

TOPIC PACKS · GRADES 3–6

Mountains & Volcanoes

A cross-curricular themed week

Suggested timetable

Day	Subject	Activity
Monday	Geography	Tectonic plates — how mountains form
Tuesday	Science	Volcanoes — types, layers, eruptions
Wednesday	Maths	Comparing heights — Earth's tallest mountains
Thursday	English	Mountain explorer biography research
Friday	Science	Build and erupt a model volcano

Day 1 — How mountains form

<p>Fold mountains</p> <p>Two tectonic plates push together. The land between buckles up like a rug being pushed against a wall. The Himalayas, Alps, and Andes were all formed this way.</p>	<p>Block mountains</p> <p>Cracks in the Earth's crust let some sections rise while others sink. The Sierra Nevada in California is a block mountain range.</p>
<p>Volcanic mountains</p> <p>Lava and ash from eruptions build up over thousands of years to form a mountain shape. Mount Fuji in Japan is a perfect example.</p>	<p>Dome mountains</p> <p>Hot rock pushes up from below but doesn't break through. The land bulges into a dome. The Black Hills in South Dakota are dome mountains.</p>



Day 2 — Three types of volcano

Type	Shape	Eruption	Example
Shield	Wide and flat	Gentle, runny lava	Mauna Loa (Hawaii)
Stratovolcano	Tall and pointed	Explosive, with ash	Mount Fuji, Mount St Helens
Cinder cone	Small and steep	Short, ash-and-cinder	Parícutin (Mexico)

Day 2 anatomy of a volcano

Draw a cross-section diagram on the board. Label these parts: • **MAGMA CHAMBER** (deep down — molten rock waiting) • **MAIN VENT** (the pipe magma rises through) • **CRATER** (the opening at the top) • **LAVA FLOW** (magma once it reaches the surface) • **ASH CLOUD** (volcanic dust thrown up high) • **SECONDARY VENT** (smaller side openings) Children copy and label their own diagram.

Day 3 — Earth's tallest mountains

Mountain	Height (m)	Country / Range	Famous because...
Everest	8,849	Nepal/China — Himalayas	Highest above sea level
K2	8,611	Pakistan/China — Karakoram	Hardest of the 8000m peaks
Kangchenjunga	8,586	India/Nepal	Third highest
Mont Blanc	4,809	France/Italy — Alps	Highest in Western Europe
Kilimanjaro	5,895	Tanzania	Highest in Africa, free-standing
Mauna Kea	10,210 (from sea floor)	Hawaii, USA	Tallest from base — most underwater

Day 3 maths (45 min)

Children calculate height differences: • How much taller is Everest than Mont Blanc? (4,040m) • If you climbed Everest at 1m per minute, how long would it take? (147 hours, or just over 6 days) • Mauna Kea from its base on the ocean floor is over 10,000m — taller than Everest! Why don't we count it as the tallest? (Because we measure mountains from sea level.) **EXTENSION:** Plot



the heights on a bar chart.

Day 4 — Mountain explorer research (60 min)

Children pick one famous mountain explorer to research and present: • EDMUND HILLARY & TENZING NORGAY — first to summit Everest (1953) • REINHOLD MESSNER — first to climb all 14 peaks above 8000m • ALISON HARGREAVES — first woman to climb Everest solo without oxygen • JUNKO Tabei — first woman on Everest (1975) • NIMS PURJA — climbed all 14 8000m peaks in 6 months and 6 days PRESENTATION: 1 page including: name, country, what they're famous for, what made them special, one quote of theirs, and what we can learn from their story.

Day 5 — Build and erupt a volcano (60 min)

MATERIALS PER GROUP: • A small empty bottle • A tray to catch mess • Brown clay or play dough to mould a volcano shape • Vinegar (white) • Bicarbonate of soda • Red/yellow food colouring • Optional: washing-up liquid for foam STEPS: 1. Mould volcano shape around the bottle 2. Add 2 spoons of bicarb to the bottle 3. Add red food colouring and a squirt of washing-up liquid 4. STAND BACK 5. Pour in vinegar and watch it erupt! DISCUSS: This is a chemical reaction (acid + base = gas), not a real volcanic process. Real volcanoes erupt because of pressure from below. But it does look pretty similar.

