

Weather Detectives

Project Guide



Overview

The 'Weather' project allows students to share daily weather observation information. The submission of text, images and data will enable students to make an ongoing analysis and comparison of the weather in a variety of locations. The project activities are designed to integrate ICT into other curriculum areas and to develop and extend ICT skills.

The project runs for two consecutive weeks. The core project activities, described in this guide, are designed to develop the students' knowledge and understanding of making weather observations. The activities involve the students in daily weather detective observations. By following this project guide all participants will be able to share and compare the same results. Extension activities can be undertaken but are not required to complete the project.

Week 1 How to be a Weather Detective

- Establish concept of a fair test or comparison
- Introduce weather symbols
- Use weather symbols to record observations
- Introduce apparatus used in recording the weather
- Record results using weather apparatus
- Discuss the effect of the weather observations on the students' lifestyle
- Discuss the effect of the weather observations on the environment
- Write collaborative text analysis of the data collected
- Publish the work to the project web site

Week 2 Weather Detectives

- Review Week 1 published work on the project web site
- Make comparisons using published work
- Take readings using weather recording apparatus
- Record results of weather observations using apparatus
- Write collaborative text analysis of the data collected
- Publish the work to the project web site

The purpose of this week is for each group of students to collect evidence by making observations. The students collect, record and analyse numerical data. The students write a collaborative review of the collected data. This activity gives the students the opportunity to write in a style that demonstrates an awareness of the intended audience.

Curriculum focus	Learning Objectives
English	<ul style="list-style-type: none"> • To be able to read for information. • To be able to vary the style of writing to suit purpose and audience. • To be able to share written accounts. • To be able to write a factual account.
Science	<ul style="list-style-type: none"> • To understand that it is important to collect evidence by making observations and measurements. • To be able to recognise when a test or comparison is unfair. • To be able to make systematic observations and measurements.
Mathematics	<ul style="list-style-type: none"> • To be able to collect, present and interpret data. • To be able to compare data in graphical form.

Curriculum focus	Learning Objectives
Geography	<ul style="list-style-type: none"> • To be able to describe what a place is like. • To be able to use appropriate fieldwork techniques and instruments. • To be able to use appropriate geographical vocabulary. • To be able to communicate in ways appropriate to task and audience.
ICT	<ul style="list-style-type: none"> • To be able to communicate and handle information. • To be able to present information with an awareness of audience.

The main focus of this week is for each group of students to learn how to collect, record and use weather data.

Step	Title	Notes
1	Where Do We Start?	Establishing the concept of a fair test and comparison.
2	Weather Symbols	Whole class weather symbol design and recognition.
3 Repeat daily	How Do We Measure Temperature?	Daily Whole class temperature recording.
4 Repeat daily	Look at the Clouds.	Daily Whole class rainfall recording.
5 Repeat daily	How Do We Measure Wind Direction and Speed?	Daily Whole class wind direction and speed recording.
6	Rain, rain go away. ...	Whole class the effects of the weather.
7	How to be a Weather Detective	Whole class text account.
8	Publish Our Work	Publish the data collection results and text overview.

Resources
<p>Provided</p> <p>Data collection sheets</p> <ul style="list-style-type: none"> • The Weather Today • The Weather This Week • Weather Report • Temperature Today • Daily Temperature <p>Support sheets</p> <ul style="list-style-type: none"> • Weather Symbols • My Weather Symbols • Compass Direction • Weather Symbols for display • Wind Direction symbols for display <p>Optional</p> <ul style="list-style-type: none"> • Digital camera • Maximum and Minimum Thermometers

Vocabulary																																																																
<p>Keywords support sheet</p> <table> <tr> <td>data</td> <td>collect</td> <td>observe</td> <td>record</td> </tr> <tr> <td>criteria</td> <td>label</td> <td>axis</td> <td>sun</td> </tr> <tr> <td>sunny</td> <td>sunny intervals</td> <td>cloudy</td> <td>rain</td> </tr> <tr> <td>snow</td> <td>hail</td> <td>sleet</td> <td>fog</td> </tr> <tr> <td>mist</td> <td>storm</td> <td>thunder</td> <td>lightning</td> </tr> <tr> <td>heavy shower</td> <td></td> <td>light shower</td> <td>clouds</td> </tr> <tr> <td>hurricane</td> <td>storm force</td> <td>gale force</td> <td></td> </tr> <tr> <td>strong</td> <td>light</td> <td>wind speed</td> <td>northerly</td> </tr> <tr> <td>westerly</td> <td>southerly</td> <td>easterly</td> <td>direction</td> </tr> <tr> <td>north</td> <td>south</td> <td>east</td> <td>west</td> </tr> <tr> <td>thermometer</td> <td>rain gauge</td> <td>humidity</td> <td>wind</td> </tr> <tr> <td>hot</td> <td>cold</td> <td>chilly</td> <td>warm</td> </tr> <tr> <td>interpret</td> <td>compare</td> <td>information</td> <td>complete</td> </tr> <tr> <td>publish</td> <td>audience</td> <td>collaborate</td> <td></td> </tr> <tr> <td>Beaufort</td> <td>force 0</td> <td>force 2</td> <td>force 4</td> </tr> <tr> <td>force 6</td> <td>force 8</td> <td>force 10</td> <td>force 12</td> </tr> </table>	data	collect	observe	record	criteria	label	axis	sun	sunny	sunny intervals	cloudy	rain	snow	hail	sleet	fog	mist	storm	thunder	lightning	heavy shower		light shower	clouds	hurricane	storm force	gale force		strong	light	wind speed	northerly	westerly	southerly	easterly	direction	north	south	east	west	thermometer	rain gauge	humidity	wind	hot	cold	chilly	warm	interpret	compare	information	complete	publish	audience	collaborate		Beaufort	force 0	force 2	force 4	force 6	force 8	force 10	force 12
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Expectations for this week
<p>Most students will be able to</p> <ul style="list-style-type: none"> • make observations to collect information • use symbols to record information • interpret information represented by symbols <p>Some students will be able to</p> <ul style="list-style-type: none"> • use instruments to log information • interpret information recorded by scientific instruments • make accurate observations using scientific instruments

Objectives	Lesson Activities	Outcomes	Notes
<p>Students will know that the Internet can be used to share information.</p>	<ul style="list-style-type: none"> • Introduce the topic to the students. • Tell the students that, by using the Internet, they will be sharing the information they collect with schools around the world. • Outline the activities the students will be involved in. • Establish that the activities will take place each day. 	<p>The students are able to identify the location of other groups of participating students. Students know that the information they collect will be shared by others through the use of the Internet.</p>	<p>Show students examples of the introductions from other participating groups of students. Class activity using interactive white board or computer based activity.</p>
<p>Students learn that it is important to recognise when a test or comparison is unfair.</p> <p>Students learn to decide how to make a fair comparison.</p>	<ul style="list-style-type: none"> • Give the students keywords upon which to base an observation of the weather – temperature (hot, cold, warm, chilly, humid, freezing), clouds, wind, sun, rain. • Ask the students what the weather was like when they came to school. • Teacher scribe the students’ observations under the heading <i>Then</i>. • Ask the students what the weather is like at the present time. • Teacher scribe the students’ observations under the heading <i>Now</i>. • Discuss with the students the fairness of comparisons made at different times. • Establish the fact that weather observations need to be at the same time each day to enable fair comparisons to be made. 	<p>Students are able to understand the need for observations to be made at the same time each day.</p>	<p>This activity could be used to establish the meaning of a fair or unfair test or comparison.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn to recognise that symbols are used to represent information.</p>	<ul style="list-style-type: none"> • Give the students the Weather Symbols worksheet. • Select one weather symbol. • Ask the students to find it on their Weather Symbols worksheet. • Ask the students to describe what type of weather they would expect if they saw that symbol. • Repeat with the other weather symbols. • Show the students the keywords that match the weather symbols. • Show the students the keywords that do not have weather symbols on the worksheet. • Ask the students to suggest symbols that could be used for these words. • Ask the students to complete the Weather Symbols worksheet. <p>Younger students could use the weather symbols to complete the cloud cover part of The Weather Today data collection sheet.</p>	<p>Students are able to use observations to collect information.</p> <p>Students are able to represent information using symbols.</p> <p>Students are able to interpret information represented by symbols.</p>	<p>Ensure the students understand the use of a symbol to represent information.</p> <p>Use the individual Weather Symbols pictures and words as a teacher resource.</p> <p>Collect weather maps from newspapers.</p>
<p>Students learn to use and interpret symbols.</p>	<ul style="list-style-type: none"> • Younger students follow verbal instructions to make a weather map using symbols. • Students then interpret the weather symbols. • Older Students follow written instructions to make a weather map using symbols. 	<p>Students are able to use symbols to make a weather map.</p> <p>Students are able to interpret information represented by symbols.</p>	<p>Use a large-scale outline of your area/country or make a large-scale outline of an imaginary country.</p> <p>Create a weather corner where students take it in turns to make a weather map.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students develop an awareness of the need to record accurately.</p>	<ul style="list-style-type: none"> Recap on the words used previously to describe the temperature – chilly, cold, freezing, warm, hot, humid. Ask the students to describe how they feel using these words. Establish that each student may have a different interpretation of the actual temperature. Establish that there is a need to use a thermometer to establish accurately what the temperature is. Discuss the units of measure used to record temperature. Show the thermometers and discuss the scale and method of reading the scale. If appropriate discuss the use of maximum and minimum thermometers. Discuss why the temperature is not taken in full sun. Students practise reading the temperature by placing the thermometer in 2 different areas – outside and inside. Decide on the time and place for placing and reading the thermometer. 	<p>Students are able to select a suitable place for the thermometer to ensure an accurate reading.</p> <p>Students are able to read a thermometer.</p> <p>Students are able to interpret a thermometer reading.</p>	<p>Have available a large size and small size thermometer.</p> <p>The activity provides the opportunity for the introduction of Centigrade and Fahrenheit to older students.</p> <p>Establish the use of maximum and minimum thermometers.</p>
<p>Students learn to use simple equipment appropriately.</p>	<ul style="list-style-type: none"> Select the daily time for reading the thermometer. Place the thermometer in the chosen place. Take a reading at the set time. <p>Younger students record on Temperature Today data recording sheet.</p> <p>Older students record on the Daily Temperature line-graph recording sheet.</p> <p><i>Discuss with the students the validity of joining the points to create a jagged line.</i></p>	<p>Students are able to record collected data accurately.</p> <p>Students are able to record data as a line graph.</p>	<p>Younger students may need support to read, interpret and represent the thermometer readings.</p> <p>Ensure that students understand that the graph will show daily fluctuation of temperature at a specific time each day.</p>
<p>Students learn how to enter information onto a data collection form.</p>	<ul style="list-style-type: none"> Enter the temperature onto the online Weather Detectives Publisher. Class activity using interactive whiteboard. 	<p>Students understand that numerical data can be presented in a graphical form.</p>	<p>Data is immediately displayed in graphical form.</p>

