Natural disasters

SHAKY FACTS

- An earthquake happens somewhere in the world every 30 seconds.
- Aftershocks can follow an earthquake for days, weeks, even months.
- Most earthquakes last a minute or less.
- Many earthquakes happen on the ocean floor.
- The deadliest known quake in history shook central China in 1556, claiming about 830,000 lives.
- The largest recorded earthquake was a 9.5 quake in Chile in 1960.
- The 1989 Newcastle earthquake (magnitude 5.6) has been Australia's most damaging.

DISASTERS usually occur because of an upset in the Earth's natural geographical or weather patterns but human factors can also have an effect. Both can cause a change to our normal living conditions.

Our shaking Earth

EARTHQUAKES can occur anywhere on the planet with little or no warning.

The Earth's crust has cracks in it making pieces called tectonic plates that fit together like a puzzle. The edges where the plates meet are called plate boundaries where fault lines are found.

When the magma below moves, it can cause these plates to shift in different directions. When the plates become locked together, energy builds up. This stored energy is eventually released in the form of an earthquake.

An earthquake emits its power as three waves of energy. Primary waves are felt as a sudden jolt. Secondary waves arrive a few seconds later in sustained side-to side shaking. Then surface waves radiate outwards from the epicentre – the point on the surface directly above the hypocentre. After an earthquake there are smaller quakes called aftershocks. These happen because the plates are still settling back into place.

Measuring an earthquake

They cannot be predicted but scientists who study the Earth (geologists and seismologists) can identify areas that are most at risk.

The vibrations produced by earthquakes are detected, recorded and measured by instruments called seismographs.

Scientists use the data to determine the time, the epicentre, the depth and magnitude (energy released) of the earthquake.

- Magnitude describes an earthquake's size. The Richter Scale is a range of numbers used to compare earthquakes. Each step on the scale represents a tenfold increase in wave motion. For example an earthquake of magnitude 6.0 is 10 times larger than an earthquake of magnitude 5.0.
- Intensity is the degree of damage or the observable effects caused by an earthquake at a particular location according to geology, population density, cultural features and distance from the epicentre.

IN THE NEWS

AMY Schiller watched buildings collapse around her as Nepal's most devastating natural disaster in nearly 80 years hit in April last year.

The 22-year-old was at a shop in the north-west of the capital Kathmandu when the 7.8 magnitude earthquake hit, killing more than 5000 people.

It was supposed to be her last day in Kathmandu, but that all changed as the city crumbled before her eyes.

"I got dragged across the road by some guys... because I fell down," she said.

"The building across from us completely came down. They were pulling bodies out for a while. It was terrifying."

She said that during the earthquake it was difficult to process what was happening.

BE PREPARED

What to do during an earthquake

Drop, cover and hold on

- Drop to the ground (before the earthquake drops you)
- Find cover to protect yourself from falling debris.
- Stay away from glass, windows, outside doors and walls, and anything that could fall.
- Stay where you are until the shaking stops.

Earthquake fault model

HERE'S a simple way to show how pressure created causes an earthquake.

Equipment

- Three different colours of plasticine
- Plastic knife

TRY THIS

Step 1: Take the three pieces of plasticine and shape each piece into a flat rectangle.

Step 2: Stack them on top of one another and press them together. The three pieces of plasticine represent layers of the Earth's crust.

Step 3: Use the knife to cut all the way through the layers so you have two halves. Put the two sections together, but don't match them up exactly as they were before you cut them apart. The cut is like a fault in the Earth's crust.

Step 4: Push in on the outside edges of both sections of the model. The plasticine along the "fault" should buckle and slide. Earthquake!