What is the Milky Way?

KS2 KS3 Ages 7-14 ⏰ 3 min read

On a very dark, clear night — far from city lights — you can see a faint, misty band stretching across the sky. Ancient people called it many things; the Greeks called it the *Galaxias Kyklos*, the Milky Circle. Today we know it as the **Milky Way**, and it's not a cloud or a smear of dust. It's the galaxy we live in, seen edge-on from the inside.

What a galaxy actually is

A **galaxy** is an enormous collection of stars, gas, dust, and dark matter, all held together by gravity and slowly rotating around a central point. The Milky Way contains somewhere between 100 and 400 billion stars. Our sun is just one of them — a perfectly ordinary, middle-aged yellow star sitting in one of the galaxy's outer spiral arms.

Imagine standing inside a vast forest. You can't see the whole forest — all you can see are trees in every direction. When you look towards the denser part of the forest, you see more trees crowded together. That's why the Milky Way appears as a bright band: we're looking towards the dense centre of our galaxy, with billions of stars packed tightly behind each other. When we look away from the band, we're looking outward toward the galaxy's edges — fewer stars, more empty space.

The shape we can't see

We know the Milky Way is a **barred spiral galaxy** — a large disc with elegant spiral arms curving outward from a central bar-shaped cluster of stars. We know this from studying other galaxies and from mapping the positions of stars around us using telescopes. But we'll never photograph our own galaxy from the outside, because we're deep inside it and no spacecraft will be able to escape it in any human timescale.

How big is it?

The Milky Way is about 100,000 light-years across. Light travels at 300,000 kilometres per second — the fastest anything can move — and it would still take 100,000 years to cross from one side to the other. Our sun is about 26,000 light-years

from the galactic centre. It takes the sun (and us with it) about 225 million years to complete one orbit of the galaxy. That's called a **cosmic year**.

What's in the middle?

At the very centre of the Milky Way sits a **supermassive black hole** called Sagittarius A*, with a mass about 4 million times that of our sun. In 2022, the Event Horizon Telescope captured the first actual image of it. Don't worry — it's 26,000 light-years away and poses no danger to us whatsoever.