Objectives	Lesson Activities	Outcomes	Notes
Students develop an awareness of the need to record accurately.	<ul style="list-style-type: none"> • Discuss with the students the meaning of ‘cloud cover’. • Show the students the symbols for cloud cover. • Select the daily time for observing cloud cover. • Record the cloud cover observed on the Weather Today worksheet. 	Students are able to use symbols to record observations.	
Students learn how to enter information onto a data collection form.	<ul style="list-style-type: none"> • Enter the cloud cover observation onto the online Weather Detectives Publisher. • Class activity using interactive whiteboard. 	Students understand that data can be presented in a pictorial form.	Data is immediately displayed in a pictorial form.

How Do We Measure Rainfall?

<p><i>Optional Activity</i> Data collected from this activity is not required as part of the project.</p> <p>Students learn to use simple equipment appropriately.</p>	<ul style="list-style-type: none"> • Set the students the problem - how are they going to measure the amount of rainfall each day? • Discuss the suggestions. Ask the students their views as to the possible success of the suggestion. • Discuss the need to collect the rainfall in a container. • Establish the suitability requirements of the container – Need for a funnel? • Discuss the units of measure used to record the depth of a liquid. • Show the containers and discuss the suitability of each. • Select the most suitable container. • Discuss where to place the container. • Students practise reading the rain gauge by adding water. • Select the daily time for reading the rain gauge. • Place the rain gauge in the chosen place. • Take a reading at the set time. 	<p>Students are able to read collected data accurately.</p> <p>Students are able to read a rain gauge.</p> <p>Students are able to interpret a rain gauge reading.</p>	<p>Have available a variety of containers - different shapes, some with measurements marked some without.</p> <p>See web link to the Franklin Institute - making a rain gauge.</p>
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Objectives	Lesson Activities	Outcomes	Notes
<p>Students develop an awareness of the need to record accurately.</p>	<ul style="list-style-type: none"> • Set the students the problem - how are they going to measure the wind direction and speed? • Discuss the suggestions. Ask the students their views as to the possible success of the suggestion. • Take the students outside and observe the strength of the wind – what can the students observe being moved by the wind? • Ask the students if they know what a weather vane is. • Establish and mark on the ground in the form of a cross North, South, East and West. • Choose a student to stand on the centre point of the marked cross with the wind blowing on their back. • Ensure the students know that the wind symbols indicate the direction that the wind is blowing from. (the arrow indicates the wind direction) • Choose another student to select the wind symbol that corresponds to the direction that the wind is blowing from. • In the classroom show the students the enlarged Beaufort Wind Scale Chart. • Use the Beaufort Wind Scale Chart criteria for judging the wind speed. • Discuss the importance of knowing the direction and speed of the wind. 	<p>Students are able to assess wind direction.</p> <p>Students are able to assess wind speed.</p>	<p>If possible have an example of a weather vane. Is there a weather vane in the locality of the school?</p> <p>Ascertain points of the compass in relation to where weather observations are to be made.</p> <p>Print and laminate the points of the compass - North, South, East, West and the wind symbols support sheets.</p> <p>For further information see: http://www.bbc.co.uk/weather/world/symbolskey.shtml</p> <p>Use a photocopier to enlarge the Beaufort Wind Scale Chart.</p>
<p>Students learn to use simple equipment appropriately.</p>	<ul style="list-style-type: none"> • Select the daily time for measuring wind speed and direction. • Record on the Weather Today worksheet. 	<p>Students are able to interpret and record information.</p>	<p>Younger students may need support to read, interpret and represent the Beaufort Wind Scale Chart.</p>
<p>Students learn how to enter information onto a data collection form.</p>	<ul style="list-style-type: none"> • Enter the wind speed and direction onto the online Weather Detectives Publisher. • Class activity using interactive whiteboard. 	<p>Students understand that data can be presented in a pictorial form.</p>	<p>Data is immediately displayed in pictorial form.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn to understand the effect of the weather on their lifestyle.</p> <p>Students learn to understand the effect of the weather on the environment.</p>	<ul style="list-style-type: none"> • Establish what the weather is like today in terms of temperature, wind strength, cloud cover, precipitation. • Ask the students to share how the weather has made them feel today. • Ask the students if the weather influenced their choice of clothes. • Ask the students if the weather influenced their choice of outside activities. • Ask the students what effect the weather is having on the immediate environment. <p>Younger students, with teacher support, draw a picture of themselves representing the effect of the weather – wellington boots or t-shirt, sad face, happy face.</p> <p>Older students write an account of the effects of the weather on their lifestyle.</p>	<p>Students develop an awareness of the effects of weather on themselves and their lifestyle.</p> <p>Students develop an awareness of the effects of weather on their immediate environment.</p>	<p>If possible collect pictures of different types of weather to use as discussion stimuli.</p>
<p>Students learn to organise and explain numerical data in a written form.</p> <p>Students learn how to write a collaborative text</p>	<p>Prepare the text review using the following as examples -</p> <ul style="list-style-type: none"> • What is the maximum temperature recorded? • How many cloudy days? • How many days have been windy? • What effect has the weather had on the students? • Enter information on the Weather Detectives Publisher. 	<p>Students are able to evaluate data collection results.</p> <p>Students are able to write in a style to suit a particular purpose.</p>	<p>Students interpret data as percentages.</p> <p>Teacher scribe or word process to reorder/redraft to produce final draft.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn how to retrieve work that has been saved.</p>	<ul style="list-style-type: none"> • Show the students how to find the web page on which the data and text has been previously entered. 	<p>Students will be able to retrieve their saved project work.</p>	<p>Introduce the skill of using a spell check by using a word processing program to provide the students with a text sample to spell check.</p>
<p>Students learn how to use a spell check.</p>	<ul style="list-style-type: none"> • Explain that the data and the text needs to be proof read before it is published on the project web site. • Show older students how to use a spell check. 	<p>Students will be able to use a spell check when using a word processing program.</p>	
<p>Students learn to ensure their work is suitable for the intended audience when published.</p> <p>Students learn how to publish their work on the project web site.</p>	<ul style="list-style-type: none"> • Discuss with the students their uploaded work. • Do they think the style of the presentation of their collected information on the web page is suitable for their intended audience? • Explain to the students the function of the Publish button. • The <i>teacher checks</i> the contents of the web page when the students have decided that the uploaded work is ready to publish. • Select the Publish button. • Show the students their web page on the project web site. 	<p>Students will know how to present work that is fit for the intended audience.</p> <p>Students will know how to publish their work on the project web site.</p>	<p><i>Before publishing the students' work check the school's Internet policy.</i></p> <p><i>Ensure that only a student's first name has been used in a text account and that no students in a photo are identified by name.</i></p>

