

INSIDE A BONE

STRONG AND SPONGY

Bones aren't just solid shapes. They are alive, like the rest of your body. Hard on the outside, they have a softer centre, and **blood vessels** run right through them.

Bones are made of several layers. They go from the hard layers of **compact bone** to lighter, bubble-like **spongy bone** on the inside.

Periosteum

Bone marrow

Nerve

Blood vessels

Spongy bone

Compact bone

CELL FACTORY

Your larger bones contain a substance called **bone marrow**. It has a very important job - making new blood cells. The cells are released from the marrow into blood vessels (tubes that carry blood), and travel out into the rest of the body. Your bones make 3 million new blood cells every second!

Bone marrow is the soft, fatty substance at the centre of large bones.

TUBES IN AND OUT

Bones have little holes and channels in them to hold blood vessels. Blood vessels carry food chemicals and **minerals** into your bones, so that they can grow and stay healthy. Bones also contain **nerves** (pathways carrying signals to and from the brain). Nerves tell your brain if your bones are damaged or broken.

BIRD BONES

Flying birds have hollow bones that are mostly empty inside. This makes their skeletons extra light, helping them to get off the ground. Our heavier bones are one of the reasons why we humans can't fly, however hard we flap!

Spongy bone is full of bubble-like holes. But it's hard, not squishy like a real sponge. The spaces in spongy bone make your skeleton weigh less.