opening extract from

Rocks and Minerals

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published by

Kingfisher Books Ltd

Sandstone

Sedimentary and Stylish

- A clastic rock, formed from sandy bits of other rocks
- Its aquifers hold life-giving water beneath Earth's surface
- It's Earth's second-most common sedimentary rock

Surf's up! Made of the sand that gets into your picnic food, I'm a rock dressed in warm golds and tans. I am one of nature's finest features, running the length of the Grand Canyon! A rock with true grit, I am made up of particles of Quartz with a cement of silica or calcium carbonate in between my grains. I get laid down where sand collects, on river beds and beaches. The ripples within my bedding planes are clues to my origin. Long, angular ripples form in wind-blown sand dunes, and tidal deposits give shorter, more even waves.

Warm-coloured and easy to shape, I am a top-grade stone for building and paving. I'm also a dab hand at sharpening steel blades. On top of that, I can store a huge amount of water in the spaces between my grains.

- Minerals: Quartz, Feldspar
- Grain size: very fine to coarse
- Hardness: 6.5–7
- Colour: white, grey, yellow, red, brown
- Origin: deserts, rivers, seas
- Lookalikes: siltstone, oolite

Quartz

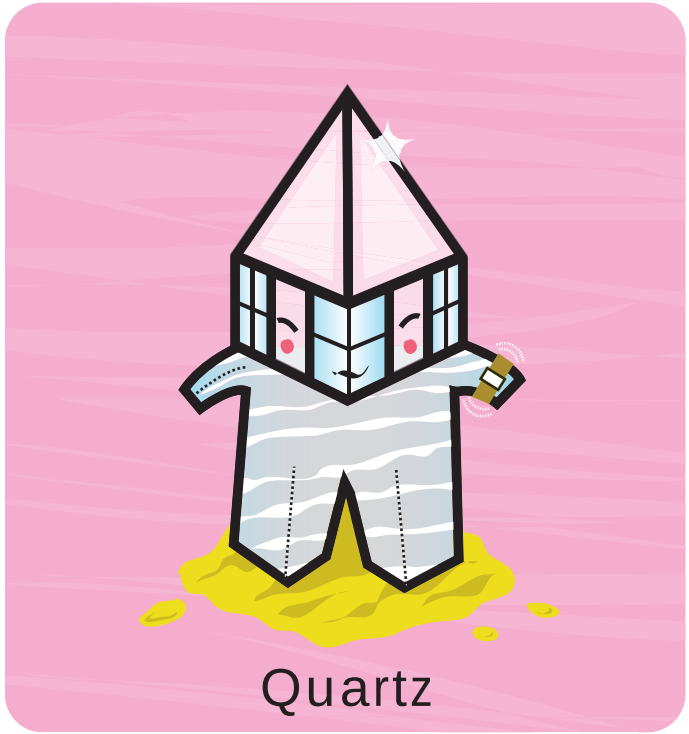
Mineral Gang

- An itchy, scratchy character and a very abundant mineral
- This soothsaying mineral is used to make crystal balls
- Amethyst was once believed to stop people getting drunk

I'm an abrasive character – don't rub me up the wrong way. Because my grains form sand, people see me as a beach bum with a sunny disposition. The secret of my success is my durability. You just can't get rid of me. I'm a big part of so many rocks – especially Granite – and even when my sandy grains are worn down, they eventually get incorporated into new rocks, such as Sandstone. When rocks are metamorphosed, I often migrate into milky white bands of pure Quartz.

Although I'm no longer used to make sandpaper, I am the major source for making glass. And I'm used to measure time with my amazing powers of piezoelectricity. When under pressure, I vibrate with an electric rhythm, which is used to beat time in electronic clocks.

- Made of: silicon dioxide
- Chemical formula: SiO_2
- Hardness: 7
- Colour: many coloured varieties
- Crystal system: trigonal
- Lookalike: adularia (form of Feldspar)



Sulphur

The Purists

- A sickly element from volcanic zones that can cause acid rain
- 85 per cent of the Sulphur mined is used to make sulphuric acid
- Jupiter's moon, Io, has volcanoes that erupt sulphur gas

Hellfire and brimstone! I spew out of foul jets from volcanoes and hot springs, and I'm a right little stinker. My pure form is odourless, but when I combine with hydrogen in hydrogen sulphide, I reek of rotten eggs. I make your nose water because on contact with your damp nasal passages, I form stinging sulphuric acid.

I'm found in Galena, Pyrite and in many Meteorites, but on my lonesome you can't miss me – I like bright lemon yellows. Picking up chunks of me from a volcano crater in clouds of lethal gas is the most dangerous way of mining me. These days I'm mostly mined by pumping hot water underground. I'm used in gunpowder, matches, pesticide and fungicide, but mostly I'm used to make sulphuric acid – the most useful product in the chemical industry.

- Made of: Sulphur
- Symbol: S
- Hardness: 1.5–2.5
- Colour: vivid yellow
- Crystal system: orthorhombic
- Lookalike: autunite