

# Porosity & Permeability - Student Activity



### Materials required per person or group:

- 1 Filter stand or balance the funnels inside the beakers
- 2 filter funnels (or one used twice)
- 3 beakers
- Small polystyrene balls or marbles, (dry rice or pasta can be used if the funnels are lined with filter paper first
- Bubble wrap cut large enough to line filter funnels (HINT Use squares one and a half times the diameter of the funnels)
- Water (with food colouring if you prefer)
- A hand lens or magnifying glass
- 1. Mix water with food colouring in one beaker
- 2. Set the filter funnels on the stand and place the empty beakers below.
- 3. Line one filter funnel with bubble wrap and fill the other with polystyrene balls
- 4. Pour some water slowly into the filter funnels.
- 5. Clean the equipment and store for further use

Describe what happens and give an explanation.

Materials which have holes or voids are called porous. Which filtering material is porous?

Materials where the holes or voids are joined up are called permeable. Which filtering material is permeable?

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Would oil and gas travel through rocks and sediments like water?

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## Porous rocks have spaces between their grains

## Permeable rocks have the spaces between their grains joined up

Which kind of rock would you need to allow oil or gas to migrate through it? \_\_\_\_\_

### Part B

### Materials required per person or group

- Specimens of different rocks (e.g. granite, limestone, basalt, limestone, chalk, dolerite commonly called road metal and slate)
- Pasteur pipette and water
- Hand lens or magnifying glass
- 1. Using the hand lens or magnifying glass closely observe each rock to see if it is porous
- 2. Write observations on the table below
- 3. Using a pipette or straw, drop 2 ml water onto the rock specimens.
- 4. Closely observe water movement using the hand lens to see if the rock is permeable.
- 5. Write up your observations in the table below.

	Porous	Permeable	Would oil or gas move through this?	
Granite				
Chalk				
Limestone				
Dolerite				
Sandstone				
Pumice				
Brick (cooked clay)				