bag to about 1 inch of water. Tape to warm and/or sunny window. Observe evaporation and condensation.<br>*Put soil in bottom of jar, moisten soil, cap the jar and put in warm place. Children take home to observe. | Student completes model. | Power point<br>Zip lock bags, jars, soil, permanent markers, water, tape. |
| 5 | | To observe models of the water cycle. | Trip to Living Arts and Science Center | Student completes a letter to parents of experience including a description and model of the water cycle. | Make field trip plans |

| | | | | | |
|---|---|---|---|---|---|
| Some where in betwe en 6-15 | | To follow directions to plant a seed. | Teacher demonstrates planting a seed in the classroom and outdoors. Discuss records that need to be kept in journal. Also record observations of other plants growing indoors and outdoors. | Student successfully planted seeds. | Pinto beans, soil, cups, Spoons or something to dig dirt. |
| 6-14 | | To classify different types of clouds. | Read "Cloud Book' by Tomie dePaola, follow up with Cloud Power point and make clouds: See "Identifying Clouds" Lesson Plans for further lessons. | Student completes a Kid Pix slide show demonstrating each type of cloud. | *Cloud Book* by Tomie dePaola<br>Cloud ID power point<br>Lesson plans<br>Kid Pix<br>Cotton balls, charcoal, glue, paper |
| Math class | | To measure with a ruler. | Read *Inch by Inch* by Leo Lioni; Students will measure various things in the room. | Student measures correctly with ruler. | Rulers<br>*Inch by Inch*<br>Internet |
| 15 | | To measure rain. | Make and use a rain gauge. | Students make a rain gauges and measures rain. | Directions for rain gauge, cup, paper ruler |
| Math class | | To read a thermometer | Teacher shows students how to read the temperature using the temperature of the classroom. Students record temp using crayon and paper thermometer. | Student will read a thermometer correctly. | Lesson from www.scholastic.com |

| | | | | | |
|---|---|---|---|---|---|
| 16 | | To record growth record using a digital camera. | Daily a student on each team will take a picture of their plants both inside and outside. | Student takes pictures | Digital camera and/or software |
| daily | | To keep data of plant growth. | Measure plant growth each day and record temperature, clouds and other weather information. | See rubric | Notebook |
| 17 | | To interview a meteorologist and write an article about the visit. | Have a meteorologist come and talk to the class about predicting weather. | Write an article for a magazine or newspaper about the visit. | Meteorologist |
| 18 | | To use knowledge of weather (states of matter, clouds and water cycle) to determine if forecast makes sense. | Teacher reads "Cloudy with a Chance of Meatballs" then play Fishy Forecast – (Play as a game.) Forecasts are read and students determine if they make sense. | Teacher observation of oral responses of students choosing correctly and explaining. | *Cloudy with a Chance of Meatballs"*<br>*Fishy Forecast* lesson plan. |
| 19 | | To choose correct clothing for weather. | What will you wear due to weather forecast game? Power point game set up in center, choose the correct one.<br>"Weather on the job game board." | Student chooses correct clothing. | Power Point |

| | | | | | |
|---|---|---|---|---|---|
| 20 | | After listening to a vet, students will write a how-to piece on taking care of an animal. | Have a vet visit the classroom and talk about how to properly take care of your pets during the different seasons. | Student will cut a picture of a pet out of a magazine and write how they would take care of it year round. | Magazines<br>Vet<br>Scissors<br>Glue<br>Paper<br>pencil |
| Math class | | To differentiate a bar graph and line graph.<br>To create a line graph. | Teacher discusses when to use a bar graph and line graph with overhead. Demonstrate how two line graphs show information happening at the same time. | Students explains when to use a bar graph vs. a line graph and lists uses for each graph. | overhead |
| Comp uter lab | | To create a line graph using Excel. | Students will use excel to make a line graph of given data. | Student completes a line graph using Excel. | Excel |
| 21 | | To create a movie file using webcam or digital camera and spin photo | Teacher demonstrates how to make a movie with pictures from the melting ice cube lesson.<br><br>Help student combine pictures of plant growth to make movie.. | See rubric | Digital camera and/or software |

Possible sites.


Awesome Library - Science.url


Cloud Activities.url


Clouds.url


Create Your Own Cloud.url


Create Your Own Fog.url


Create your own thermometer.url


Electronic Learning - Cyberhunt.url


Freezing and Melting.url


http--www.si.edu-nsrc-pubs-stc-lessons-weather12.pdf.url


Measuring Tools.url


Standards Resources.url


Today's Temperature.url


Weather Watch Winter Storms.url


Welcome to Web Weather for Kids.url