# Finding Similar Graphs

## Task Description

The teacher introduces and discusses features of different graphs found in the media and from classroom-produced data, e.g. sporting results.
Students are given an example of a graph found in newspapers, the internet or magazines. Students seek others in the classroom with a similar graph. Students compare these graphs, making note of the similarities and differences in the information that these graphs provide. Students explore and discuss the most suitable graphs to represent particular types of data.

## Length of Task

Approximately 30 minutes.

## Materials

- Samples of various graphs from the media (newspapers, magazines, internet etc.)
- Samples of graphs from classroom produced data, e.g. school football or basketball results.

## Using the Activity

Introduction to focus the investigation

The teacher introduces a variety of graphs to the students on an overhead projector or smart board, e.g. bar, column, pie, doughnut, line, scatter. The teacher and students discuss the features of these graphs and the types of data they illustrate.

Main Activity

Each student is given a different graph from the media or classroom generated to examine. Allow a few minutes for students to individually examine the graph and:

- Identify the type of graph,
- The features of the graph,
- The information presented in the graph, and
- Alternative graphs that might represent these data.

Students are instructed to move around the room and seek other students who have similar graphs. The students are to record who has a similar graph to their own graph and the ways the graphs are similar and different.

The teacher roves the room and probes students' understanding of graphs and data. What information is presented in the graph? What do we know about the data from reading this graph? What other ways might you represent these data?
This is a good opportunity for the teacher to explore students' ability to interpret data.

# Finding Similar Graphs

The teacher brings the class together to share and discuss the task. Possible discussion questions are:

- Share with us what are the similarities you noticed between your graph and a classmate's graph?
- What do you notice about the types of information presented in your graphs?
- Would there have been a more suitable graph or way to represent this data?

The students may notice a bell curve occurring in particular graphs and raise this aspect in their discussion. The teacher should have graphs available that illustrates the natural occurrence of a bell curve. Graphs showing daily temperatures or heights of children in a class often reveal a bell curve.

## Key Mathematical Concepts

- Interpreting data from different types of graphical representations.
- Identifying the features of a graph.

## Prerequisite Knowledge

- Understanding the elements of a graph.

## Links to VELS

| Dimension | Standard |
|---|---|
| Measurement, Chance and Data (Level 4) | They present data in appropriate displays (for example, a pie chart for eye colour data and a histogram for grouped data of student heights). |

## Assessment

To be working at level 4, students should be able to:

- Identify the types of graphs and their features used to represent data, e.g. bar, pie, line.
- Identify the similarities between two graphs.
- Interpreting data from different types of representations.
- Evaluate the appropriateness of the graph used to represent selected data.

## Extension Suggestions

For students who would benefit from additional challenges:

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- Introduce different types of graphs that are not commonly found in the media, such as box and whiskers, dot graphs, double bar graphs.
- The excel software program has a range of available graphs for the students to explore. They can input the data from the graph given in class onto a worksheet in excel and produce different graphs for these data. Students can compare which of these graphs best represents the data.
- Record a nightly news or sport program and take samples of the types of graphs used within the television media. Explore the methods television stations use to simplify the data into a manageable form for the viewers to understand. Cricket television shows often present a wealth of data with varying degrees of success. Students may attempt to explore more appropriate ways to represent these data.

## Teacher Advice and Feedback

Ensure that you have enough variety in the graphs you give the students. Often the media employs bar graphs. Start a collection today of a range of graphs found in the media. Ask students to start sourcing graphs in the media, on the internet or even the computer games they play.

## Potential Student Difficulties

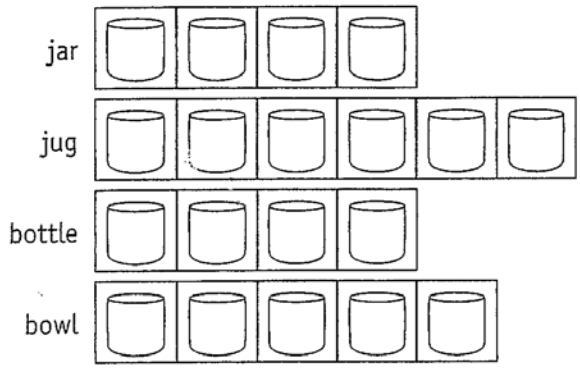
Teachers found that most students could access this task; however, some students had difficulty in interpreting scatter graphs. Further time may be required to develop students' understanding of how scatter graphs are created, what information they provide and how to interpret this information.

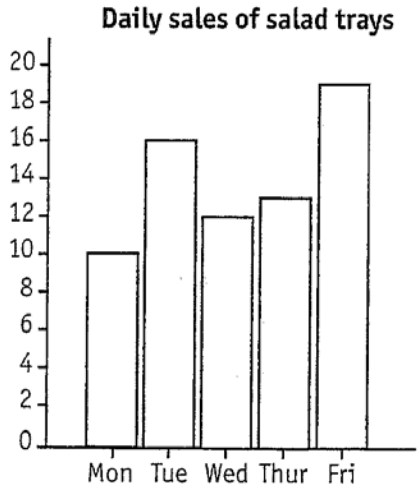
## Acknowledgements

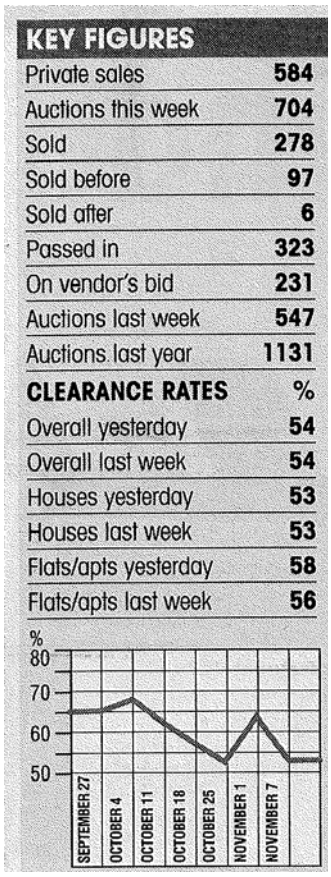
Thank you to the teachers and students from Timbarra Primary School for providing valuable feedback on the use of this activity.

# Finding Similar Graphs

Examples of graphs used in this task.



| KEY FIGURES | |
|---|---|
| Private sales | 584 |
| Auctions this week | 704 |
| Sold | 278 |
| Sold before | 97 |
| Sold after | 6 |
| Passed in | 323 |
| On vendor's bid | 231 |
| Auctions last week | 547 |
| Auctions last year | 1131 |
| **CLEARANCE RATES** | % |
| Overall yesterday | 54 |
| Overall last week | 54 |
| Houses yesterday | 53 |
| Houses last week | 53 |
| Flats/apts yesterday | 58 |
| Flats/apts last week | 56 |