Slime

Suggested Age / Grade Level	Curriculum Covered	Duration
Grade 2 to Grade 7	Matter & Energy: solids and liquids, properties of matter, Particle Theory	30-45 minutes

Learning goals

The objective of this activity is to explore the concept of polymers in action by having students create their own non-Newtonian fluid (slime). Students will mix their own slime substance (or make it with a partner) and explore its liquid and solid properties by applying different forces.

Fun Facts

- A classic **Newtonian fluid** is **water**. This means it follows Newton's Law of Viscosity; **Water** has a very predictable viscosity and will always flow predictably regardless of the forces acting on it
- Slime is a non-Newtonian fluid, which means it's neither a liquid or a solid
- Slime does not have its own shape! It will alter its shape to fill whatever container it's placed in.

Key Terms

Liquid: Liquid is one of the three states of matter (solid and gas are the other two states, although technically there are two others: Plasma & Bose-Einstein). Although liquids have an exact volume, its shape is uncertain. Liquids take the shape of their container.

Solid: Solids are one of the three states of matter. They are objects that maintain their own shape.

Molecule: A molecule is the smallest unit of a substance that makes up an object or any material. For example: water is made up of small water molecules.

Polymer: A polymer is a chemical compound that is made by combining smaller molecules to make a long chain of repeating units.

Non-Newtonian fluid: Non-Newtonian fluid's viscosity changes depending on the amount of force that is applied on it.

Ontario Curriculum Connections

Grade 2: Properties of Liquids and Solids
Grade 3: Forces Causing Movement
Grade 5: Properties of and Changes in Materials/Substances/Matter
Grade 7: Pure Solutions, Particle Theory

Activity Timeline (30 minutes)

- Introduce the activity, review or introduce any key words students will need and review Fun Facts (3-5 minutes)
- Mix Ingredients to create slime. Students can create their own slime or work with a partner to create it (5-10 minutes)
- Explore the slime's solid and liquid properties by applying different forces to the slime (10 minutes)
- Discussion (5 – 10 minutes)

Materials

- ½ cup of shampoo
- ¼ cornstarch
- Food coloring and glitter (optional)
- Water
- Bowl

Additional Setup Requirements

- The materials for this recipe make enough for about 2 students
- Due to the messy nature of this activity, plastic table cloths/garbage bags and/or plastic gloves are recommended