CURRICULUM CONNECTIONS

This section is for educators who want more specific information regarding the grade 5 curriculum connections for each activity in *Whoops! Unexpected Discoveries in Chemical Engineering.*

Grade 5: Table of Knowledge Outcomes[1]

Activity	Unit	STS-Knowledge Outcomes
1 Silly Mixture Mysteries	Classroom Chemistry	SLE 1: Recognize and identify examples of the following kinds of mixtures: 2 or more solids, a solid and a liquid, 2 or more liquids.
2 Sneaky Sand	Classroom Chemistry	SLE 2: Apply and evaluate a variety of techniques for separating different materials
3 Deconstructing Popsicles®	Classroom Chemistry	SLE 3: Distinguish substances that will dissolve in a liquid from those that will not, and demonstrate a way of recovering a material from a solution.
4 Fool's Gold?	Classroom Chemistry	SLE 5: Recognize that the surface of water has distinctive properties, and describe the interaction of water with other liquids and solids.
5 What a Gas!	Classroom Chemistry	SLE 6: Produce carbon dioxide gas through the interaction of solids and liquids, and demonstrate that it is different from air SLE 9: Use an indicator to identify a solution as being acidic or basic
6 Chew on This!	Classroom Chemistry	SLE 7: Distinguish reversible from irreversible changes of materials, and give examples of each
7 Chemical Reaction Detectives	Classroom Chemistry	SLE 8: Recognize and describe evidence of a chemical reaction. Explain how the products of a reaction differ from the original substances

[1] Alberta Education
Programs of Study (1996)

SCIENCE INQUIRY SKILLS

The science skills[1] that the participants are introduced to in *Whoops! Unexpected Discoveries in Chemical Engineering* activities include:

Skills	Description
Focus	Ask questions that lead to exploration or investigation; identify problems to be solved; predict or state hypotheses; consider possible procedures or strategies for inquiry or problem-solving.
Explore and Investigate	Identify appropriate materials and equipment; plan and carry out procedures to constitute a fair test; identify variables; attempt a variety of strategies for problem-solving; make observations and accurate records; identify and use a variety of sources of information.
Reflect and Interpret	Describe observations using a variety of formats; evaluate procedures and make suggestions for improvements; state inferences and relationships; identify new questions that arise from what was learned.

[1] Alberta Education
Programs of Study (1996)

SCIENCE ATTITUDE OUTCOMES[1]

Positive attitudes and appreciation for science
Students are encouraged to be aware of the role, contributions and limitations of scientists and science regarding natural resources and our environment.

Interest in science
Students are encouraged to show interest in 'real-life' science-related questions and issues, and pursue their curiosity and interest in science-based realms.

Scientific inquiry
Students are encouraged to observe, seek and apply evidence when answering questions. They will be encouraged to be open-minded, and to base conclusions on the evidence from their experiences.

Collaboration
Students are encouraged to work cooperatively to carry out procedures, gather information and discuss ideas. They are encouraged to show a willingness to work with others and share their experiences as a group. They are encouraged to show care and consideration when conducting activities and leave the space tidy for the next group.

Stewardship
Students are encouraged to demonstrate sensitivity and awareness of the impact of human actions on the earth's resources and recognizing their role in respecting their environment.

Mutual respect
Students are encouraged to appreciate that scientific understanding evolves from the interaction of ideas involving people with different view and backgrounds.

Safety
Students are encouraged to demonstrate a concern for safety in science and technology contexts.

[1] Alberta Education Programs of Study (1996)