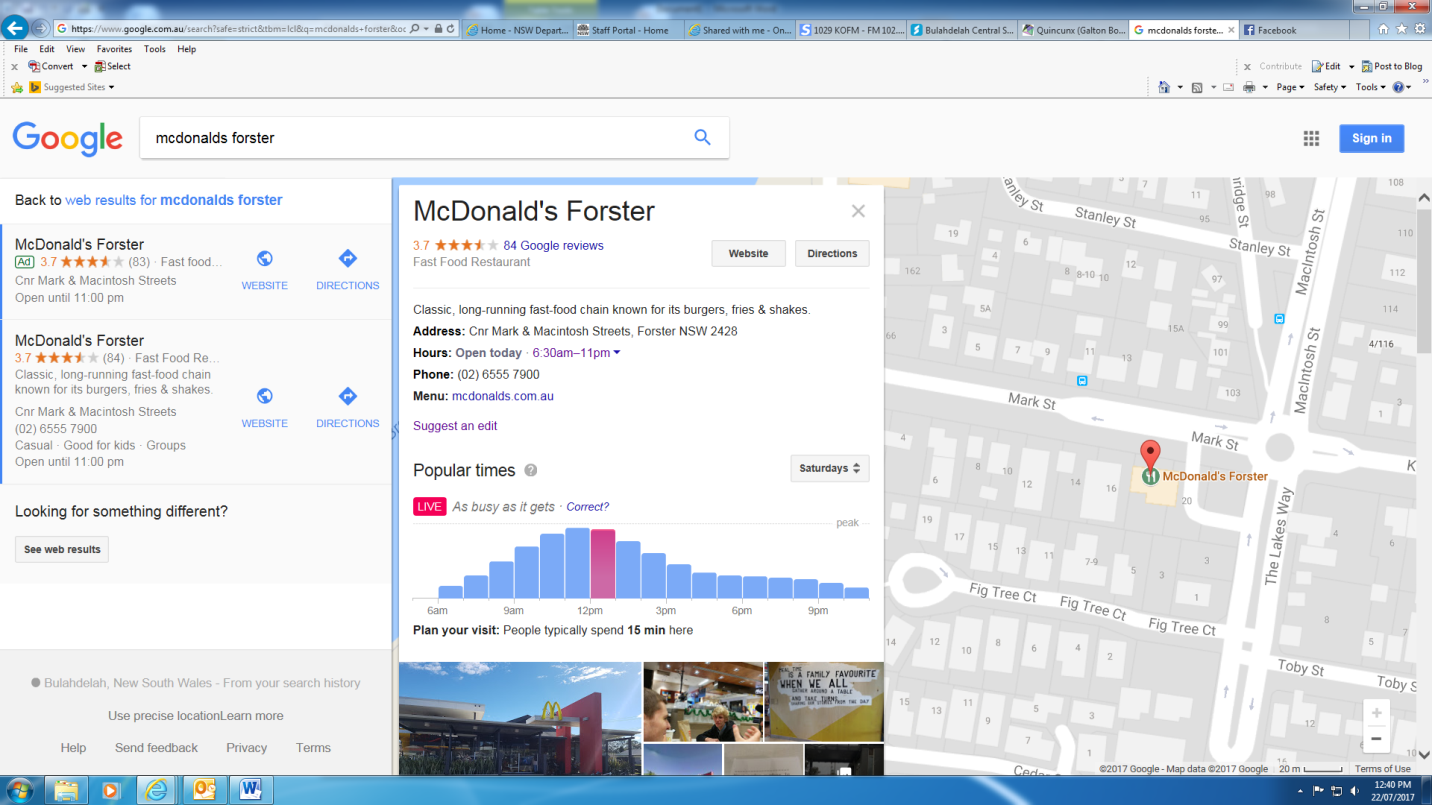
 The shape of business

Learning intention

Students predict, explain and justify statistical data whilst building specific mathematical terminology. Students introduced to a ‘Normal Curve’ and its features.

Resources

Internet access: In order to be successful, many large businesses record data regarding their customers, including ‘Popular Times throughout the day. These can be viewed on a Google search when you look up a business and individual store, for example; McDonalds Forster.



Consider several larger businesses near you. Predict what you think their graphs of “Popular Times” would look like, search and comment on your findings. Things to consider when commenting on your findings are “Is the distribution influenced/biased in any way?” and/or “Is it restricted by limits?” i.e. opening and closing times.

1. Supermarket (Woolworths, Coles, Aldi, IGA) on a Thursday

| Predicted Graph | Why you think this? | Actual Graph | Differences/ similarities? |
| --- | --- | --- | --- |
|  |  |  |  |

1. Department Store (Bunnings, K Mart, Big W, David Jones) on a Sunday

| Predicted Graph | Why you think this? | Actual Graph | Differences/ similarities? |
| --- | --- | --- | --- |
|  |  |  |  |

1. Restaurant/ Eating place from 6am to 7pm on a Weekday

| Predicted Graph | Why you think this? | Actual Graph | Differences/ similarities? |
| --- | --- | --- | --- |
|  |  |  |  |

1. Fuel Station on a Saturday

| Predicted Graph | Why you think this? | Actual Graph | Differences/ similarities? |
| --- | --- | --- | --- |
|  |  |  |  |

For what purposes would this information be helpful?

What is a Normal Distribution Graph?

What are its features?

Consider the following graphs and compare them to a Normal Distribution curve:

| Situation | Graph | Shape of curve | Location of the Mean | Spread of the data | Population size | Normal Distribution Curve? |
| --- | --- | --- | --- | --- | --- | --- |
| Large Department store on a Wednesday | image of a popular times graph from google | * Symmetrical * Bell shaped | * Centrally located * Slightly skewed | * Almost evenly spread * Tappers at the edges | * Large store = large data size | * Very close |
| Large Supermarket on a weekday |  |  |  |  |  |  |
| Hardware store on a Saturday |  |  |  |  |  |  |
| McDonalds on a Saturday |  |  |  |  |  |  |
| Fuel Station on a weekday |  |  |  |  |  |  |
| Certain chemist on a weekday |  |  |  |  |  |  |

Think of 3 situations that would create a Normal Distribution Graph.

Considering your predictions above, can you find a 'Popular Time' graph that is a Normal Distribution Graph?