EXTREME!

Teaching Notes

Ocean in Motion

Ocean in Motion links with the Physical Processes strand. It looks at forces and energy. This book also makes good cross-curricular links to geography topics such as coastal erosion. (Sc4, 2b, 2c,2d, 2e).

Key Science Concepts

- **Waves are pulses of energy that travel.**
- **Waves are formed by the displacement of water, by wind, or movement.**
- **Waves can cause damage to coastlines and mass destruction.**
- **Waves can provide sporting opportunities (cross-curricular).**

Background Knowledge

Waves are produced when water is displaced either by wind or land movement (earthquakes). This happens most often out to sea: strong winds blow onto the surface of the ocean, moving the water and thus causing motion. This motion then moves in the form of a wave.

It may look as if a wave is moving toward you, but in fact a wave is motion (or energy) moving through a body of water. Most of the water actually stays where it is. Small waves run into each other and merge, combining their energy and picking up speed, causing larger, faster waves. It is only when waves hit the beach that they move water forward. The top of the wave spills over as it breaks.

Waves can hold immense power and can have devastating effects. A tsunami is an example of this. On a daily basis, the force of waves continually erodes our coastline.

Before the Reading

Have students skim the text and use the glossary to complete the vocabulary matching worksheet.

During the Reading

Have students use the *Ocean in Motion* Main Idea and Supporting Details page to record notes as they read, then summarize the key concepts.

After the Reading

Students will use the cause and effect diagram page to illustrate the cycle of a wipeout.

Challenge Activity

Explore wave motion by making a wave machine. You can make this by stretching out some sticky tape between two objects (chairs or desks) and attaching equally spaced objects on the tape. Have the students cause movement and watch the wave energy move along the tape, moving the balanced objects. This helps show that it is the energy that is moving not the objects (or water).

Make an information poster about surfing. Include what makes a good wave, how to ride the wave, best places to surf, how waves are formed and so on.