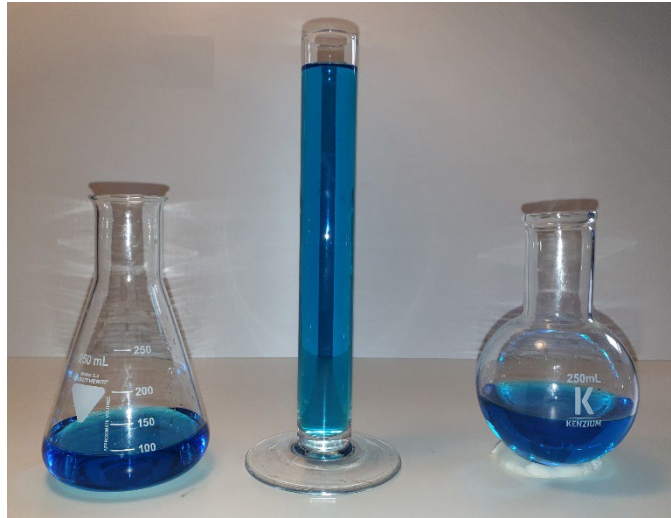


Filling vessels

Different vessels are filled with water. In which vessel is the most water?



Today you will investigate how the filling quantity and the filling level are related, why the water is at different levels in different vessels, and how the relationship between filling quantity and filling level is represented in the graph!

This material is provided by the [FunThink Team](#), responsible institution: Ludwigsburg University of Education



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Research assignment 1: How does the filling level in a vessel change when it is filled evenly with water?

Needed Material: a vessel of your choice, measuring cup, measuring rod, bottle with water

This is how you proceed:

- Place the measuring rod in the vessel as seen in the picture.
- Now pour 20 ml of water (filling quantity) into the vessel.
- Read as accurately as possible the height of the water level (filling level).
- Repeat the procedure until the vessel is full.



Sketch your vessel:

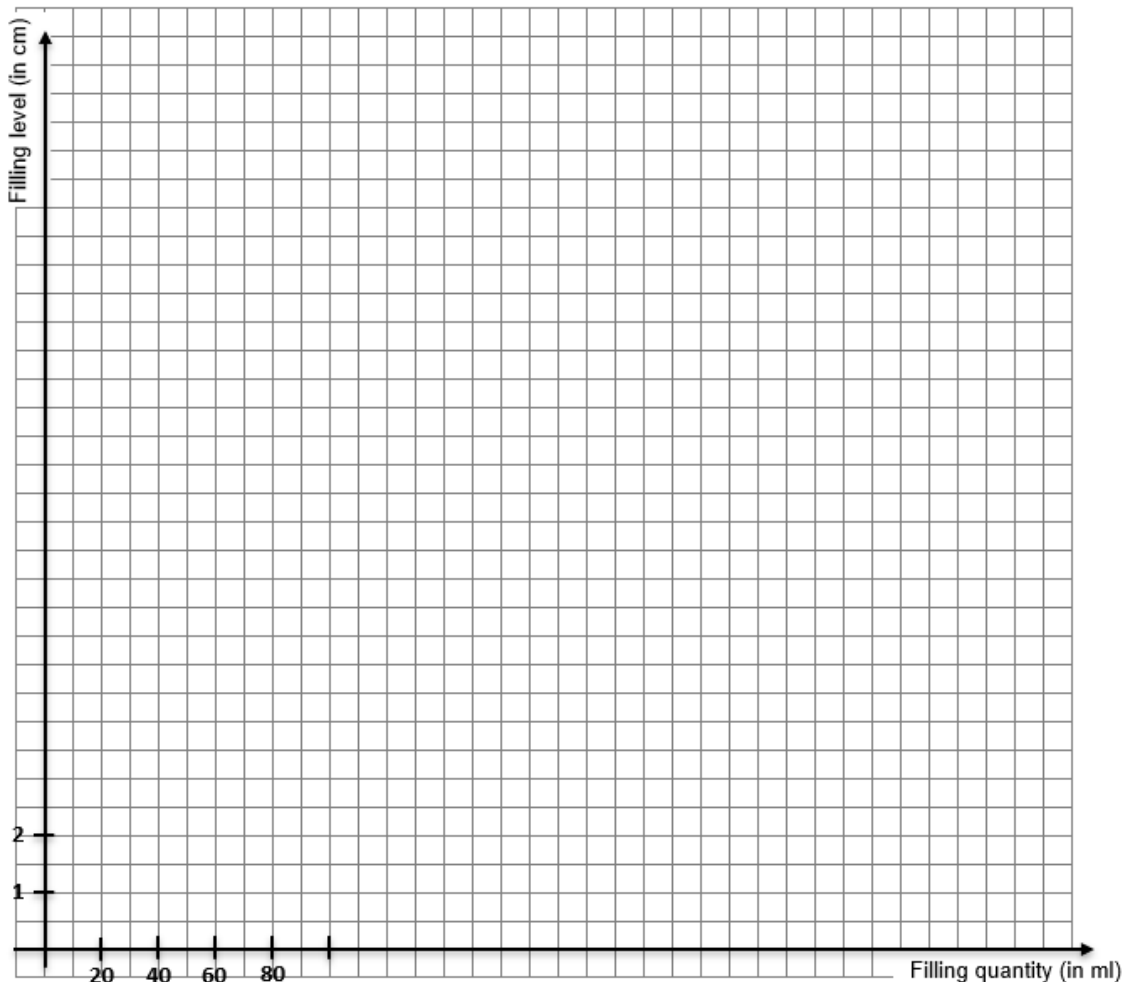
1. Table of values: Enter the filling level in the table.

