



How Muscles Work and Why We Need Them

KS2 SCIENCE

HUMAN BIOLOGY

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What Are Muscles?

Muscles are special tissues in your body made of thousands of tiny fibres that can tighten and loosen. You have over **600 muscles** in your body, and they work together to help you move, stay upright, and keep your body working properly.

Muscles are attached to your bones with strong cords called **tendons**. When muscles contract (tighten), they pull on these tendons, which pull on your bones, and that's what makes you move.

Think of it like a puppet on strings—when you pull the strings down, the puppet's arms move up. Your muscles are like the strings, and your bones are like the puppet.

How Do Muscles Work?

Your brain sends electrical signals down your **nerves** to tell muscles when to contract. When the signal arrives, the muscle fibres slide over each other, making the muscle shorter and tighter. This contraction uses energy from a special molecule called **ATP**, which your body makes from the food you eat.

Muscles always work in pairs. When one muscle contracts to bend your arm, another muscle on the opposite side relaxes to let it happen. Then when you want to straighten your arm, the relaxed muscle contracts and the first one relaxes.

Think of it like a seesaw—when one end goes down, the other goes up. Your biceps and triceps work like that seesaw to move your arm.

Why Do We Need Muscles?

Muscles do much more than help you move your arms and legs. Your **heart** is actually a muscle that pumps blood around your body thousands of times every day. The muscles around your **lungs** help you breathe. Even your **digestive system** uses muscles to push food through your stomach and intestines.

Muscles also help keep your body warm by producing heat when they contract. When you shiver on a cold day, that's your muscles contracting rapidly to warm you up.

To keep your muscles strong and healthy, you need to use them regularly through exercise, eat protein-rich foods, and get enough sleep. Your muscles are constantly breaking down and rebuilding, so good nutrition is essential!