

Thermal metamorphism

Thermal gradient

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To get students to discuss how size of intrusion might affect the thermal gradient show them a piece of toast toasted on one side only on a toasting fork. Students are asked why one needs a toasting fork at a camp fire and why a small fire and not a large bonfire is needed to make toast.

Andalusite slate

A P F 30 min

This activity is to show that there is no alignment to the andalusite crystals in slate that has been thermally metamorphosed. Students measure the orientation of andalusite crystals on a slab of andalusite slate and plot them on a rose diagram and then comment.

Metamorphic aureole

E P F 60 min

To determine how the temperature varies with time and distance from the intrusion and to see the effect of the size of the intrusion.

Boiling water is poured into a tin which is in the centre of a larger sand filled tin. Thermometers are placed in the sand at various distances from the central tin. Students record the temperatures every 2 min. Inner tins of different sizes can be used and the sand can be damp or dry.

