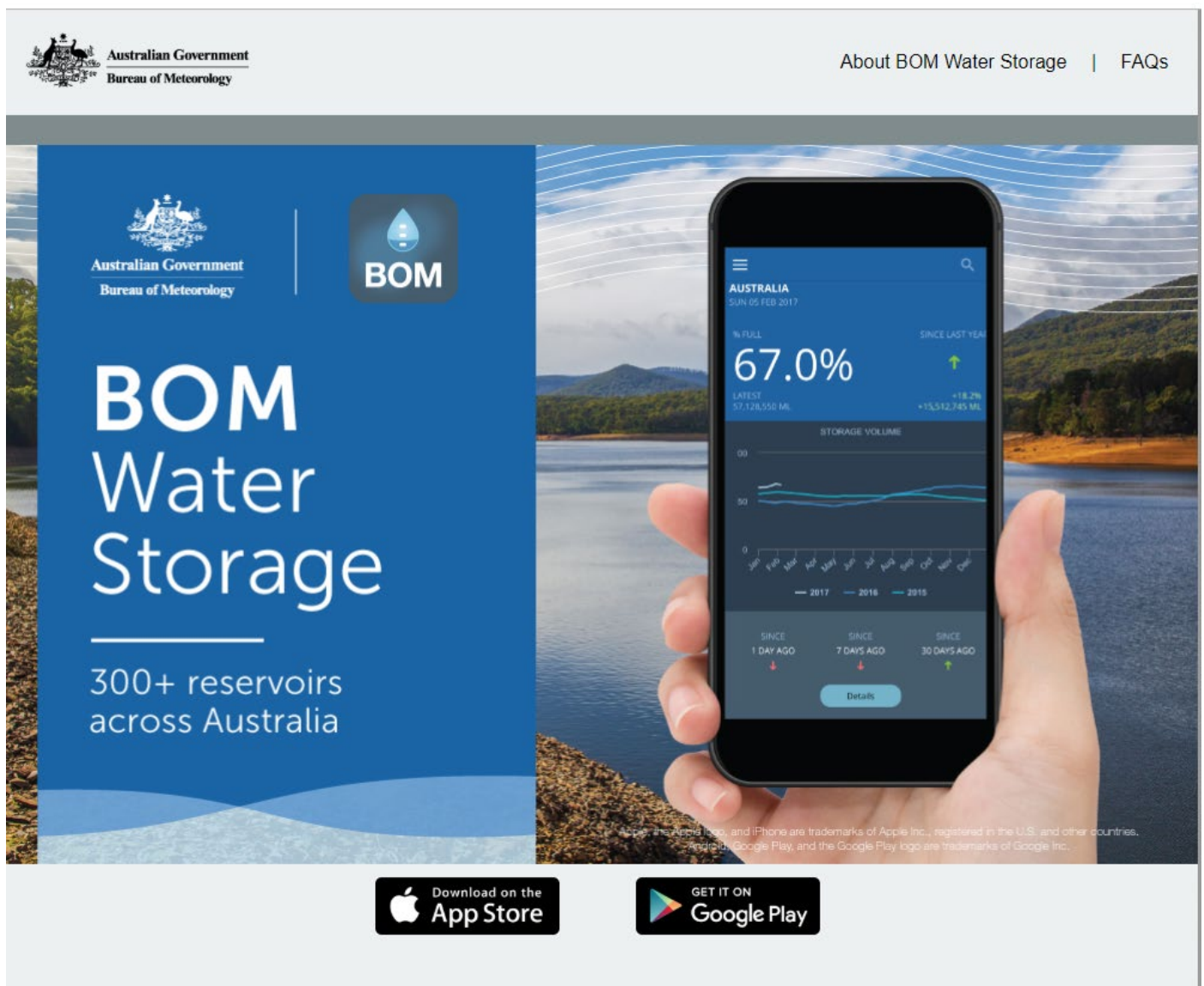


Flooding Project – Mathematics Activity

- Students investigate, interpret and analyse graphs from authentic data
- Students choose appropriate units of measurement for volume and convert from one unit to another
- Students recognise and solve problems involving simple ratios
- Students solve a range of problems involving ratios and rates, with and without the use of digital technologies


