

2.3 CREATE ROCK MODELS

How can you show porosity and permeability in a 2D or 3D model?

MATERIALS

Per small group of students:

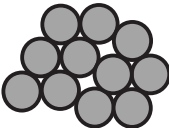

- Materials to create 2D models: coins, rectangles of paper, rectangular puzzle pieces
- Materials to create 3D models: balls, marbles, Legos, oranges, blocks

DIRECTIONS

1. Provide a variety of materials for students to create 2D and 3D models.
2. List types of rocks that have been demonstrated or discussed in class.
3. Instruct students to draw or take photos of models they create (chart below without the “Sample Idea” can be used to collect drawings).
4. Share results.

REFLECTION

1. Which of the rocks might store crude oil and natural gas underground?
Permeable sandstones or cracked rocks make the best rocks for holding crude oil and natural gas.
2. Which of the rocks might trap crude oil and natural gas underground?
Rocks that hold crude oil and natural gas are sealed by impermeable rocks.
3. Which of the rocks is not able to trap or store crude oil and natural gas?
Rocks that are semi-permeable are not very useful for any of these purposes.
4. How could impermeable rocks be made more permeable?

Type of rocks	Amount of permeability	Sample idea
Sedimentary	Permeable	
Igneous	Semi-permeable	
Metamorphic	Impermeable	