Visiting a Swimming Pool

Activity 2

View the 'Visiting a Swimming Pool' VR tour at https://lsv.com.au/vr/

Key Learning

The standard dimensions of an Olympic swimming pool are 50m x 25m x 2m. During this lesson, students will revise the concepts of area, perimeter and capacity. They will then apply this knowledge to design different shaped pools with the same capacity.

Resources

- Smartboard
- Appendix A: *Grid paper*

Engage

- Ask students if they know the dimensions of an Olympic sized swimming pool (50m x 25m).
- Ask them to calculate the surface area and perimeter in their workbooks. Allow them to use whatever strategy they choose. Revise the formulas for calculating area (length x width) and perimeter (2 x length + 2 x width) if necessary.

  Answer:
  - Perimeter = 150m
  - Area = 1250m^2

Curriculum

Mathematics – Measurement and Geometry
Using units of measurements
Level 5

- Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)
- Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196)

Level 6

- Convert between common metric units of length, mass and capacity (VCMMG223)
- Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)
- Connect volume and capacity and their units of measurement (VCMMG225)

Explore

- Give students a copy of Appendix A: *Grid paper* and explain that one grid square represents $1m^2$.
- Ask students to design another pool with the same area as an Olympic swimming pool. Students may choose to use compound shapes or circles or triangles if they already know the formulas for calculating these areas.

Explain

- Watch video ['Measuring volume as area times length'](#) to revise calculating the volume of a rectangular prism. Model using this formula to calculate the volume of an Olympic sized swimming pool.

  Answer:

- Volume

  = Length x Width x Depth

  = 50 x 25 x 2

  = $2500m^3$

Elaborate

- Ask students to work in pairs to design a pool with the same volume as an Olympic pool. For a greater challenge they might like to create a compound shape by putting two different rectangular prisms together.

Evaluate

- Ask pairs to swap their designs with another pair and check each other's calculations. Choose a few pairs with interesting designs to share with the whole group.

References

Khan Academy. *Volume and surface area*, https://www.khanacademy.org/math/basic-geo/basic-geo-volume-sa [viewed 30 March 2021]

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