

Part 1.

V.1: Your English teacher has asked you to write a report on whether crystallography can be considered as a completely independent science. You should include the views of scientists, engineers and ordinary people, comment on the subject, methods, laws and dissatisfaction and make a recommendation.

Write your report in 140-190 words in an appropriate style.

V.2: You work for the International Student Center. The principal of the Center is interested in the experiences of students who have studied mechanical properties of materials using optical microscope and X-ray diffraction techniques. He has asked you to write a report on the advantages and disadvantages of such work. In particular, he wants to know whether the students should recommend these methods of investigation to novice researchers.

Write your report in 140-190 words in an appropriate style.

Part 2. Quiz

- Sketch an FCC lattice showing (111), [010] and $\langle 110 \rangle$. (Label these; include 2 examples in the family);
- Explain how (111) in an FCC lattice is related to (0001) in a hexagonal closest packed lattice ((001) in the tetragonal depiction);
- NaCl displays an FCC structure. Sketch the NaCl structure showing a lattice site by drawing a block around the repeat unit.
- Explain how {110} and {100} can be planes of a zone. (You will need to explain what "planes of a zone" are and you will need to calculate the zone axis. Consider specifically (110) and (100); and (110) and (001). It may be helpful to sketch the unit cell.)