

Simple Chemical Reactions

Grade-Specific Summary Table

This table provides a quick overview of which demo activities match Alberta curriculum for each grade.

Grade	Curriculum Focus	Demo Activity	Key Concepts
Kindergarten	Matter - Object Properties	At-home volcano, Snowstorm in bottle, Slime making, Shell-less egg	Objects have properties, Objects can be similar/different
2	Matter - Combining Materials	Chemical reaction demos, Reversible vs permanent changes	Materials combined to make objects, Natural vs processed materials
3	Matter - Permanent and Reversible Changes	All demonstrations, Green penny experiment	Changes can be permanent/reversible, Natural vs processed materials

Detailed Curriculum Links and Objectives by Grade

Kindergarten: Matter - Object Properties

Curriculum Link:

- Objects have identifiable properties.
- Objects may be similar in one or more properties and different in another property.

Objectives:

- Observe that different materials have different properties.
- Watch chemical reactions produce new substances with different properties.
- Identify changes in color, texture, and state during reactions.

Grade 2: Matter - Combining Materials

Curriculum Link:

- Materials can be combined in a variety of ways to make objects.
- Materials are natural or processed.
- All processed materials originate from natural materials.

Objectives:

- Understand that mixing materials can create new substances.
- Recognize difference between reversible (salad) and non-reversible (cake) reactions.
- Identify reactants (starting materials) and products (end results).
- Observe that products can have different characteristics than reactants.
- Learn that some reactions occur naturally, others in controlled settings.

Grade 3: Matter - Permanent and Reversible Changes

Curriculum Link:

- Changes to materials or substances can be permanent or reversible.
- Materials can be used in their natural form or processed to create new materials.

Objectives:

- Distinguish permanent changes (cannot be reversed) from reversible changes.
- Understand chemical reactions in everyday life (cooking, batteries, digestion, heat packs).
- Learn that acids and bases react together (volcano experiment).
- Observe gas production in reactions (carbon dioxide bubbles).
- Connect to real-world examples: acid rain affecting limestone buildings/statues.

Activity-Based Summary Table

Demo Activity	Curriculum Outcome	Key Concepts
At-Home Volcano	Acid-base reaction	Baking soda + vinegar = CO ₂ gas production
Snowstorm in Bottle	Gas production, Pressure	Alka Seltzer + water = bubbles and foam
Slime Making	Polymer cross-linking	Contact solution + glue = stretchy slime
Shell-less Egg	Acid dissolving calcium carbonate	Vinegar dissolves eggshell over time
Green Penny Experiment	Oxidation reaction	Vinegar + salt cleans copper oxide