

➤ COLLECTING AND GRAPHING DATA

Target Group: **Years 3 and 4**

Australian Curriculum Reference: **Mathematics**

- + Collect data, organise it into categories, and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMSP069).
- + Construct vertical and horizontal column graphs and picture graphs that represent data using one-to-one correspondence.

LESSON SUMMARY

Over an extended period students will plant seeds and tend to them as a volunteer activity. The seedlings will then be planted in the school garden and their produce used in the school canteen.

Students will learn to collect and display data related to the amount of time they spend on daily activities at school and home, including the time spent volunteering to care for their seedlings. Students will develop an appreciation of how a little time spent volunteering can produce positive results for themselves and the environment/community.

LESSON CONTENT AND METHODOLOGY

- + Teacher leads brainstorm exploring the reasons why people (including students) may avoid doing volunteer activities, for example time or other commitments.
- + Discuss how the class could volunteer to maintain and care for the seedlings, such as by developing a roster system where students take turns to tend the seedlings at recess or lunch once a week.
- + Conduct a class survey of students' favourite pastimes. Use this to model the collection and displaying of data.
- + Discuss and model how to collect data in a tally mark table, using activity on Bitesize website: www.bbc.co.uk/bitesize/ks2/maths/data/interpreting_data/play
- + Conduct activity demonstrating how to display data as a picture and a column graph: www.amblesideprimary.com/ambleweb/mentalmaths/grapher.html
- + Over the growing period, students collect data on the time they spent (in hours) per week on daily activities. They record this data in a tally mark table under appropriate category names, such as *watching TV, playing computer games, reading, doing homework, learning in the classroom, playing in the playground and playing sports or games after school*. Students will include *caring for seedlings* as a category.
- + Once the data collection period is over, students will display the data as both a picture and a column graph.

Students will share their data with an emphasis on comparing the time spent caring for the seedlings as a volunteer with time spent on other activities.

- + Teacher leads class discussion, asking students to compare the feelings they have about engaging in their favourite pastimes with how they feel volunteering to care for the seedlings and contributing to the school community. Ask students to compare the time spent on non-volunteering activities per week, and consider whether time is an impact on people volunteering. Emphasise that a little time spent volunteering can produce equal — or even greater — feelings of personal satisfaction than that spent on other pastimes.
- + Ask students to brainstorm other ways and times they could engage in volunteer activities in the school, home or community and how these might replace time spent on other activities.

ASSESSMENT

The teacher can conduct formative assessment during the collection and display of data over the period.

The teacher could use the graph students produce for the last week of the data collection period to use as a summative assessment.

RESOURCES

- + Grid paper
- + Ambleside School website – maths grapher:
www.amblesideprimary.com/ambleweb/mentalmaths/grapher.html
- + Bitesize activity (BBC website): www.bbc.co.uk/bitesize/ks2/maths/data/interpreting_data/play