Objectives	Lesson Activities	Outcomes	Notes
Students learn to prepare and input data into a database.	<ul style="list-style-type: none"> The students enter the temperature, cloud cover, wind speed and direction information they have collected on to a data collection form on the project website which immediately generates a graph, or a pictorial representation. 	Students develop an understanding of the potential use of a computer to generate information from a database and to solve problems using a database.	
Students learn to use ICT appropriately to communicate ideas through text.	<ul style="list-style-type: none"> The students use a word processing program to assemble the information they have obtained through the weather observation activities. 	Students are able to change the layout of text in a word processing program.	
Students learn to use a word processing program to organise text.	<ul style="list-style-type: none"> The activity will enable the students to use copy, cut and paste to reorganise the text. The students will be able to spell check their final draft. Using a copy of the text account which has been submitted to the project web site, the students could decide which font, colour and size would be appropriate for another type of display - e.g. a classroom display, an information book. Younger students could be given a prepared text to use to decide which font, colour and size would be appropriate for a given type of display. 	<p>Students are able to use a word processing program to produce a text that is suitable for the intended audience.</p> <p>Students are able to decide which font size and colour are the most suitable for the way in which their work is to be displayed.</p>	
Students learn to save their work.	<ul style="list-style-type: none"> Students print and save the text account. 	Students are able to print and save work.	
Students learn to retrieve work that has been saved.	<ul style="list-style-type: none"> Students retrieve the saved text account at a later date. 	Students are able to retrieve saved work.	
<p>Students learn to use a digital camera.</p> <p>Students learn that a digital image can be printed out or used on a web site.</p>	<ul style="list-style-type: none"> Students take photos to support their weather observations. Students organise the photos to make a slide show of the week's weather observations. 	<p>Students are able to use the viewfinder on a camera to compose a photo.</p> <p>Some students will know that a photo is changed in form when displayed on a web site.</p>	The photos taken by the students could be used for classroom display or as part of a class book.

The purpose of this week is for each group of students to use the knowledge and skills of Week 1 to collect evidence by making observations. The students will collect, record and analyse numerical data. The students write a collaborative review of the collected data. This activity gives the students the opportunity to write in a style that demonstrates an awareness of the intended audience.

Curriculum focus	Learning Objectives
English	<ul style="list-style-type: none"> • To be able to read for information. • To be able to vary the style of writing to suit purpose and audience. • To be able to share written accounts. • To be able to write a factual account. • To be able to write an evaluation of a task.
Science	<ul style="list-style-type: none"> • To understand that it is important to collect evidence by making observations and measurements. • To be able to recognise when a test or comparison is unfair. • To be able to make systematic observations and measurements
Mathematics	<ul style="list-style-type: none"> • To be able to collect, present and interpret data. • To be able to compare data in graphical form.

Curriculum focus	Learning Objectives
Geography	<ul style="list-style-type: none"> • To be able to describe what a place is like. • To be able to use appropriate fieldwork techniques and instruments. • To be able to use appropriate geographical vocabulary. • To be able to communicate in ways appropriate to task and audience.
ICT	<ul style="list-style-type: none"> • To be able to communicate and handle information. • To be able to present information with an awareness of audience. • To be able to evaluate the success of using ICT to communicate information and to share data.

The main focus of this week is for each group of students to compare, collect and use data to compare weather observations made by other groups of students.

Step	Title	Notes
1	Review Time.	Use published work to make weather comparisons.
2	I am a Weather Forecaster.	Individual account.
3 Daily	We Can Measure Temperature.	Daily temperature recording.
4 Daily	Look at the Clouds.	Daily observation of cloud cover.
5 Daily	We Can Measure Wind Direction and Speed.	Daily measurement of wind direction and speed.
6	Rain, rain go away	Individual text account on the effects of the weather.
7	How to be a Weather Detective.	Whole class text account.
8	What We have Learnt.	Overview observations of the project.
9	Goodbye.	Final text communications and graphics.
10	Publish Our Work.	Publish the final text and graphics.

Resources
<p>Provided</p> <p>Data collection sheets</p> <ul style="list-style-type: none"> • The Weather Today • The Weather This Week • Weather Report • Temperature Today • Daily Temperature <p>Support sheets</p> <ul style="list-style-type: none"> • Weather Symbols • My Weather Symbols <p>Optional</p> <ul style="list-style-type: none"> • Digital camera. <p>Maximum, Minimum thermometers.</p>

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Expectations for this week
<p>Most students will be able to</p> <ul style="list-style-type: none"> • make observations to collect information • use symbols to record information • interpret information represented by symbols • retrieve stored information • make comparisons using retrieved information • communicate and handle information • present information with an awareness of audience <p>Some students will be able to</p> <ul style="list-style-type: none"> • use instruments to make accurate measurements • interpret information recorded by scientific instruments • compare information and decide on the fairness of the comparison

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn that information and data can be stored and retrieved.</p>	<ul style="list-style-type: none"> • Show the students the data and text that they posted on the project web site in Week 1. • Discuss with the students the success of their style of text account. • Ask the students if there are any changes they would make to the style of text account. 	<p>Students are able to evaluate the success of the presentation style of their work.</p> <p>Students are able to suggest changes they would make.</p>	<p>Activity suitable for use on an interactive whiteboard.</p>
<p>Students learn to evaluate the effectiveness of different formats and layouts.</p>	<ul style="list-style-type: none"> • The students view the Week 1 web pages of other participating students. • Discuss with the students the similarities and differences in the style chosen for the text account. • Ask the students to decide which text accounts they prefer. • Encourage the students to give reasons for their preferences. 	<p>Students are able to express a preference.</p> <p>Students are able to give reasons for their preference.</p>	<p>If possible, ensure that comparisons of text are made between similar aged students.</p> <p>Activity suitable for interactive whiteboard or individual computer use.</p>
<p>Students learn to read and interpret data.</p> <p>Students interpret and use data in problem solving activities.</p>	<ul style="list-style-type: none"> • The students view the data collection results of other participating students. • Discuss the other participating students data collection results. • Use the data results to ask the students comparative questions. • Younger students use the graphical information to make direct observations. How many cloudy days? Which was the warmest/coolest day? • Older students use the graphical information to solve problems that involve further calculations. Using the graphical temperature data from their observations, what was the average temperature for the week? Select 3 other schools and use the graphical data to establish the average temperature for the week. 	<p>Students are able to read and compare information and data.</p> <p>Students are able to select an appropriate calculation method in problem solving activities.</p> <p>Students are able to use recorded information in problem solving activities.</p>	<p>If possible choose a group of students with contrasting weather observations.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students use symbols to represent information.</p> <p>Students use and interpret symbols.</p>	<ul style="list-style-type: none"> • Recap with the students the Weather Symbols worksheet. • Younger students make a weather map using symbols. • Younger students tell a partner about the weather they have represented on their map. • Older Students are given a weather forecast. The students make a weather map using symbols to represent the information. • Older Students write a weather report based on the weather forecast information. • Older students give a presentation using their weather report and weather map. <p><i>Optional</i></p> <ul style="list-style-type: none"> • <i>Make a video recording of the students making their weather forecasts.</i> 	<p>Students are able to represent information using symbols.</p> <p>Students are able to interpret information represented by symbols.</p> <p>Students are able to share information.</p>	<p>Use the individual Weather Symbols pictures and words to recap.</p> <p>Collect weather maps and information from newspapers.</p> <p>Continue to use the weather corner to enable students to take it in turns to make a weather map and to provide a weather forecast using the map.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students develop an awareness of the need to record accurately.</p> <p>Students use simple equipment appropriately.</p>	<ul style="list-style-type: none"> • Recap on the units of measure used to record temperature. • Show the thermometers and recap the scale and method of reading. • Recap why temperature is not taken in full sun. • Decide on the time and place for placing and reading the thermometer. • Select the daily time for reading the thermometer. • Place the thermometer in the chosen place. • Choose different students each day to take a reading at the set time. • The students report the temperature to the other students in the group. <p>Younger students record on Temperature Today data recording sheet.</p> <p>Older students record on the Daily Temperature line-graph recording sheet.</p>	<p>Students are able to select a suitable place for the thermometer to ensure an accurate reading.</p> <p>Students are able to read a thermometer.</p> <p>Students are able to interpret a thermometer reading.</p> <p>Students are able to read and share information.</p> <p>Students are able to record collected data accurately.</p> <p>Students are able to record data as a line graph.</p>	<p>Have available a large size and small size thermometer.</p> <p>Younger students may need support to read, interpret and represent the thermometer readings.</p>
<p>Students learn how to enter information onto a data collection form.</p>	<ul style="list-style-type: none"> • Enter the temperature onto the online Weather Detectives Publisher. • Class activity using interactive whiteboard. 	<p>Students understand that numerical data can be presented in a graphical form.</p>	<p>Data is immediately displayed in graphical form.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students develop an awareness of the need to record accurately.</p>	<ul style="list-style-type: none"> • Recap with the students the meaning of ‘cloud cover’. • Show the students the symbols for cloud cover • Select the daily time for observing cloud cover. • Record the cloud cover observed on the Weather Today worksheet. 	<p>Students are able to use symbols to record observations.</p>	
<p>Students learn how to enter information onto a data collection form.</p>	<ul style="list-style-type: none"> • Enter the cloud cover observation onto the online Weather Detectives Publisher. • Class activity using interactive whiteboard. 	<p>Students understand that data can be presented in a pictorial form.</p>	<p>Data is immediately displayed in pictorial form.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students have an awareness of the need to record accurately.</p>	<ul style="list-style-type: none"> Recap and mark on the ground in the form of a cross North, South, East and West. Remind the students how to find the direction of the wind by standing on the centre point of the marked cross with the wind blowing on their back. Show the students the enlarged Beaufort Wind Scale Chart. Choose different students to, at the set time each day, measure the wind speed and direction. The students report the daily wind direction and speed to the other students in the group. 	<p>Students are able to assess wind direction.</p> <p>Students are able to assess wind speed.</p>	<p>If possible have an example of a weather vane.</p> <p>Ascertain points of the compass in relation to where weather observations are to be made.</p> <p>Remind the students that the laminate support sheets, North, South, East, West point to the direction indicated, and the wind symbols indicate the direction of the wind.</p> <p>Use a photocopier to enlarge the Beaufort Wind Scale Chart.</p>
<p>Students learn to use simple equipment appropriately.</p>	<ul style="list-style-type: none"> Select the daily time for measuring wind speed and direction. Record on the Weather Today worksheet. 	<p>Students are able to interpret and record information.</p>	<p>Younger students may need support to read, interpret and represent the Beaufort Wind Scale Chart.</p>
<p>Students learn how to enter information onto a data collection form.</p>	<ul style="list-style-type: none"> Enter the wind speed and direction onto the online Weather Detectives Publisher. Class activity using interactive whiteboard. 	<p>Students understand that data can be presented in a pictorial form.</p>	<p>Data is immediately displayed in pictorial form.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn to understand the effect of the weather on their lifestyle.</p> <p>Students learn to understand the effect of the weather on the environment.</p>	<ul style="list-style-type: none"> • Establish what the weather is like today in terms of temperature, wind strength, cloud cover, precipitation. • Ask the students to share how the weather has made them feel today. • Ask the students if the weather influenced their choice of clothes. • Ask the students if the weather influenced their choice of outside activities. • Ask the students what effect the weather is having on the immediate environment. <p>Younger students, with teacher support, draw a picture of themselves representing the effect of the weather – wellington boots or t-shirt, sad face, happy face.</p> <p>Older students write an account of the effects of the weather on their lifestyle.</p>	<p>Students develop an awareness of the effects of weather on themselves and their lifestyle.</p> <p>Students develop an awareness of the effects of weather on their immediate environment.</p>	<p>If possible collect pictures of different types of weather to use as discussion stimuli.</p>
<p>Students learn to organise and explain numerical data in a written form.</p> <p>Students learn how to write a collaborative text</p>	<p>Prepare the overall text review using the following as examples –</p> <ul style="list-style-type: none"> • What have been the main features of the weather over the two weeks? • Has the weather influenced the clothes the students have worn during the past two weeks? • Has the weather affected the students’ choice of outside activities? • Has the weather had an effect on the environment? • Enter information on the Weather Detectives Publisher. 	<p>Students are able to evaluate data collection results.</p> <p>Students are able to write in a style to suit a particular purpose.</p>	<p>Students interpret data as percentages.</p> <p>Teacher scribe or word process to reorder/redraft to produce final draft.</p>

