

Processing Chemical Reactions

British Columbia & Yukon	
Grade 4	
<u>Big Ideas:</u>	<ul style="list-style-type: none"> • Matter has mass, takes up space and can change phase
<u>Curricular Competencies:</u>	<ul style="list-style-type: none"> • Identify questions to answer or problems to solve through scientific inquiry • Observe, measure, and record data, using appropriate tools, including digital technologies • Use equipment and materials safely, identifying potential risks
<u>Content:</u>	<ul style="list-style-type: none"> • the effect of temperature on particle movement (solids, liquids, and gases change with heating (e.g., boiling point, melting point [melting chocolate]) and cooling (e.g., freezing point [making ice cream]), and these physical changes are reversible)
Grade 5	
<u>Big Ideas:</u>	<ul style="list-style-type: none"> • Solutions are homogeneous
<u>Curricular Competencies:</u>	<ul style="list-style-type: none"> • Identify questions to answer or problems to solve through scientific inquiry • Observe, measure, and record data, using appropriate tools, including digital technologies • Use equipment and materials safely, identifying potential risks
<u>Content:</u>	<ul style="list-style-type: none"> • properties of solutions: concentration, pH, etc. • solutions (e.g., apple juice, coffee) that can be separated through distillation, evaporation, and crystallization
Grade 6	
<u>Big Ideas:</u>	<ul style="list-style-type: none"> • Everyday materials are often mixtures
<u>Curricular Competencies:</u>	<ul style="list-style-type: none"> • Identify questions to answer or problems to solve through scientific inquiry • Observe, measure, and record data, using appropriate tools, including digital technologies • Use equipment and materials safely, identifying potential risks
<u>Content:</u>	<ul style="list-style-type: none"> • heterogeneous mixtures (suspensions, emulsions, colloids) • mixtures: separated using a difference in component properties [density (centrifuge, settling silt deposits in river, tailings ponds), particle size (sieves, filters)] • mixtures: local First Peoples knowledge of separation and extraction methods (eulachon oil, extraction of medicines from plants, pigments, etc.)

Grade 7	
<u>Big Ideas:</u>	<ul style="list-style-type: none"> • Elements consist of one type of atom, and compounds consist of atoms of different elements chemically combined.
<u>Curricular Competencies:</u>	<ul style="list-style-type: none"> • Identify questions to answer or problems to solve through scientific inquiry • Observe, measure, and record data, using appropriate tools, including digital technologies • Use equipment and materials safely, identifying potential risks
<u>Content:</u>	<ul style="list-style-type: none"> • chemical changes: when atoms rearrange into new products accompanied by an energy change (e.g., rusting, the reaction of vinegar and baking soda, etc.)
Grade 10	
<u>Big Ideas:</u>	<ul style="list-style-type: none"> • Energy change is required as atoms rearrange in chemical processes.
<u>Curricular Competencies:</u>	<ul style="list-style-type: none"> • Identify questions to answer or problems to solve through scientific inquiry • Observe, measure, and record data, using appropriate tools, including digital technologies • Use equipment and materials safely, identifying potential risks
<u>Content:</u>	<ul style="list-style-type: none"> • acid-base chemistry