Department of
Primary Industries and
Regional Development

GOVERNMENT OF
WESTERN AUSTRALIA

Sifting Sands

Unlike other parts of the world, Australia is lucky to have lovely white sandy beaches. Sand can generally be described as loose particles of carbonate and non-carbonate materials.

Carbonate sands are created from the remains of animals (e.g. shells) and the erosion of limestone formations.

Non-carbonate sands are generally created from inland ancient rocks that have been eroded. Two common non-carbonate sands are quartz and feldspar. Non-carbonate sands also include mineral sands such as titanium, zirconium and rare earths.

Ask your participants to pick up a handful of beach sand – what do they think the small grains are made from? Can your participants tell the difference between the pieces of shell and the quartz?

Coloured grains (usually purples, pinks, blues and whites) are generally pieces of broken shells, while the clear grains are quartz and feldspar.

Another way of testing sand composition is by pouring vinegar (mild acid) over the grains. If little bubbles of gas appear, your sand grains contain shell fragments. The gas bubbles are created as the vinegar dissolves the calcium carbonate, releasing carbon dioxide.