YEAR 7 · PRACTICE PAPER 2

Reading Magazine

IN THIS MAGAZINE

- Low tide — page 2
- Lightning — page 3
- Our streets need more trees — page 4

HOW TO USE THIS MAGAZINE

Use this magazine with the question paper “Reading Year 7 — Practice Paper 2”. Each part of the question paper tells you which text to read and the page it is on. Read the text first, then answer its questions. You may look back at the magazine as often as you like.

PrepNest

Low tide

The rock shelf at Hollow Point only appears for a few hours each day, when the sea pulls back and uncovers a wide, flat world of pools and weed. Luca had been begging to explore it since the start of the holidays, and on the last Saturday his sister Gemma finally said yes.

“Two hours,” she said, checking the tide chart on her phone. “Low tide is at ten. We turn back at eleven, no arguments.”

The shelf was better than Luca had imagined. Every pool was a tiny, glittering room. There were purple sea urchins wedged in cracks, crabs that sidled away from his shadow and, in one deep pool, a blue-ringed octopus the size of a golf ball. Gemma grabbed his wrist before he could lean closer. “Look with your eyes,” she said. “That one could kill you.”

They wandered further than they meant to, around a jutting headland and onto a second, even wider shelf. Luca lost track of time. He only looked up when a wave slapped against the rocks behind them and sent a sheet of white water sliding across the path they had walked in on.

Gemma checked her phone. It was 11.40.

For a second neither of them spoke. The way back around the headland was already under knee-deep water, and each new wave pushed further in.

“We could run for it,” Luca said. His voice came out high and thin.

Gemma shook her head. She was looking up, not back. Behind the shelf, the cliff rose in a series of broken ledges, like a giant’s staircase. “Waves are stronger than they look,” she said. “We go up, not through.”

They climbed slowly, testing every hold. Luca’s hands were shaking so much that he scraped both knees. Halfway up they found a wide, dry ledge well above the reach of the spray, and Gemma sat down with her back against the rock as if they were waiting for a bus.

“Now we call someone,” she said, and dialled triple zero.

It was nearly an hour before the rescue boat came around the headland, its orange hull bright against the grey water. By the time they were wrapped in foil blankets on the beach, Luca’s legs had turned to jelly.

“You made the right call,” the lifeguard told Gemma. “Most people who get into trouble here try to wade back.”

That night, Luca found the tide chart on Gemma’s phone and studied it for a long time. The next day, he printed his own copy and stuck it on the fridge.

PrepNest

Lightning

Lightning is one of nature's most powerful forces. A single bolt can heat the air around it to about 30,000 degrees Celsius, roughly five times hotter than the surface of the Sun. Somewhere on Earth, lightning flashes about 40 to 50 times every second.

How lightning forms

Inside a storm cloud, strong winds toss tiny pieces of ice and water up and down. As they crash into each other, they build up electric charges, in the same way that rubbing a balloon on your hair can build up a charge. The lighter, positively charged pieces rise to the top of the cloud, while the heavier, negatively charged pieces sink to the bottom.

When the difference between the charges becomes big enough, electricity leaps across the gap: between parts of the cloud, between two clouds, or between the cloud and the ground. That leap is lightning.

Why we hear thunder

The heat of a lightning bolt makes the air around it expand so quickly that it creates a shock wave, which we hear as thunder. Because light travels much faster than sound, we see the flash before we hear the rumble. Counting the seconds between them tells you roughly how far away the storm is: every three seconds is about one kilometre.

Staying safe

If you can hear thunder, you are close enough to be struck. Go inside a solid building or a car with a metal roof, and stay there until 30 minutes after the last thunder. Keep away from open fields, lone tall trees and water.

Did you know?

- Lightning can strike the same place more than once. Tall buildings are hit many times each year.
- A lightning bolt is only about as wide as your thumb, but it can be several kilometres long.

PrepNest

Our streets need more trees

Opinion — Dr Helen Obi, urban planner

Walk down a bare suburban street on a 38-degree afternoon and you will feel it: the heat bouncing off the road, the footpath too hot to touch, the air so thick it is hard to breathe. Now walk down a street lined with big, leafy trees. The difference is not your imagination.

Roads, roofs and car parks soak up the sun's heat during the day and release it slowly at night. This makes cities hotter than the countryside around them, an effect scientists call the urban heat island. On a summer afternoon, a road in full sun can be far hotter than the air, while the ground in the shade of a tree stays much cooler. Trees also cool the air by releasing water from their leaves, a little like a person sweating.

This matters, because heatwaves kill more Australians than any other natural disaster. The people most at risk — the elderly, babies and people with health problems — are often the ones who cannot escape to an air-conditioned shopping centre.

Trees do more than provide shade. They soak up rainwater and reduce flooding, give homes to birds and insects, and make streets more pleasant to walk along. Studies have even found that people who live near green spaces tend to feel less stressed.

Some residents worry that trees drop leaves, crack footpaths or block views. These are real concerns, but they can be managed by choosing the right species for each street and planting them properly. A few leaves in the gutter are a small price to pay for a street that is safe to walk along in January.

Our council plants about 500 street trees a year. That is not enough. I am calling on it to double that number, and to plant first in the suburbs that are hottest and have the least shade today.

Every tree planted now will be cooling our streets long after the people who planted it are gone.

PrepNest