Objectives	Lesson Activities	Outcomes	Notes
<p>Students learn to organise information.</p> <p>Students learn to present information in a style fit for purpose and audience.</p>	<ul style="list-style-type: none"> • Discuss with the students what information a weather detective would need to find out • Ask the students to decide how they would present the instructions for becoming a weather detective. <p>Younger students</p> <ul style="list-style-type: none"> • Teacher led discussion about what a weather detective would need to find out. • Students pictorially record instructions for temperature, rainfall wind speed and direction recording. <p>Older students</p> <ul style="list-style-type: none"> • Students use text and graphics to make an instruction booklet or a computer-based presentation. 	<p>Students are able to share information in a style and with content suitable for the intended audience.</p>	
<p>Students learn to organise and explain numerical data in a written form.</p> <p>Students learn how to write a collaborative text</p>	<p>Prepare the instruction booklet using the following as examples.</p> <ul style="list-style-type: none"> • How do you make sure the daily comparisons are fair? • Where do you place a thermometer to take an accurate recording? • How do you judge the speed of the wind? • How do you find the direction of the wind? • Enter information on the Weather Project Publisher. 	<p>Students are able to evaluate data collection results.</p> <p>Students are able to write in a style to suit a particular purpose.</p>	<p>Students interpret data as percentages.</p> <p>Teacher scribe or word process to reorder/redraft to produce final draft.</p>

Objectives	Lesson Activities	Outcomes	Notes
Students learn how to write in a style suitable for the task.	<ul style="list-style-type: none"> Encourage the students to write an overview of the activities and the results. The summary should include statements about what the students have learnt, identifying similarities and differences between the weather in their location and the locations of other participating groups of students and suggest reasons for these. Teacher scribes the younger students' conclusions. Write sentences on strips of paper so that they can be rearranged to produce the final draft. Older students write and reorganise their own final draft. 	<p>Students are able to communicate in a style best suited to a task.</p> <p>Students are able to summarise information.</p>	<i>If using individual student's names, before uploading the students' work check the school's Internet policy.</i>
<p>Students learn to organise and explain numerical data in a written form.</p> <p>Students learn how to write a collaborative text</p>	<p>Prepare the overall text review using the following as examples.</p> <ul style="list-style-type: none"> What is the maximum temperature recorded during the two weeks? How many cloudy days have there been in the two weeks? How many windy days have there been in the two weeks? Have there been any significant differences in the weather in the two weeks What effect has the weather had on the students? What have the students learnt by comparing their weather with that recorded by students in different locations? Enter information on the Weather Detectives Publisher. 	<p>Students are able to evaluate data collection results.</p> <p>Students are able to write in a style to suit a particular purpose.</p>	<p>Students interpret data as percentages.</p> <p>Teacher scribe or word process to reorder/redraft to produce final draft.</p>

Objectives	Lesson Activities	Outcomes	Notes
Students learn how to write in a style suitable for the task.	<ul style="list-style-type: none"> The students write goodbye messages to other participating students. The students write a collaborative goodbye message. 	Students are able to communicate in a style best suited to a task.	<i>Before publishing the students' work check the school's Internet policy.</i>
Students learn how to take a photo using a digital camera.	<ul style="list-style-type: none"> The students decide on a 'goodbye' photo. This could be of the group, the school or a display linked to the project. Students take a number of photos and then select the one for the web site. 	Students are able to use a digital camera. Students know that photos taken with a digital camera can be published on a web site.	<i>Ensure that only a student's first name has been used in a text account and that no students in a photo are identified by name.</i>
Students learn how to write a collaborative text.	<ul style="list-style-type: none"> Prepare the goodbye messages. Individual students indicate what they enjoyed most about the project. Enter goodbye messages on the Weather Detectives Publisher. Enter the photo on the Weather Detectives Publisher. 	Students are able to share information. Students are able to write in a style to suit a particular purpose.	Younger students – teacher scribe to produce final draft.