Repeat the procedure until the vessel is full. (You can shorten or add to the table).

Filling quantity (ml)	0	20	40	60	80	100	120	140	160	180	200							
Filling level (cm)	0																	

2. Graph: Enter the pairs of values from the table as points into the coordinate system.

Connect the points with a line. This creates the filling graph of the vessel. (Don't forget to complete the scaling!)



3. Describe how the water rises in the vessel and how you see this in the graph:

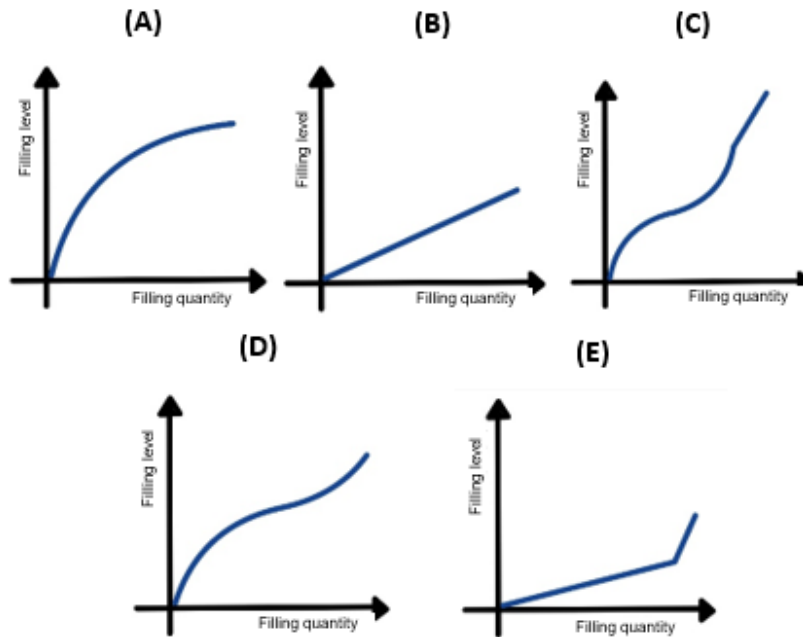
4. Describe when the water rises quickly and when it rises slowly. How can you tell from the vessel and where can you see it in the graph?

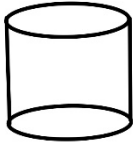
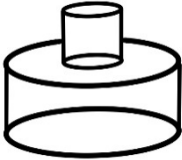
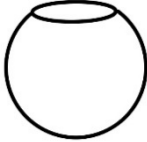
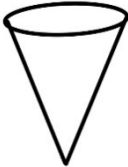
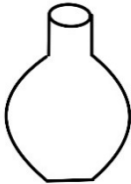
5. Consider what the graph would look like if you filled 40ml of water into the vessel each time instead of 20ml. Describe:

Remember to clean up after the experiment.

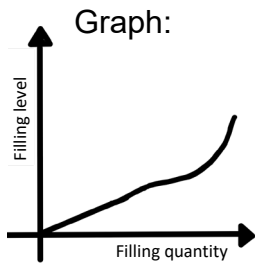
Research assignment 4: Find the correct graph

a) Match each vessel with the corresponding graph. Explain your decision:



	Vessel	Graph	Explanation
(1)			
(2)			
(3)			
(4)			
(5)			

b) Draw a vessel to match the graph.



Vessel:

A large empty rectangular box intended for drawing a vessel that corresponds to the graph shown to the left.

c) Your own vessel: Think about a shape for a new vessel. Sketch it. Draw the corresponding graph in the coordinate system.

Vessel:

A large empty rectangular box intended for drawing a vessel of the student's own design.

