

## Alberta Curriculum Outcomes

*\* Statements written in green italics are suggestions for carrying out each outcome*

### Grade 5

#### **Grade 5 Science**

##### **Organizing Idea:**

**Earth Systems:** Understandings of the living world, Earth, and space are deepened through investigating natural systems and their interactions.

**Guiding Question:** What is climate?

**Learning Outcome:** Students analyze climate and compare it to weather conditions.

##### ***Knowledge:***

- Climate affects various aspects of human activity, including • agriculture • infrastructure • clothing • transportation • recreation.
- Climate affects various aspects of animal activity, including • agriculture • infrastructure • clothing • transportation • recreation • migration patterns • diet timing of having offspring (reproduction)

##### ***Understanding:***

Climate has an effect on human and animal activity.

##### ***Skills and Procedures:***

Explain how climate can influence human and animal activity.

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##### ***Knowledge:***

- Conservation agriculture practices include • minimally disturbing soil • maintaining soil covers • rotating crops.
- Conservation agriculture is a sustainable agriculture practice adapted to the requirements of the plants and animals being farmed and the local climate and environment of each region.
- First Nations, Métis, and Inuit practise sustainable harvesting and protocols.

##### ***Understanding:***

- Climate has an effect on agricultural practices.

##### ***Skills and Procedures:***

- Relate plants and animals commonly used in Alberta agriculture production to climate.
- Research how agricultural production, including agro-pastoral practices, contributes to daily life in Alberta.

- Investigate how conservation is used in agricultural practice for the protection and maintenance of land.
  - Explain how First Nations, Métis, or Inuit practices relate to sustainable harvesting and protocols.
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**Organizing Idea:**

**Scientific Methods:** Investigation of the physical world is enhanced through the use of scientific methods that attempt to remove human biases and increase objectivity.

**Guiding Question:** How does evidence lead to understanding?

**Learning Outcome:** Students investigate how evidence is gathered and explain the importance of ethics and objectivity in science.

***Knowledge:***

- The variable that is changed is called the manipulated or independent variable.
- What happens in response to the variable that is changed is called the responding or dependent variable.
- The responding or dependent variable is what is observed or measured as evidence.
- A controlled experiment is a scientific experiment that is done using a specific method to remove human biases and expectations from the data and results.
- In a controlled experiment, only one manipulated/independent variable can be changed at a time and all others are kept the same.
- In a controlled experiment, there is a control group and one or more variable groups.
- The control group has all variables controlled and the variable group(s) differ in one manipulated/independent variable only.
- The control group in which nothing has been changed will be compared to the variable group(s).

*\*Have students pair up and conduct an experiment on the plants they are growing. One can be the control and the other will be the test group*

***Understanding:***

- Variables are factors that can be controlled, changed, or measured in an experiment to develop evidence.
- Scientific evidence can be collected using controlled experiments to determine cause and effect.

***Skills and Procedures:***

- Define manipulated/independent and responding/dependent variables.

- Plan and conduct a simple controlled experiment.
  - Identify the variables in a simple controlled experiment.
  - Evaluate the effect of the manipulated variable on the responding variable.
  - Defend a conclusion about cause and effect based on evidence gathered in a simple controlled experiment.
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***Knowledge:***

- Clear, accurate, and honest communication of evidence must • use correct vocabulary • include all relevant data • be free from personal bias • be understood by the intended audience.

***Understanding:***

- Evidence must be communicated clearly and accurately.

***Skills and Procedures:***

- Identify examples of inaccurate or unclear communication of evidence and evaluate the potential impact.
- Use scientific vocabulary in various contexts.

## Grade 5 English Language Arts

### **Organizing Idea:**

**Oral Language:** Listening and speaking form the foundation for literacy development and improve communication, collaboration, and respectful mutual understanding.

**Guiding Question:** How can the presentation of ideas and information be enhanced through oral communication?

**Learning Outcome:** Students investigate aspects of oral language and how it can be designed to communicate ideas and information.

### ***Knowledge:***

- Collaborative processes include building trust by listening to, acknowledging, and accepting the contributions of others.
- Collaborative dialogue includes active listening.
- Collaborative dialogue uses respectful language and can be enhanced by humour.
- Considering the perspectives of others and using thoughtful or courteous language builds trust and maintains respectful relationships.
- Demonstrating respect for how other people wish to be addressed maintains relationships.
- Building consensus in collaborative activities involves adaptability and compromise.
- Non-verbal language can enhance collaborative dialogue.

### ***Understanding:***

- Collaborative processes are enhanced by effective dialogue.

### ***Skills and Procedures:***

- Engage in collaborative dialogue to share ideas, solve problems, or make decisions.
- Contribute to discussions by agreeing, disagreeing, and adding to or explaining ideas.
- Use respectful language to build trust and be considerate of others.
- Work to reach shared understandings when perspectives or opinions within groups differ.

## Grade 5 Mathematics

### **Organizing Idea:**

**Statistics:** The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

**Guiding Question:** How might frequency bring meaning to data?

**Learning Outcome:** Students analyze frequency in categorized data

### ***Knowledge:***

- Frequency can be compared across categories to answer statistical questions. -The mode is the category with the highest frequency.
- Closed-list response survey questions provide a list of possible responses.
- Open-ended response survey questions allow any response.
- Survey responses can be categorized in various ways.
- Representations of frequency can include • bar graphs • dot plots • stem-and-leaf plots.

### ***Understanding:***

- Frequency is a count of categorized data, but it is not the data value itself.
- Frequency can be a count of categorized responses to a question.
- Frequency can be used to summarize data.
- Frequency can be represented in various forms.

### ***Skills and Procedures:***

- Discuss potential categories for open-ended response survey questions and closed-list response survey questions in relation to the same statistical question. -Formulate closed-list response survey questions to collect data to answer a statistical question.
- Categorize data collected from a closed-list response survey.
- Organize counts of categorized data in a frequency table.-
- Create various representations of data, including with technology, to interpret frequency.