

What your child will learn in Grade 8 Science

Grade 8 science this year covers two big topics: fluids (the science behind liquids and gases, and the technology built around them) and living things (how bodies, organs and cells work together to keep an organism healthy). Along the way, your daughter will keep building the habits of a scientist: asking good questions, running fair tests, and explaining her results clearly.

Fluids

A fluid is anything that flows, which includes gases like air and natural gas as well as liquids like water and oil. Your daughter will learn to spot fluids all around the house, from the milk in the fridge to the propane in a barbecue tank, and connect them to how they are used in everyday devices. [See the curriculum.](#)

She will also look at safety labelling. WHMIS symbols are the hazard symbols on cleaning products and other chemicals, and she will learn what they mean and how to handle, store and dispose of substances safely at home and in the lab. [See the curriculum.](#)

Many household products, like sports drinks or vinegar, are actually mixtures or solutions dissolved in water. Your daughter will learn the difference between a pure substance, a mixture and a solution, and how to describe how much solute (the dissolved stuff) is packed into a solution, called its concentration. [See the curriculum.](#)

She will investigate why some things dissolve faster than others, looking at how temperature, stirring and particle size change the speed of dissolving. [See the curriculum.](#)

Properties like how thick a liquid is (viscosity), how heavy it is for its size (density), whether it floats (buoyancy) and how squeezable it is (compressibility) will all come up as your daughter compares different liquids and gases and links what she sees to the idea that matter is made of tiny moving particles. [See the curriculum.](#)

She will also learn the basic formulas for density (mass divided by volume) and pressure (force divided by area), and see how these ideas explain everyday things like why stiletto heels dig into soft ground while flat shoes do not. [See the curriculum.](#)

Finally, your daughter will connect fluid properties to real technology, from oil pipelines and IV lines in hospitals to squeeze bottles of ketchup, and she may build a working model, such as a hydraulic lift or a mini submarine, that moves using fluid pressure. [See the curriculum.](#)

Living things

Living things come in an enormous range of shapes and sizes, but scientists use a few core ideas, cells, tissues, organs and systems, to make sense of that variety. Your daughter will use these ideas to compare how different organisms carry out the same basic jobs, like finding food, in very different ways. [See the curriculum.](#)

She will learn that the cell is the basic building block of life, and she will compare simple single-celled organisms with complex multicelled ones, and plant cells with animal cells. She will also learn how gases and liquids move in and out of cells through diffusion and osmosis. [See the curriculum.](#)

Closer to home, your daughter will study how the human body's respiratory, circulatory, digestive, excretory and sensory systems work together to keep a person healthy, and how organs like the lungs and blood vessels play their part. She will also see how the body reacts to change, such as a faster heartbeat during exercise. [See the curriculum.](#)

She will look at how scientific research into cells and body systems has led to real medical advances, from vaccines to diets tailored to specific health needs, and what factors help or harm the healthy

function of body systems. [See the curriculum.](#)

How to help at home: Fluids

Check the WHMIS-style hazard symbols on household cleaners together and talk through what precautions the labels call for before your daughter helps with a chore like laundry or dishes, which builds the safety habits described in this unit. [See the curriculum.](#)

Compare the flow of honey, dish soap and water by tilting three containers side by side and timing how long it takes each to reach the bottom, a simple way to explore viscosity at the kitchen table. [See the curriculum.](#)

Make a saltwater or sugar-water solution and see how much dissolves before it stops going in, then try again with warm water, since this mirrors the solubility investigations she is doing in class. [See the curriculum.](#)

Ask her to explain why a can of soda floats or sinks in a glass of water, using the words density and buoyancy, which puts the science vocabulary into her own words. [See the curriculum.](#)

If you have any small hoses, pumps or a bicycle tire pump around, let her investigate how squeezing or pumping changes pressure, connecting hands-on play to the formula pressure equals force over area. [See the curriculum.](#)

How to help at home: Living things

Take her pulse before and after a set of jumping jacks and graph the change together, a hands-on way to see how the body reacts to exercise. [See the curriculum.](#)

If you have a magnifying glass or a basic microscope, look at an onion skin or a leaf and try to sketch what you see, since drawing cells and organisms accurately is a skill she is practicing at school. [See the curriculum.](#)

Talk through a recent cold or illness in the family and ask her to explain, in her own words, which body system was affected and why, linking classroom learning to real life. [See the curriculum.](#)

Compare how two very different animals, say a dog and a goldfish, breathe or move, and ask her to describe the similarities and differences in structure and function. [See the curriculum.](#)

Encourage her to look up one medical breakthrough, such as a vaccine or an organ transplant technique, and explain to the family how it improved human health, which builds both her research skills and her interest in science careers. [See the curriculum: 1, 2.](#)

Note: 41 learning outcome blocks were left out to fit the 6000-token curriculum budget for this kind of material. Use "Split into parts" to generate one document per organizing idea.