**COMPARING THE WEATHER LOCALLY THIS WINTER WITH LAST WINTER (any season may be used).**

**Age group:** senior classes -primary school.

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**Objectives:**

* To enable the children to become familiar with the workings of the school weather station
* to encourage the children to collect weather data on a daily basis
* to enable the children to design suitable tables to record the data
* to enable the children to represent the data in Excel
* to analyse the data in terms of the total, the mean, the mode , the median and the range
* to draw conclusions and comparisons from the data collected
* to make an animation of an aspect of the findings
* to design and build a robot with weather sensors
* to create scratch projects to represent the findings
* to contribute to the STEM for all seasons weather blog
* to investigate various climate phenomena
* to use the Arduino board to programme temperature sensors
* to create Powerpoint presentation on the various aspects of the weather
* to present findings in Sway

**Content:**

**Set up the weather station:**

* Decide on the type of weather station to buy
* Decide on a suitable location so the data collected would be reliable
* Set up the station.



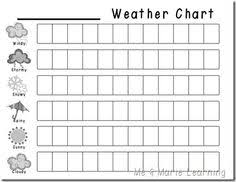
**Make predictions:**

* Invite the students to made predictions - decide on the parameters for the predictions with the class e.g. sunnier, colder, warmer, wetter, windier more humid than last winter
* Collate the findings
* Calculated the percentages for each prediction
* Represented the findings on a pie chart



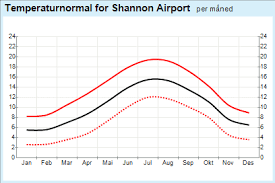
**Record the weather data on a daily basis:**

* Design a suitable table to use to record the information collected
* Decide on what information to collect
  + - maximum daily temperature
    - minimum daily temperature
    - lowest daily grass temperature
    - rainfall in millilitres
    - wind speeds
    - when wind gusts exceeded 34 km
    - sunshine hours
    - the warmest time of the day
    - the coldest time of the day
    - the wettest time of the day
* record on a daily basis the weather information for temperature rainfall wind sunshine hours and grass temperatures.



**Present the data collect:**

* Using the data collected for November /December 2016/2017 draw graphs using excel
* decide on the best type of graph to represent the data collected
* bar chart
* trend graph
* pie chart
* bar line graph



**Compare data collected and draw conclusions:**

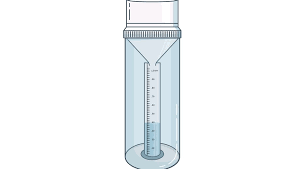
* using the graphs and the data collected set about drawing conclusions
  + - maximum daily temperature
    - minimum daily temperature
    - lowest daily grass temperature
    - rainfall in millilitres
    - wind speeds
    - when wind gusts exceeded 34 km
    - sunshine hours
    - minimum grass temperatures

Write up the findings in detail.



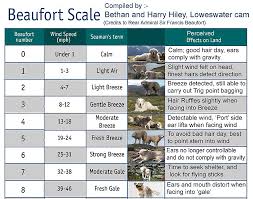
**Making and designing:**

* study the weather instruments used to measure the different components that make up weather
* each student designed and made a weather instrument
* refer to the specific lesson plan on this



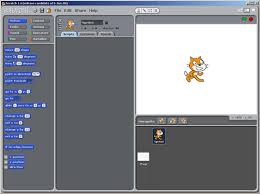
**Group project work:**

* students working in groups selected a weather related topic and designed PowerPoint presentations on their chosen topic
* Present these projects to the class and at assembly
* topics may include
  + weather instruments
  + how to read a weather chart
  + clouds
  + different forms of precipitation
  + sunshine
  + rain
  + the water cycle
  + the Beaufort scale
  + the Met Eireann weather warning system
  + climate change and the marine environment.



**Technology:**

* Build Scratch projects to show the weather findings
* Design and build a robot to crush ice and to travel over rough and icy terrain
* Design and build a robot to pick up litter to reduce pollution and so reduce climate change.



**Animation:**

* Using One stop motion created an animation to represent the findings
* design the story board
* build the necessary elements using clay etc
* write a rap to go for the animation

**Presentation of findings:**

* Present the findings on the website STEM for all seasons
* Present findings at the school assembly.



**Assessment:**

* Teacher observation
* teacher designed tasks
* portfolio assessment
* concept mapping.