

The roll and rock board game

This resource accompanies the infographic **The rock cycle** in *Education in Chemistry* which can be viewed at: <https://rsc.li/3N6xDM7>

You can find more ideas about teaching the rock cycle in the CPD article **How to teach the rock cycle** which can be viewed at: <https://rsc.li/38JlwUc>

Learning objectives

- 1 Identify sedimentary, metamorphic and igneous rocks.
- 2 Link the physical processes that occur in the rock cycle with the formation of different rock types.
- 3 Recognise that the rock cycle has multiple different pathways.

Introduction

The Earth's rocks do not stay the same forever. Processes such as weathering, erosion and large earth movements cause them to continually change between different forms. These changes are shown in the rock cycle. Many learners mistakenly believe that there is only one set path through the rock cycle.

To combat this misconception, this board game helps learners see there is a range of processes that cause rocks to be interchanged between the different forms. Learners roll a dice to determine the conditions and move around the board. The winner is the first to collect 'samples' (cards) of a sedimentary, metamorphic and igneous rock. A separate [student sheet](#) includes instructions for your learners.

Instructions

Number of players: 3

To play the game students will need:

- A copy of the game board (ideally printed on A3 and laminated)
- Metamorphic, sedimentary and igneous rock sample cards placed in the collection zones
- A rock sample collection record card for each player – available to download along with the sample cards and game board from the EiC article: <https://rsc.li/3N6xDM7>
- A counter for each player
- A dice

Rules

The aim of the game is to move around the rock cycle and collect samples of rock. The winner is the first person to collect a sample of each of the three rock types: sedimentary, igneous and metamorphic.

1. Each player chooses a starting position in one of the sedimentary, metamorphic or igneous rock zones.
2. Players take it in turns to roll the dice. Each number indicates a different process as indicated below:

1 = compaction and cementation	4 = melting
2 = weathering and erosion	5 = cooling
3 = heat and pressure	6 = roll again
3. Players move along the arrow of the physical process that the number on the dice relates to. If there is no arrow relating to the physical process that starts from their position on the board, players remain in the same position and await their next turn. Players must move if a move is possible.
4. When a player lands on a rock zone, they collect a card from the appropriate collection pile and record the name of the rock collected on their rock sample collection record card.
5. The winner is the first person to collect a sample of each of the three rock types and complete their record.

Extension activity

Learners can research the chemical composition of the rocks they have collected and see if they are related by the physical processes identified in the game.