MODULE 3.
PHONE MATHS

K-2 3-4 **5-6** 7-8 9-10

LESSON OBJECTIVE

In this module students will understand the environmental impact of rapid mobile phone usage in Australia. Students will also develop skills in graphing and manipulating data that relate to growth. At the same time students will develop skills in reporting their findings and presenting them in a visual form.

AUSTRALIAN CURRICULUM CONTENT DESCRIPTION

YEAR 5 MATHEMATICS

- Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (ACMSP119)

YEAR 6 MATHEMATICS

- Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables (ACMSP147)

YEAR 5 SCIENCE

- Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSIS090)
- Compare data with predictions and use as evidence in developing explanations (ACSIS218)
- Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (ACSIS093)

YEAR 6 SCIENCE

- Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSIS107)
- Compare data with predictions and use as evidence in developing explanations (ACSIS221)
- Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (ACSIS110)

LESSON OUTLINE

1. Watch The MobileMuster Promise video and read the Mobile Muster Fast Facts and discuss:

    a. When did the MobileMuster program start?
    b. How often do people replace their mobile phones?
    c. How many old phones are in Australian homes?

2. Inform students that today they are going to look at the growth in mobile phone recycling and graph the data.

3. Using the IWB or graph paper enter the MobileMuster Collection Results into excel.

4. Determine which type of graph is best used to display the dataset. Students may produce various types of graphs (to suit age group) – pictographs (using mobile phones), bar graphs, line graphs or composite bar or line graphs (showing the number of handsets against number of tonnes collected).

5. Students investigate the following questions about the data:

    a. Compare the data for the two periods 2008-2009 and 2009-2010. Why might the number of phones be about the same in both periods, but the weight collected be more in 2008-2009? (Answer: changes in handset, battery and charger design – smaller)
    b. What reasons might be given for the growth in collection since collection programs began in Australia? (Answer: more phones being used, therefore more phones being discarded, and increased awareness of recycling programs)
    c. Using a projection from their graphs, what mobile phone collection data might we expect to see in the future?

6. Discuss the following questions or use them as a basis for student assessment.

    a. How has each new development in a mobile phone always related to the model that came before it?
    b. How were phone manufacturers able to reduce the weight of each new mobile phone that was developed?
    c. What are some of the major technological advancements that influenced mobile phone development?
    d. What have these advancements achieved?

7. Have a look at the MobileMuster Infographic 15 years of Mobile Phone Recycling In Australia. Discuss how the information has been put together. Using the graphs that you have designed in this module and the information you have learnt develop your own Infographic using graphs, images and key words.

RESOURCES

1. Interactive whiteboard (IWB)
2. Video: The MobileMuster Promise
3. Images: 15 years of Mobile Phone Recycling In Australia Infographic
4. Fact Sheet: MobileMuster Collection Results
5. Fact Sheet: MobileMuster Fast Facts
6. Excel (via IWB/computer) or graph paper

SUPPORT MATERIAL

- Video: New Mobile Phone Technology

EXTENSION ACTIVITIES

Mobile Maths Facts: students create 'Fast Facts' cards to post in their classroom or around their school, based on other information from the MobileMuster 'Fast Facts' webpage. You can use the template in the Activities Booklet or online resources.