**Assessment Support**

# Everyday Chemistry

## Why is it important to know what we eat?

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# Assessment Support

The **Learning Checklist** provides learning criteria statements that support development of and growth in competencies. These learning criteria statements also support assessment of specific learning outcomes from the Alberta Social Studies program of study. This checklist can provide the basis for the construction of rubrics for assessment of student projects and products.

The **Rubric** can be used to assess the product that students complete to demonstrate their learning in this project-based inquiry.

The **Project Check-In** chart provides criteria statements, based on learning outcomes, which students can use to self-assess or monitor their learning.

**Target Learning** checklists in some of the **Developing Competencies** student resources encourage students to reflect on their learning and competencies.

Criteria statements support student learning and metacognition, and provide opportunities to discuss, explore, develop and reinforce competencies.

- Discuss the criteria statements with students at the beginning and close of each lesson or activity.

- Make a large poster with the criteria statements. Once students believe they can demonstrate the understanding or skill, have them initial or create an emoji under the statement.

- Provide students with the criteria checklist. Encourage them to monitor their own progress as they complete and share their research and learning.

- Use self-assessment check-in strategies with the criteria statements, such as **Fist to Four** and/or **Thumbs**, to check for understanding.

- Use each criteria statement as a starting point to have students complete a sentence stem that represents evidence of their learning.

> Share and discuss the rubric with students before they start their projects. The rubric should be adapted to meet the needs of students and focus of their inquiry. Rubrics can also be used to communicate learning expectations with parents and guardians. Send the rubric home for signatures before and after project work is completed.

# Assessment Strategies

Quick check-in strategies, such as **Fist to Four** or **Thumbs** can provide an effective approach to ongoing, formative assessment during whole class or group activities.

In **Fist to Four**, students are asked to use their fists or fingers to self-assess their understanding:

- A fist says "I don't understand."

- One finger says "I'm not sure."

- Two fingers say "I'm starting to understand."

- Three fingers say "I get it."

- Four fingers say "I know I can apply this understanding!"

**Thumbs** Up, Sideways, and Down is an alternative strategy that can be used to indicate agreement. Up says "yes"; Down says "no"; and Sideways says "not sure."

**Exit slips** or "**notes out the door**" are quick, informal assessments that can be used as a quick check on student understanding. Exit slips can be constructed around specific learning in a class or with questions or prompts such as:

- 3 things I learned today; 2 things I found interesting; 1 question I still have

- What we should do/learn/review tomorrow

Peer feedback can be part of ongoing assessment approaches. Students provide **two stars and a wish** or **two hurrahs and a hint** to group members or individual classmates that is linked to criteria. The **Check-In Checklist** or **Rubric** criteria can provide criteria. Students offer two strengths and one constructive criticism or hint.

A **learning record** can be set up for individual students or the whole class. Students can be asked to maintain a record of their learning by adding to the chart as they complete their project work.

| Ideas | Connections |
|---|---|
| Questions | Comments |
| Plans | |

The assessment checklists and rubric are meant as starting points only. They should be adapted to best meet the needs of your students and your approach to assessment.

Blank templates follow the **Learning Checklist**, **Check-In Checklists** and **Rubric**. Use the fillable fields to create your own assessment tools.

Students use and develop competencies when they encounter unfamiliar or challenging situations. Competencies help students draw and build upon what they know, how they think and what they can do. They should not be formally evaluated, but rather feedback provided to students through subject-area learning outcomes.

The competency focus and icons are explained in the *Learning and Competencies* section of the **Everyday Chemistry Project Guide**.

# Learning Checklist

| This student .......................................................... is able to: | Yes | Some of the time | Not yet |
|---|---|---|---|
| Identifies the composition of everyday foods, recognizing liquids, solids and mixtures | | | |
| Applies understandings of chemical reactions to explain how processes change food ingredients into food dishes and/or drinks | | | |
| Distinguish and compare properties of foods, including reversible, irreversible and acidity | | | |
| Make observations and inferences to develop predictions | | | |
| Use patterns found in information and statistics to identify conditions | | | |
| Use numbers and fractions to interpret information and make conclusions | | | |
| Use and/or create graphic organizers to make connections between ideas | | | |
| Compare information and perspectives from a variety of sources, such as topic experts, community members, elders, knowledge keepers and the internet | | | |
| Search, retrieve and organize information from multiple sources to answer a research question | | | |
| Generate and share original ideas, opinions, questions, personal perspectives and conclusions with others | | | |
| Communicate, using different media, to support ideas, opinions, understandings and conclusions | | | |
| Work collaboratively and cooperatively in group settings | | | |
| Reflect on learning and growth | | | |

# Learning Checklist Template

| This student ............................................................... is able to: | Yes | Some of the time | Not yet |
|---|---|---|---|
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# Project Check-in

| Learning Targets | Yes | Almost | Not yet | I know this because... |
|---|---|---|---|---|
| I liquids, solids and mixtures that are part of everyday foods. | | | | |
| I explain how chemical reactions cause food ingredients to change. | | | | |
| I compare characteristics of foods, including their acidity and reversible and irreversible changes. | | | | |
| I use what I have learned to infer and develop predictions. | | | | |
| I use patterns to identify conditions in human activities and choices. | | | | |
| I use numbers and fractions I find in statistics to interpret information and make conclusions. | | | | |
| I use or create graphic organizers to help me make connections between ideas and information. | | | | |
| I compare information and perspectives from topic experts, community members, elders, knowledge keepers and the internet. | | | | |
| I find and organize information from multiple sources to answer a research question. | | | | |
| I share, by talking or writing, my ideas, opinions, questions and conclusions with others. | | | | |
| I use different media to communicate my learning. | | | | |
| I work cooperatively with others in groups. | | | | |
| I reflect on what I have learned. I describe what I think is most important in my learning. | | | | |

# Project Check-in Template

| Learning Targets | Yes | Almost | Not yet | I know this because... |
|---|---|---|---|---|
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# Project Rubric

| Learning Targets | Wow | Yes | Not Yet |
|---|---|---|---|
| **Illustrates the relevance of chemical reactions and interactions to the properties of everyday foods** | Selects relevant examples to illustrate the relevance of chemical properties, interactions and reactions to everyday foods | Identifies examples that show chemical properties, interactions or reactions in everyday foods | Finds limited examples related to chemistry in everyday foods |
| **Uses patterns and makes inferences to develop predictions, make observations and develop conclusions** | Makes informed predictions and draws reasoned inferences about chemical properties of everyday foods and food consumption patterns | Makes predictions and observations about chemical properties of everyday foods and food consumption patterns | Uses limited examples related to the chemistry of everyday food choices |
| **Manage information from multiple sources to investigate a question and build understandings of the impact of science on everyday choices** | Selects and organizes information and ideas effectively and combines them to illustrate connections between scientific knowledge and everyday life | Organizes identified information and ideas accurately to describe how science affects everyday choices | Selects from identified information and ideas, but does not organize them effectively |
| **Create a product to inform and share understandings that result from an inquiry** | Purposefully applies research to create a product that shares understandings and perspectives | Uses examples from research to create a product that shares understandings and perspectives | Selects examples from research, but is unable to create a product that shares understandings |

# Project Rubric

| Learning Targets | Wow | Yes | Not Yet |
|---|---|---|---|
| Illustrates the relevance of chemical reactions and interactions to the properties of everyday foods | | | |
| Uses patterns and makes inferences to develop predictions, make observations and develop conclusions | | | |
| Manage information from multiple sources to investigate a question and build understandings of the impact of science on everyday choices | | | |
| Create a product to inform and share understandings that result from an inquiry | | | |