



EPPro8 Challenge

Engineer Problem Solve Innovate

Flood the Room

Jumping. Diving. Swimming. What could be more fun than a day in the swimming pool?

But during winter it can get a bit cold in the school pool.

What if we were to turn the classroom or school hall into an indoor swimming pool? But how long would it take to fill the room with water?



Measuring Device

Criteria	A device has at least one wheel and can be pushed along the ground. It has a handle at a comfortable height.
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Clicker

Criteria	Turning the wheel causes a chain of gears to rotate. A rod is connected to the top gear. Every time the wheel turns around an aluminium rod flicks a piece of plastic, making a clicking noise.
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Calibrate the Measuring Device

Criteria	Measure the distance travelled if the wheel goes around exactly once. Write the distance (in metres) down.
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Room Size - Guess	
Criteria	Without leaving your workstation, guess how wide and how long your room is.

Room Size	
Criteria	Use your device to measure how long and how wide the room is. Write down the width and length of the room (in metres).
Hint	The distance in metres is: The number of complete rotations x the distance travelled for each rotation.

Fill the Container	
Criteria	Time how long it takes to fill the container with water.
Criteria	Make a 1m square. How long would it take to fill 1m ² to the same depth as the container?
Hint	Make a grid to work out how many containers would fit inside a square metre.

Flood the Room	
Criteria	Calculate the area of the room (how many square metres). Calculate long it would take to fill the entire room to the same depth as the container.
Hint	The area of the room is the Width x Length (in metres). Multiply this by how long it takes to fill one square metre.

After you have attempted this challenge watch the tutorial to see our solution at www.EPro8Challenge.co.nz/Tutorial and enter the Challenge Code **FLDR**.