Download the **BOM Water Storage** app


Go to <http://www.bom.gov.au/app/>



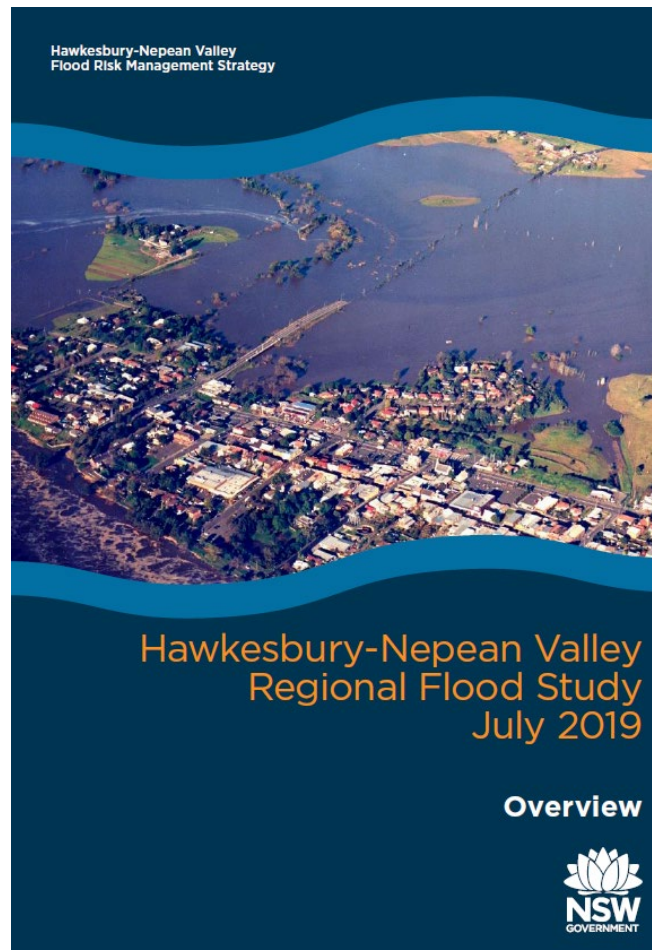
The screenshot displays the BOM Water Storage app interface. On the left, a blue banner features the Australian Government Bureau of Meteorology logo and the text "BOM Water Storage" and "300+ reservoirs across Australia". On the right, a hand holds a smartphone showing the app's main screen. The screen displays "AUSTRALIA" and "SUN 05 FEB 2017". The primary data point is "% FULL" at 67.0%, with a "SINCE LAST YEAR" indicator showing a +18.2% increase. Below this, the "LATEST" storage volume is 57,128,530 ML, with a +15,512,745 ML change. A "STORAGE VOLUME" line graph shows data for 2017, 2016, and 2015. At the bottom, three sections show changes "SINCE 1 DAY AGO", "SINCE 7 DAYS AGO", and "SINCE 30 DAYS AGO", each with a "Details" button. The background of the app interface shows a scenic view of a reservoir.

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Task: Refer to the information in the following document about Warragamba Dam.



Warragamba Dam is located in a narrow gorge on the lower section of the Warragamba River, 3.3 kilometres before it joins the Nepean River near Wallacia. The catchment above Warragamba Dam makes up around 80% of the total catchment to Penrith and 70% to Windsor. Therefore, it has a major influence on flooding in the valley, contributing the majority of flows in the largest floods. If the storage level behind Warragamba Dam is very low, it can help hold back the inflows during floods. However, in large rainfall events, the dam can fill and spill quickly. This is what happened in 1998, when the dam went from 56% storage level to full and spilling in around two weeks. If the storage is close to full, the dam cannot hold these inflows back. History shows that most of the large floods occur during wet periods when the dam is nearly full.

Using the app find the latest data and graphs for Warragamba Dam (the screen shots below were taken on Sept 26th 2019).



Inquiry Questions:

1. How does the water storage this year compare to the storage volume in previous years?
2. The app uses ML – megalitres as the unit of measurement for volume. How many litres are in one ML? How many ML are in one GL?
3. A standard Olympic swimming pool contains 2.5ML. How many swimming pools could be filled using the water in Warragamba Dam today?
4. Sydney Harbour contains approximately 500000ML of water. How many Sydney Harbours could be filled using the water in Warragamba Dam today?
5. Using today's volume as a starting point, how much more water can Warragamba Dam hold before it overflows?
6. **CHALLENGE:** Design a swimming pool that would hold 1ML of water. Show your working.