

Statement of participation

Guest user

has completed the free course including any mandatory tests for:

Minerals and the crystalline state

This 10-hour free course introduced the study of minerals and crystal structures, the main component of the geological world.

Issue date: 14 March 2022



www.open.edu/openlearn

This statement does not imply the award of credit points nor the conferment of a University Qualification.
This statement confirms that this free course and all mandatory tests were passed by the learner.

Please go to the course on OpenLearn for full details:

<https://www.open.edu/openlearn/science-maths-technology/minerals-and-the-crystalline-state/content-section-0>

COURSE CODE: S209_1

Minerals and the crystalline state

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Course summary

Rocks are made of minerals and, as minerals are natural crystals, the geological world is mostly a crystalline world. This free course, Minerals and the crystalline state, introduces the study of minerals and crystal structures, using online text and interactive activities, including questions and answers, video clips, slidecasts and a Digital Kit.

Learning outcomes

By completing this course, the learner should be able to:

- give, with an appropriate example, the meaning of the terms phase, phase boundary and phase transformation, and interpret stability fields in terms of pressures and/or temperatures using a phase diagram
- describe and recognise, giving examples, various physical properties of minerals, including lustre, cleavage, hardness and density
- describe, giving mineral examples, the main differences between metallic, ionic and covalent structures and their type of bonding
- explain the significance of various types of defects in crystals
- explain the meaning of the terms lattice, unit cell, reflections and rotational symmetry, and how these relate to crystal systems.

Completed study

The learner has completed the following:

Section 1

Introducing crystals

Section 2

States of matter

Section 3

Physical properties of minerals in hand specimen

Section 4

The atomic structure of crystals

Section 5

Crystal defects and twinning

Section 6

Crystal symmetry and shape