Objectives	Lesson Activities	Outcomes	Notes
Students learn how to retrieve work that has been saved.	<ul style="list-style-type: none"> Show the students how to find the web page on which the data and text has been previously entered. 	Students will be able to retrieve their saved project work.	Introduce the skill of using a spell check by using a word processing program to provide the students with a text sample to spell check.
Students learn how to use a spell check.	<ul style="list-style-type: none"> Explain that the data and the text need to be proof read before they are published on the project web site. Show older students how to use a spell check. 	Students will be able to use a spell check when using a word processing program.	
<p>Students learn to ensure their work is suitable for the intended audience when published.</p> <p>Students learn how to publish their work on the project web site.</p>	<ul style="list-style-type: none"> Discuss with the students their uploaded work. Do they think the style of the presentation of their collected information on the web page is suitable for their intended audience? Explain to the students the function of the Publish button. The <i>teacher checks</i> the content of the web page when the students have decided that the uploaded work is ready to publish. Select the Publish button. Show the students their web page on the project web site. 	<p>Students will know how to present work that is fit for the intended audience.</p> <p>Students will know how to publish their work on the project web site.</p>	<p><i>Before publishing the students' work check the school's Internet policy.</i></p> <p><i>Ensure that only a student's first name has been used in a text account and that no students in a photo are identified by name.</i></p>

Objectives	Web site	Description	Outcomes	Notes
Students learn that the Internet is a source of information.	http://news.bbc.co.uk/cbbcnews/hi/static/weather/default.stm	A UK site for older children to find out about the weather.	The web links enable students and teachers to find and use appropriate project linked information.	<p>Disclaimer</p> <p><i>learning-lincs endeavours to provide high quality and informative global educational projects. Whilst we try to ensure that our projects are educationally sound and safe we cannot guarantee your results with any procedure or project, nor can we be held liable for your activities or outcomes.</i></p> <p><i>Where suitable we will provide links to other sites on the Internet. These links are checked frequently but we cannot be held responsible for the content or quality of materials on these other sites.</i></p>
	http://www.bbc.co.uk/schools/barnabybear/games/weather_report.shtml	Interactive site for 4 – 7 year olds that encourages students to recognise weather symbols.		
	http://www.bbc.co.uk/weather/ukweather/radar.shtml	A UK teacher resource site.		
	www.sutton.lincs.sch.uk/pages/weather/index.htm	Weather and climate resources.		
	http://www.fhc.co.uk/weather/live/	These web cameras provide a year round window on the high mountains of Snowdonia, updated every minute.		
	http://www.weatheronline.co.uk/	A teacher/older student worldwide resource/information retrieval site.		
	http://www.bbc.co.uk/weather/	A teacher resource site.		
	www.weather.com/	The Weather Channel. A teacher resource site.		
	http://www.met-office.gov.uk/education/curriculum/index.html			
	http://www.onlineweather.com/			
	http://www.crh.noaa.gov/lot/webpage/beaufort/	National Weather Service history of the Beaufort scale		
	http://www.zetnet.co.uk/sigs/weather/Met_Codes/beaufort.htm	Definitions of Beaufort scale		
http://www.fi.edu/weather/todo/r-gauge.html	Making a rain gauge			

Objectives	Lesson Activities	Outcomes	Notes
Students learn to prepare and input data into a database.	<ul style="list-style-type: none"> The students enter the information they have collected on temperature, cloud cover, wind speed and direction data-recording sheets on to a data collection form on the project website which immediately generates a graph, or pictorial representation. 	Students develop an understanding of the potential use of a computer to generate information from a database and to solve problems using a database.	
Students learn to use ICT appropriately to communicate ideas through text.	<ul style="list-style-type: none"> The students use a word processing program to assemble the information they have obtained through the weather observation activities. 	Students are able to change the layout of text in a word processing program.	
Students learn to use a word processing program to organise text.	<ul style="list-style-type: none"> The activity will enable the students to use copy, cut and paste to reorganise the text. The students will be able to spell check their final draft. Using a copy of the text account which has been submitted to the project web site the students could decide which font, colour and size would be appropriate for another type of display – e.g. a classroom display, an information book. Younger students could be given a prepared text to use to decide which font, colour and size would be appropriate for a given type of display. 	<p>Students are able to use a word processing program to produce a text that is suitable for the intended audience.</p> <p>Students are able to decide which font size and colour are the most suitable for the way in which their work is to be displayed.</p>	
Students learn to save their work.	<ul style="list-style-type: none"> Students print and save the text account. 	Students are able to print and save work.	
Students learn to retrieve work that has been saved.	<ul style="list-style-type: none"> Students retrieve the saved text account at a later date. 	Students are able to retrieve saved work.	
<p>Students learn to use a digital camera.</p> <p>Students learn that a digital image can be printed out or used on a web site.</p>	<ul style="list-style-type: none"> Students take photos to support their weather observations. Students organise the photos to make a slide show of the week’s weather observations. 	<p>Students are able to use the viewfinder on a camera to compose a photo.</p> <p>Some students will know that a photo is changed in form when displayed on a web site.</p>	

Project Resources

Week 1	Resource
The Weather Today	Worksheet for daily recording of weather observations.
The Weather This Week	Worksheet for recording of overview of weather observations.
Weather Report	Worksheet to support weather forecast activity.
Weather Symbols	Worksheet for weather symbol recognition.
My Weather Symbols	Worksheet to design own weather symbols.
Temperature Today	Younger students daily temperature recording sheet.
Daily Temperature	Older students daily temperature in graphical form recording sheet.

In Week 2 the students work with increasing independence on the activities.

Week 2	Resource
The Weather Today	Worksheet for daily recording of weather observations.
The Weather This Week	Worksheet for recording of overview of weather observations.
Weather Report	Worksheet to support weather forecast activity.
Weather Symbols	Worksheet for weather symbol recognition.
My Weather Symbols	Worksheet to design own weather symbols.
Temperature Today	Younger students daily temperature recording sheet.
Daily Temperature	Older students daily temperature in graphical form recording sheet.

Weather Symbols	Teacher resource A4 individual weather symbols.
Points of the Compass	Teacher resource A4 individual north, south, east, west arrow direction cards.
Wind Direction Symbols	Teacher resource A4 individual wind direction symbols.
Beaufort Scale	Teacher resource definition of wind speed.

Name _____ Date _____

The Weather Today

	Monday	Tuesday	Wednesday	Thursday	Friday
Cloud Cover					
Temperature					
Wind Strength					

Name _____ Date _____

The Weather This Week

Date From: _____ To: _____	Observations
Temperature	
Wind Strength	
Effects on People	
Effects on the Environment	

Name _____ Date _____

Temperature Today

°	Monday	Tuesday	Wednesday	Thursday	Friday

Name _____

Date _____

Daily Temperature

°	Monday	Tuesday	Wednesday	Thursday	Friday



Weather Report



By.....

1. Introduction

Here is the weather forecast for

.....
2. At the moment..

.....
3. This morning

.....
4. This afternoon

.....
5. Tonight

.....
6. Outlook

.....

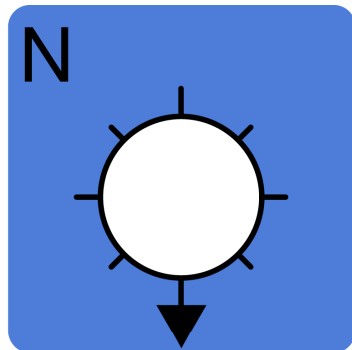
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Weather Symbols







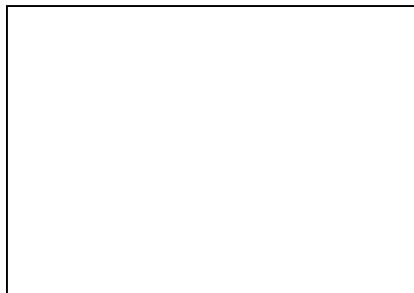




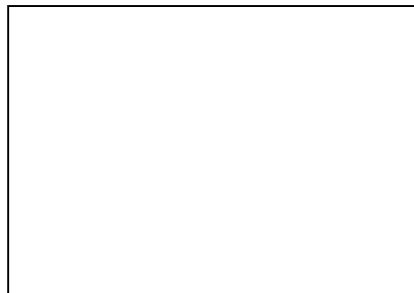


Name _____ Date _____

My Weather Symbols



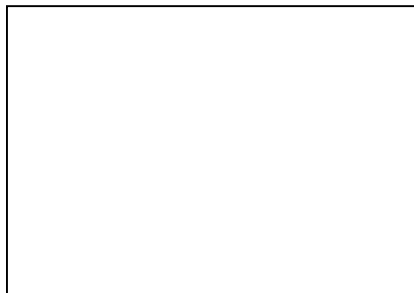
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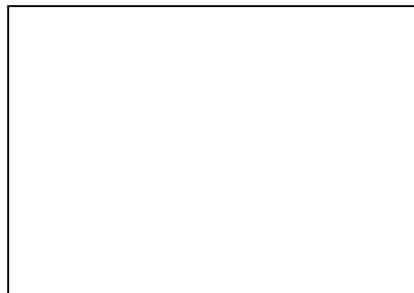
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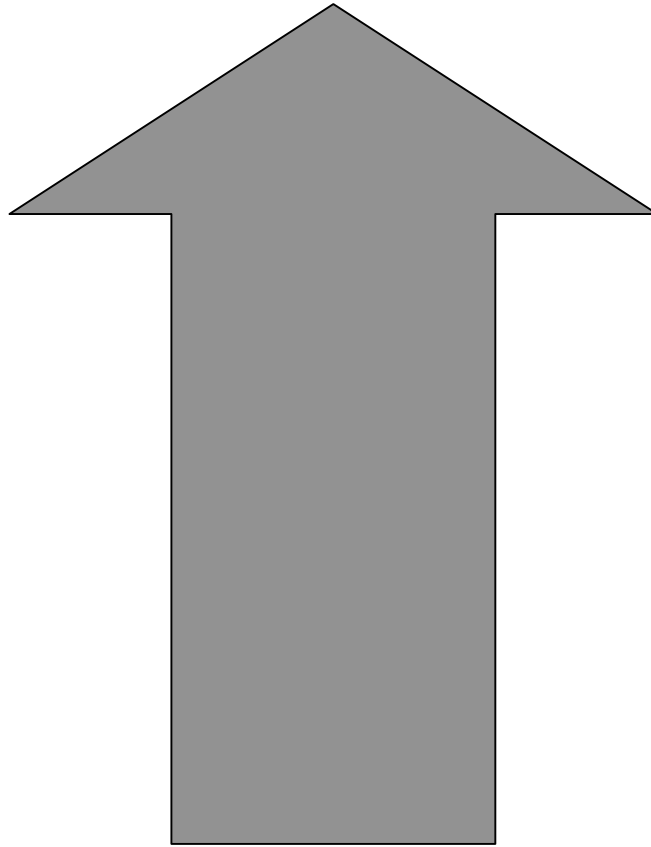


