



Lesson Plan: Picture Graphs

Level: Stage 1

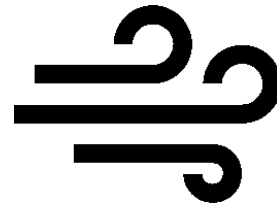
Syllabus links: MA1-17SP “gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results”

LESSON OUTLINE

In this lesson, students will use wind speed data from SWAQ to create a table and a simple picture graph. Once they have completed their graph, they will then interpret the results by answering questions on a worksheet.

Resources/Materials:






- Worksheets (included)
- PowerPoint presentation available on SWAQ website
- Symbol cut outs (included)
- Glue sticks
- Projector with internet access



Description of activity:

Preparation

To prepare for this lesson, you will need to print out enough copies of the wind symbol for all of your students. You may also like to cut out the individual symbols yourself if you want to reduce the amount of time spent cutting and pasting by the students. Each wind symbol will be used to represent 1 km/h of wind. For example, for the following data, adding up the wind speed column gives a total of 18 km/h. This means that each student would need a minimum of 18 wind symbols (we recommend having a few extras in case of mistakes).

	 Temperature (°C)	 Humidity (%)	 Precipitation (mm)	 Wind (km/h)	 Air Quality
Brookvale Public School	25 °C	28 %	0 mm	1 km/h NE	46
Chullora	25 °C	26 %	0 mm	5 km/h NW	32
Dulwich Hill Public School	24 °C	27 %	0 mm	2 km/h E	N/A
Glenorie Public School	24 °C	27 %	0 mm	4 km/h undefined	23
Kellyville Public School	24 °C	28 %	0 mm	6 km/h N	N/A

The amount of symbols they will need will vary depending on how windy it is on the day you do the activity (we recommend that you do not do this on a very windy day as it will require a lot of cutting and pasting!). To allow you to better prepare, it is possible to pre-choose a specific time and date so that you know exactly how many symbols the students will need. Instructions on how to do this are included in the section below titled “things to note”.

During the lesson

To begin the lesson, have a discussion with your students about the different types of weather. This can be done as a brainstorming activity or a casual discussion. You should aim to identify at least the following main types: sunny, cloudy, rainy, windy, stormy.

Introduce the idea that often, when communicating weather reports, we use symbols to represent the different types of weather. Here, you should show them the PowerPoint presentation. Each slide contains one weather symbol. Ask them to try to guess what type of weather the symbol represents, and then click to reveal the answers. The final slide shows the symbol for windy. This is the symbol that they will be using for their picture graphs, so it is important that they all understand the meaning of this symbol.

Tell your students that they will be looking at some real-life wind speed data that has been collected from the SWAQ stations around Sydney. Their task is going to be to create a table and a picture graph to represent the data. At this point you should give the students the first page from the worksheet. Go online to www.swaq.org.au/explore and scroll down until you see your school (and 4 other schools). On their worksheet, the students should fill in the numbers according to the data in the wind speed column.

Once they have completed their tables, the students will be making a picture graph. Before they do this, use the PowerPoint to give them a demonstration. For each km/h of wind speed, they should use one wind symbol.

Distribute the cut-out wind symbols. Using their tables for reference, students should use glue sticks to stick the appropriate number of symbols onto their picture graphs.

Once the students have finished their picture graphs, they will interpret them by answering questions from the second page of the worksheet. Before the students do this themselves, you should use the picture graph in the PowerPoint as an example. Sample questions that you can ask them have been written in the notes for this slide. After going through the example, ask the students to complete the worksheet which contains similar questions about their picture graphs. A bonus task (drawing the windiest playground) has been included at the end of the worksheet for those students who finish first.

Things to note:

To make the graphing a little simpler, only 5 of the 11 schools will be used for the activity. In our worksheets, we have created two different versions using a different set of 5 schools. You can choose to use the version that has your school on it, or if you are not at a SWAQ school, you can use either worksheet.

If you want to make sure that you have enough cut outs of the wind symbols, you can pre-select any time from the past week by moving the sliding orange tab above the measurements to select the time of day, and using the arrows next to the data in the top left to select the desired day (as shown below). If you choose to do this, make sure you remember to select the same day and time when displaying the data on the projector.



The PowerPoint presentation contains the weather symbols for the beginning of the lesson as well as the example table and graph for later in the lesson. Make sure you stop the PowerPoint when you reach the wind symbol, and resume it when you get to graphing section of the lesson.

Additional Resources:

- ▶ A fun video where two monsters collect data and use a picture graph to help them solve a problem. (The full video is quite long (~15mins) so if you are short on time the most important part is from 9.58 until 13.43)

<https://education.abc.net.au/home#!/media/29610/using-data-about-favourite-foods>

- ▶ An informative video demonstrating how to draw a picture graph.

<https://www.youtube.com/watch?v=RQDmO1cTdE>

- ▶ An informative video about wind and its effects.

<https://www.youtube.com/watch?v=HCX5hNivTUQ>

Key Questions to Ask

How can you quickly tell which school is the windiest?

How can you quickly tell which school is the least windy?

If a school has a windspeed of 3 km/h, how many symbols should you use on the picture graph?

What does each symbol represent?


What would it look like if the windspeed was 0 km/h?



Write NUMBERS to fill in the table.

School	Wind speed (km/h)
Brookvale Public School	
Chullora	
Dulwich Hill Public School	
Glenorie Public School	
Kellyville Public School	

Stick on WIND SYMBOLS to fill in the picture graph.

1  = 1 km/h

School	Wind speed (km/h)
Brookvale Public School	
Chullora	
Dulwich Hill Public School	
Glenorie Public School	
Kellyville Public School	



Use your picture graph to answer the questions.

1. Which school is the MOST windy?
2. Which school is the LEAST windy?
3. What is the wind speed at Dulwich Hill Public School?
4. Lane Cove Public School has a windspeed of 5 km/h. How many symbols would it have on the picture graph?
5. Is it windier at Chullora or Kellyville Public School?
6. What is the difference in wind speed in km/h between the school with the least wind and the school with the most wind?


BONUS: On the back of this sheet, draw what the windiest playground might look like.



Write NUMBERS to fill in the table.

School	Wind speed (km/h)
Leppington Public School	
Luddenham Public School	
Narellan Public School	
Newtown Public School	
Taren Point Public School	

Stick on WIND SYMBOLS to fill in the picture graph.

1  = 1 km/h

School	Wind speed (km/h)
Leppington Public School	
Luddenham Public School	
Narellan Public School	
Newtown Public School	
Taren Point Public School	



Use your picture graph to answer the questions.

1. Which school is the MOST windy?
2. Which school is the LEAST windy?
3. What is the wind speed at Luddenham Public School?
4. Lane Cove Public School has a windspeed of 5 km/h. How many symbols would it have on the picture graph?
5. Is it windier at Leppington Public School or Narellan Public School?
6. What is the difference in wind speed in km/h between the school with the least wind and the school with the most wind?

BONUS: On the back of this sheet, draw what the windiest playground might look like.

