

What your child will learn in Grade 8 Science

Fluids and Their Properties

Your daughter will learn that fluids, liquids and gases, are everywhere in everyday life and technology. Air, water, oil, natural gas and even the syrup in your kitchen are all fluids, and they behave in predictable ways based on their properties. She will investigate what fluids are made of at the particle level and discover why certain fluids work better than others for specific jobs. [See the curriculum.](#)

One key idea is that fluids can be pure substances, mixtures or solutions. A pure substance like distilled water is one material throughout, while a mixture like sand and water has separate parts you can see. A solution like salt water looks uniform but is actually salt particles spread evenly through water. Your daughter will test how much salt can dissolve in water and what happens when you change the temperature or stir faster, all ways to understand how particles interact. [See the curriculum.](#)

Density, viscosity and pressure are three properties that matter a lot in real life. Density tells you how heavy something is for its size; oil floats on water because oil is less dense. Viscosity is how thick or runny a fluid is, honey is more viscous than water. Pressure is the force spread over an area, which is why a sharp heel hurts more than a flat shoe pressing on your foot. Your daughter will measure these properties and use them to explain why certain fluids are chosen for certain jobs, like using thick oil in winter car engines and thinner oil in summer. [See the curriculum.](#)

Your daughter will also learn how technology relies on fluid properties. Salt mining dissolves rock salt in water to bring it to the surface, and hydraulic lifts use fluid pressure to lift heavy objects. She will build or design a device that uses fluids to move or control something, such as a model hydraulic lift or a submarine that sinks and floats by taking in and releasing water. [See the curriculum.](#)

How to help at home

- **Mix and observe.** Stir salt, sugar or food colouring into water at different temperatures and watch how fast it dissolves. Ask your daughter to predict what will happen if you heat the water or add more salt. [See the curriculum.](#)
- **Compare liquids around the kitchen.** Pour honey, oil, water and syrup down a tilted plate or through a funnel and time how long each takes. This shows viscosity in action. [See the curriculum.](#)
- **Float and sink.** Collect small objects and predict whether they will float or sink in water. Then add salt to the water a spoonful at a time and watch what happens, this shows how density changes buoyancy. [See the curriculum.](#)
- **Read safety labels.** Look at cleaning products, paints or other household chemicals and identify the WHMIS symbols (the diamond-shaped warning labels). Talk about what each symbol means and why it matters. [See the curriculum.](#)
- **Design a simple pump or siphon.** Use a straw, a bottle and water to create a device that moves liquid from one place to another. This connects to how real pumps and valves work in pipes and medical equipment. [See the curriculum.](#)

Living Things: Cells, Systems and Health

Your daughter will explore the vast diversity of life on Earth and discover what all living things have in common. Every organism, from a single-celled bacterium to a grizzly bear, is made of cells, which are the smallest units of life. She will use a microscope to look at plant and animal cells and notice that they have different structures, plant cells have a cell wall and chloroplasts, while animal cells do not. [See the curriculum.](#)

She will learn that cells work together in tissues, tissues work together in organs, and organs work together in body systems. For example, your heart is an organ made of muscle tissue, which is made of muscle cells. Your heart is part of the circulatory system, which also includes blood vessels and blood. All these parts work as a system to carry oxygen and nutrients throughout your body. [See the curriculum: 1, 2.](#)

Your daughter will study five main human body systems: respiration (breathing), circulation (moving blood), digestion (breaking down food), excretion (removing waste) and the sensory system (seeing, hearing, touching, tasting, smelling). She will investigate how these systems respond to changes. For example, when you exercise, your heart beats faster to pump more blood to your muscles, and you breathe faster to take in more oxygen. She will also learn about research that has improved human health, such as vaccines, medicines and diets designed to support organs like the heart. [See the curriculum: 1, 2.](#)

How to help at home

- **Observe cells at home.** Cut a thin slice of onion skin, place it on a glass slide with a drop of water and look through a microscope or magnifying glass. Your daughter can draw what she sees and label the cell parts. [See the curriculum.](#)
- **Track your heart rate.** Have your daughter find her pulse (on her wrist or neck) and count her heartbeats for one minute while sitting still, then again after running up the stairs. Record the numbers and talk about why her heart beats faster during exercise. [See the curriculum.](#)
- **Follow food through digestion.** Chew a cracker for a minute without swallowing and notice how it tastes sweeter, this is your saliva breaking down starch. Talk about how food travels from your mouth through your esophagus, stomach and intestines. [See the curriculum.](#)
- **Explore the five senses.** Taste different foods with your nose pinched and unpinched to show how smell affects taste. Discuss how your sensory system sends messages to your brain. [See the curriculum.](#)
- **Research a health topic.** Choose a disease or health condition and find out how scientists have developed treatments or ways to prevent it. This connects to how medical research improves human health. [See the curriculum.](#)

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.