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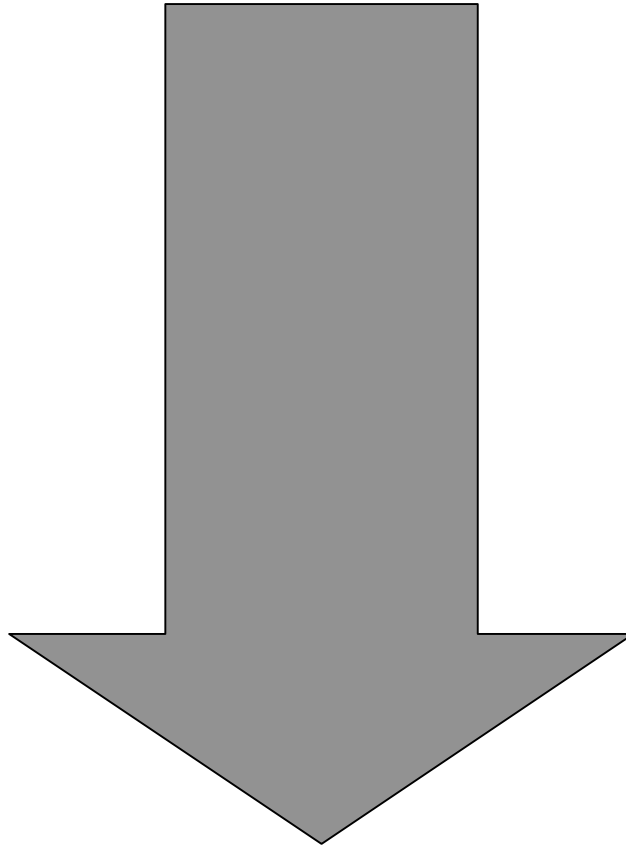


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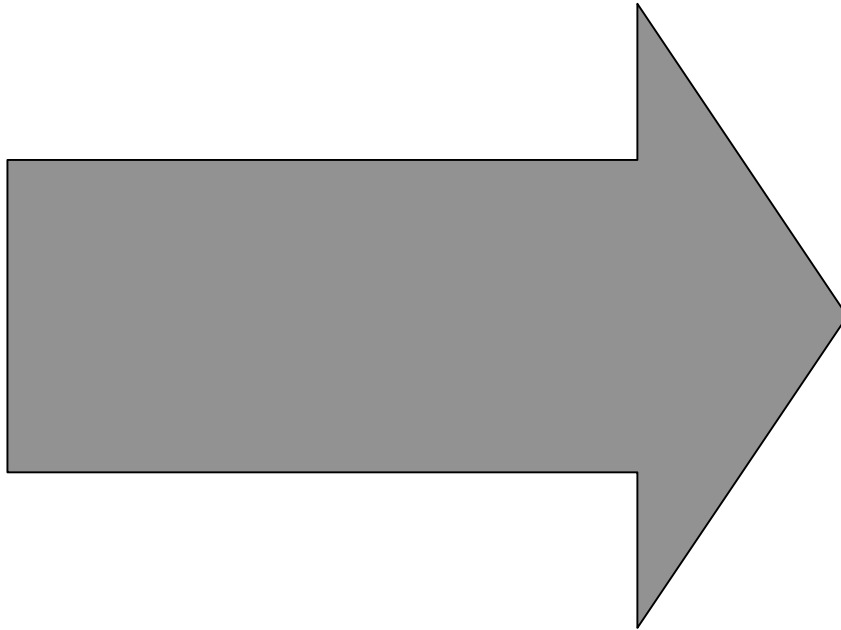
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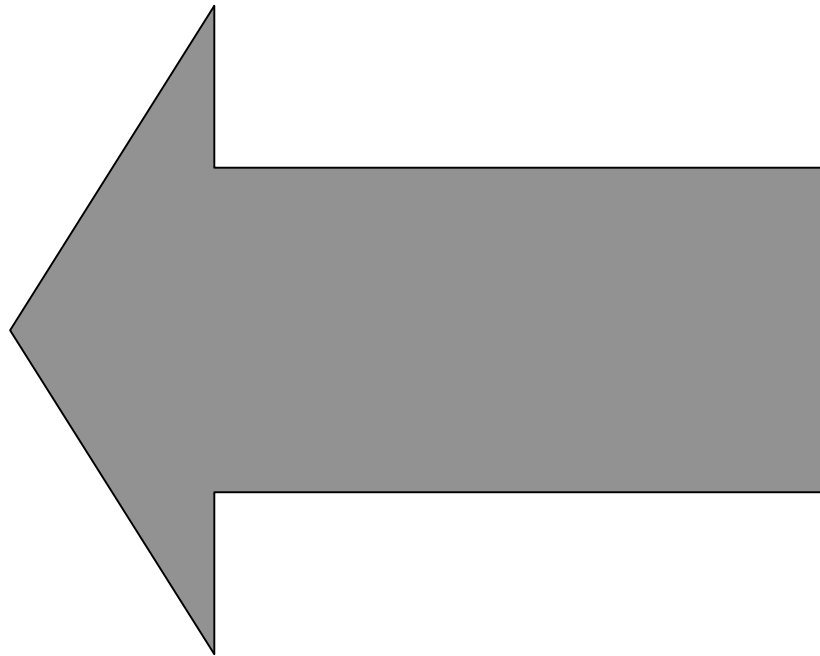
South



East



West





sunny





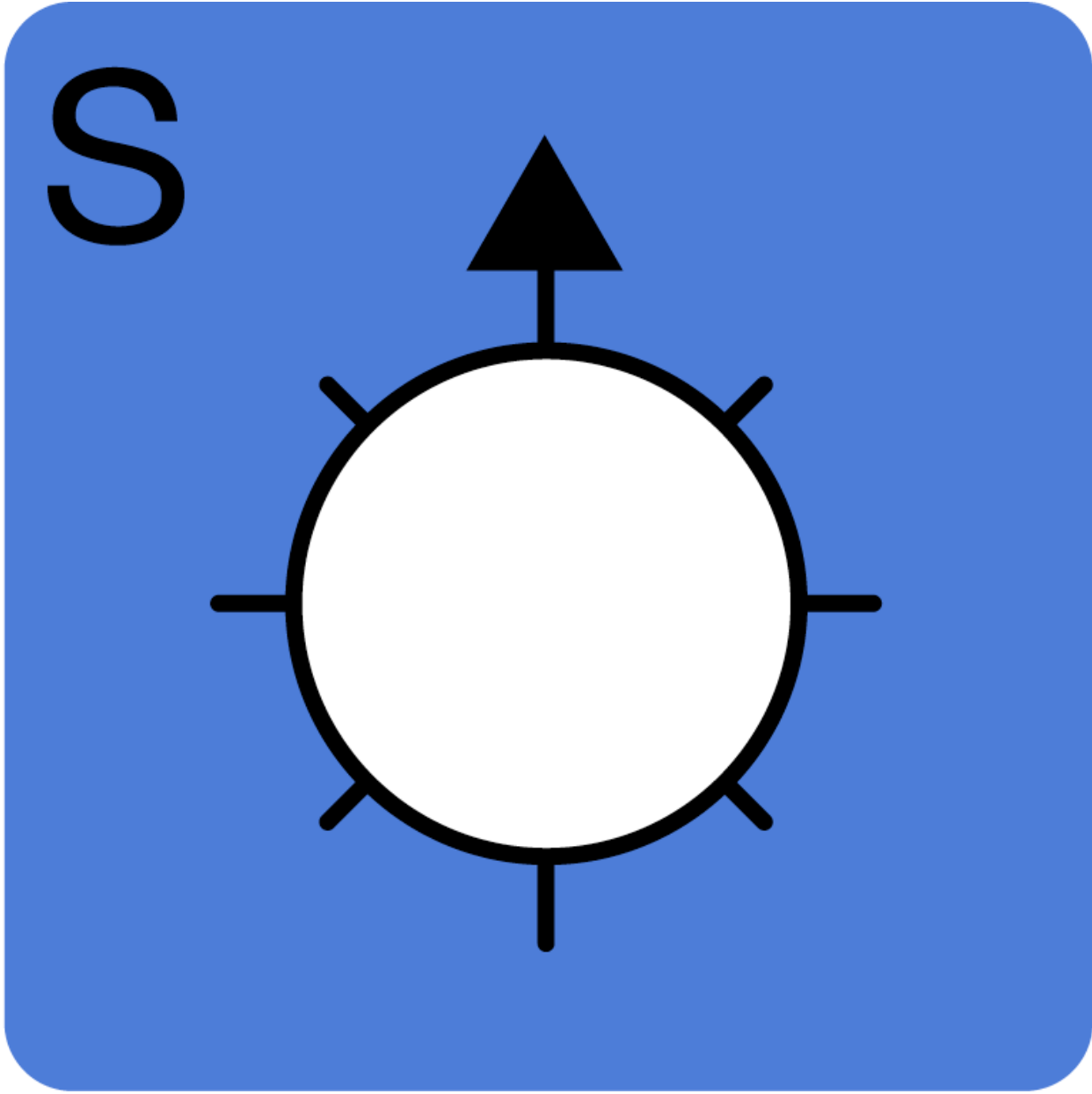
cloudy



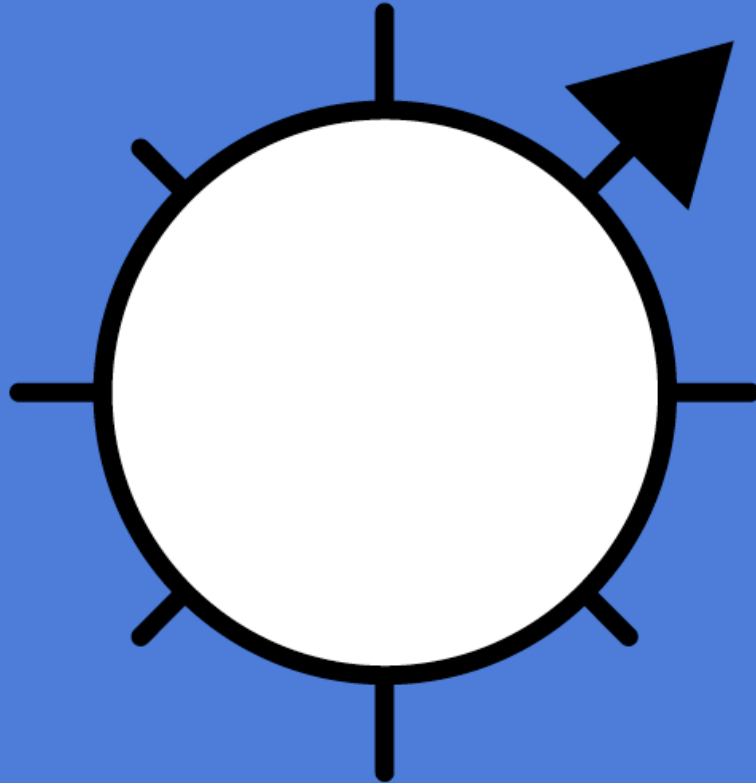
rain



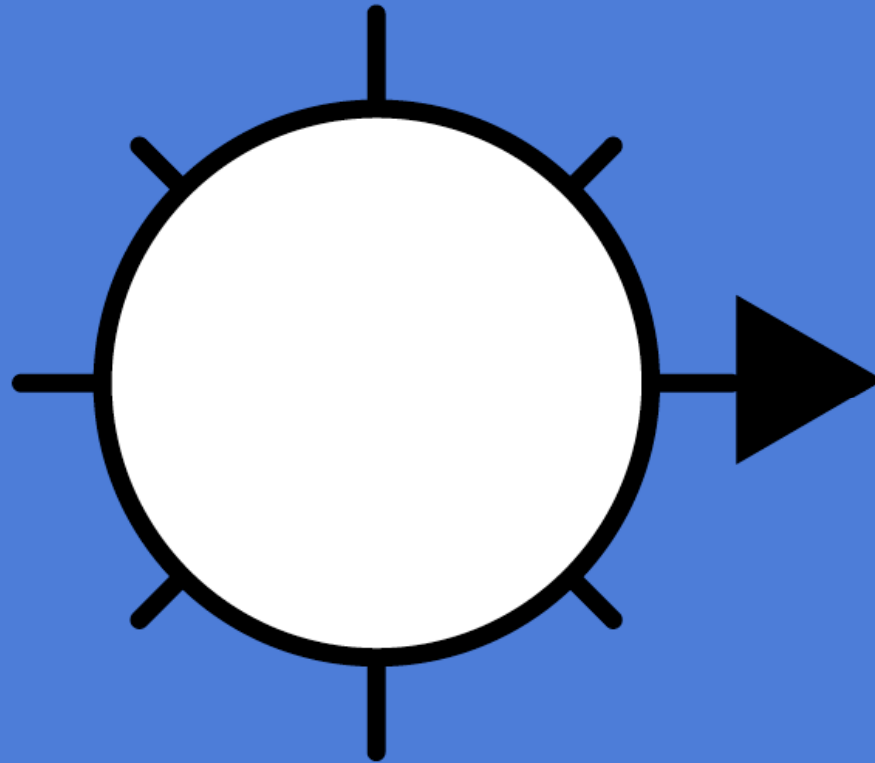
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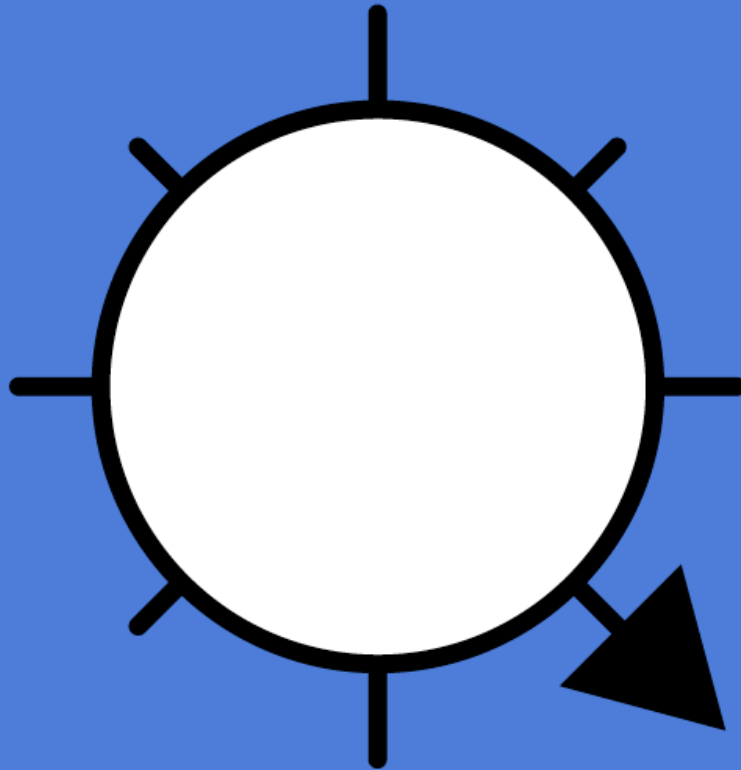
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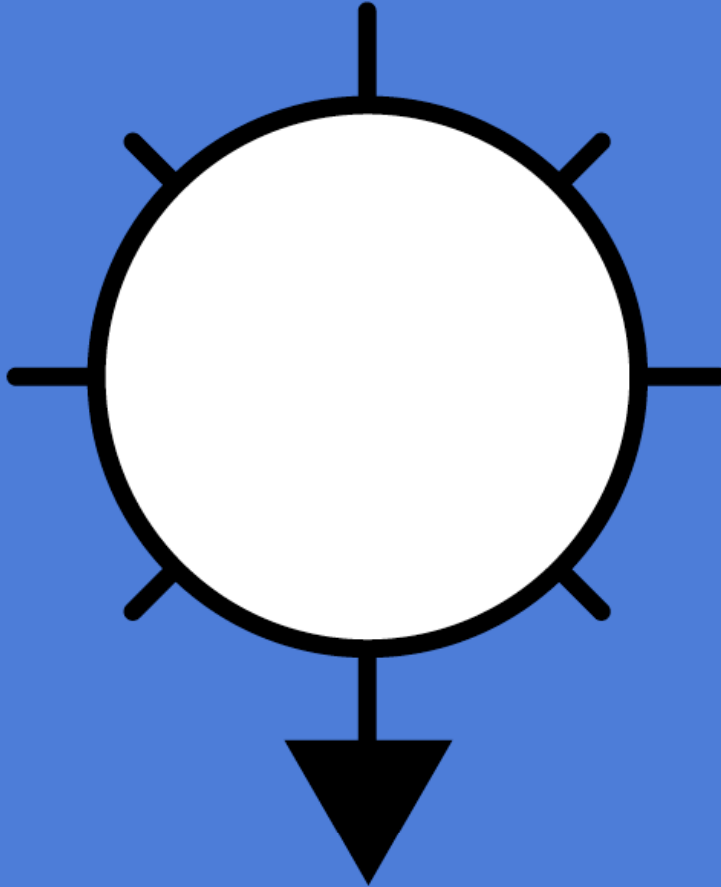
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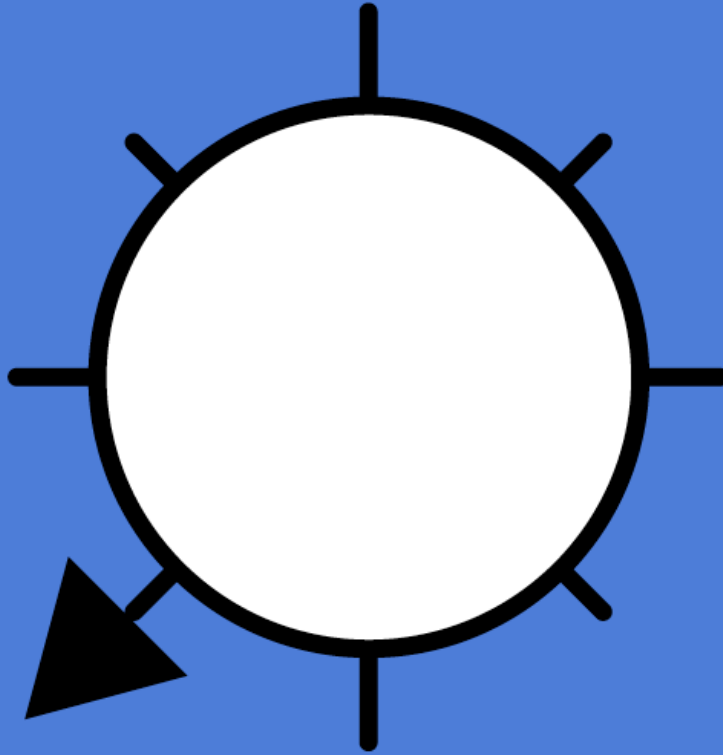
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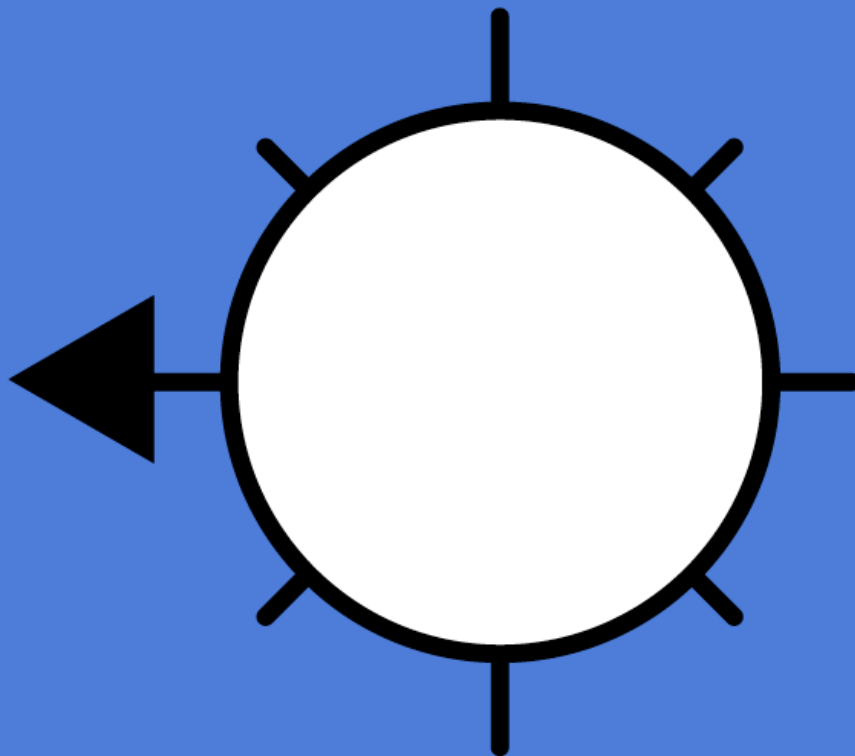
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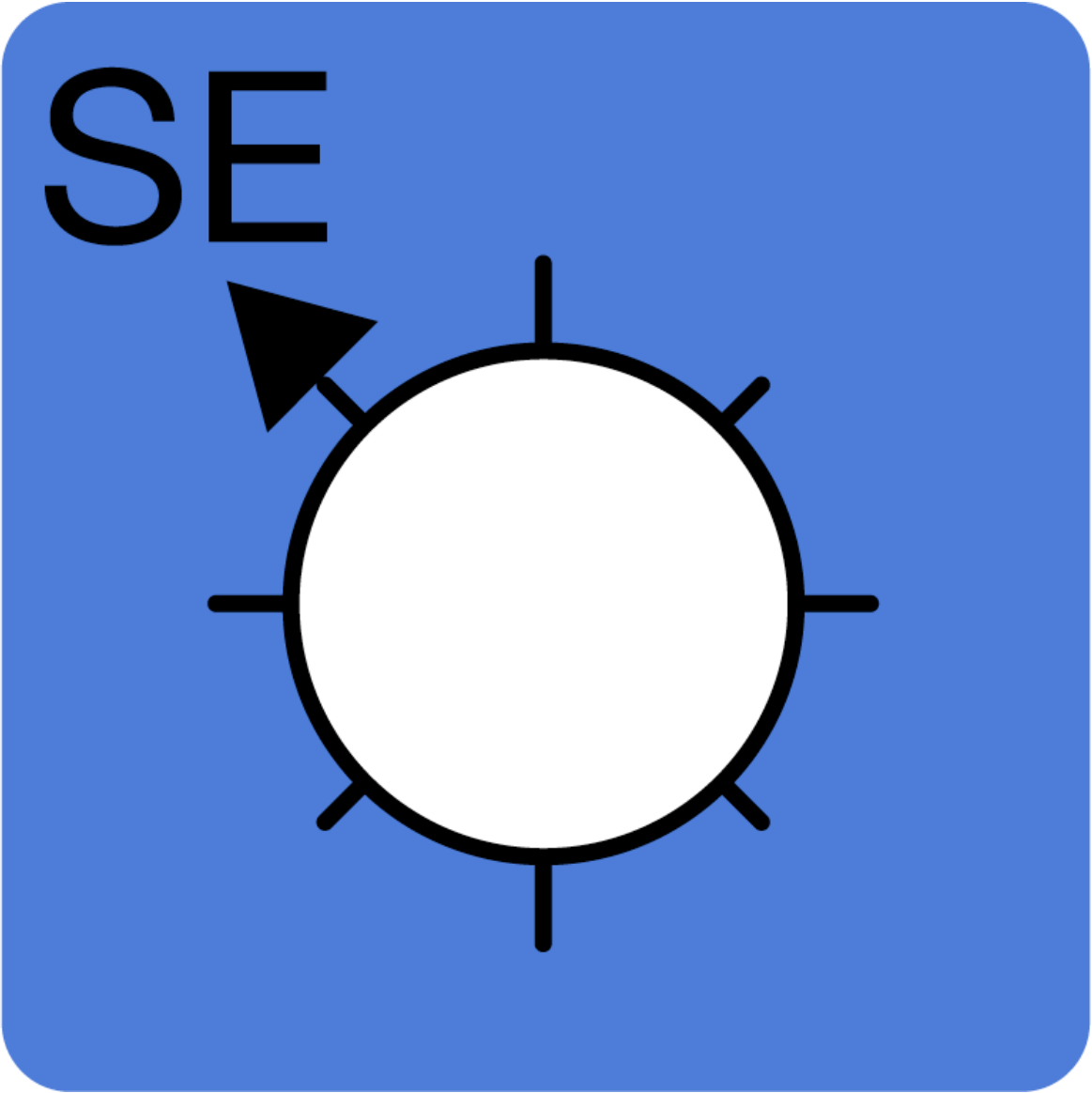


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The Beaufort Scale

Force 0	Calm	We cannot feel the wind on our faces.
Force 2	Light breeze	We can feel the wind on our faces. A weather vane moves.
Force 4	Moderate breeze	We can see small branches moving. Dust and paper are blown around.
Force 6	Strong breeze	We can hear the telegraph wires whistling. It is difficult to use an umbrella.
Force 8	Gale	We see twigs breaking off the trees. We get blown about when we try to walk.
Force 10	Storm	We know that trees have been uprooted. Roofs may be blown off houses.
Force 12	Hurricane	The wind is so strong we have to take shelter.