Forward Education

Wildfire detection with Autonomous Vehicles

Alberta Programs of Study
Mathematics
Grade **7** - Adopted: **2007/Updated 2016**

GENERAL OUTCOME / COURSE	AB.MP.	Mathematical Processes
GENERAL OUTCOME / SPECIFIC OUTCOME	[PS]	Problem Solving: Students are expected to develop and apply new mathematical knowledge through problem solving
GENERAL OUTCOME / SPECIFIC OUTCOME	[R]	Reasoning: Students are expected to develop mathematical reasoning
GENERAL OUTCOME / SPECIFIC OUTCOME	[V]	Visualization: Students are expected to develop visualization skills to assist in processing information, making connections and solving problems.

GENERAL OUTCOME / COURSE	AB.7.2.	PATTERNS AND RELATIONS
GENERAL OUTCOME / SPECIFIC OUTCOME		**(Patterns): Use patterns to describe the world and to solve problems.**
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.2.2.	Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, PS, R, V] [ICT: C7–3.1]

GENERAL OUTCOME / COURSE	AB.7.2.	PATTERNS AND RELATIONS
GENERAL OUTCOME / SPECIFIC OUTCOME		**(Variables and Equations): Represent algebraic expressions in multiple ways.**
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.2.3.	Demonstrate an understanding of preservation of equality by: modelling preservation of equality, concretely, pictorially and symbolically; applying preservation of equality to solve equations. [C, CN, PS, R, V]

Alberta Programs of Study
Mathematics
Grade **8** - Adopted: **2007/Updated 2016**

GENERAL OUTCOME / COURSE	AB.MP.	Mathematical Processes
GENERAL OUTCOME / SPECIFIC OUTCOME	[PS]	Problem Solving: Students are expected to develop and apply new mathematical knowledge through problem solving
GENERAL OUTCOME / SPECIFIC OUTCOME	[R]	Reasoning: Students are expected to develop mathematical reasoning
GENERAL OUTCOME / SPECIFIC OUTCOME	[V]	Visualization: Students are expected to develop visualization skills to assist in processing information, making connections and solving problems.

GENERAL OUTCOME / COURSE	AB.8.2.	PATTERNS AND RELATIONS
GENERAL OUTCOME / SPECIFIC OUTCOME		(Patterns): Use patterns to describe the world and to solve problems.
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	8.2.1.	Graph and analyze two-variable linear relations. [C, ME, PS, R, T, V] [ICT: P2–3.3]

Alberta Programs of Study
Science
Grade **7** - Adopted: **2014**

GENERAL OUTCOME / COURSE	AB.7.A.	Unit A: Interactions and Ecosystems (Social and Environmental Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.A.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.A.STS.1.	Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
ILLUSTRATIVE EXAMPLE	7.A.STS.1.4.	Analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions

GENERAL OUTCOME / COURSE	AB.7.A.	Unit A: Interactions and Ecosystems (Social and Environmental Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.A.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:

SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.A.STS.3.	Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment
ILLUSTRATIVE EXAMPLE	7.A.STS.3.3.	Identify signs of ecological succession in local ecosystems (e.g., emergence of fireweed in recently cut forest areas, replacement of poplar by spruce in maturing forests, reestablishment of native plants on unused farmland)
GENERAL OUTCOME / COURSE	AB.7.B.	Unit B: Plants for Food and Fibre (Science and Technology Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.B.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.B.STS.1.	Investigate plant uses; and identify links among needs, technologies, products and impacts
ILLUSTRATIVE EXAMPLE	7.B.STS.1.3.	Investigate trends in land use from natural environments (e.g., forests, grasslands) to managed environments (e.g., farms, gardens, greenhouses) and describe changes
ILLUSTRATIVE EXAMPLE	7.B.STS.1.4.	Investigate practical problems and issues in maintaining productive plants within sustainable environments, and identify questions for further study (e.g., investigate the long-term effects of irrigation practices or fertilizer use)
GENERAL OUTCOME / COURSE	AB.7.B.	Unit B: Plants for Food and Fibre (Science and Technology Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.B.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.B.STS.4.	Identify and interpret relationships among human needs, technologies, environments, and the culture and use of living things as sources of food and fibre
ILLUSTRATIVE EXAMPLE	7.B.STS.4.2.	Investigate and identify intended and unintended consequences of environmental management practices (e.g., identify problems arising from monocultural land use in agricultural and forestry practices, such as susceptibility to insect infestation or loss of diversity)
GENERAL OUTCOME / COURSE	AB.7.C.	Unit C: Heat and Temperature (Social and Environmental Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.C.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.C.STS.1.	Illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources
ILLUSTRATIVE EXAMPLE	7.C.STS.1.3.	Identify and explain uses of devices and systems to generate, transfer, control or remove thermal energy (e.g., describe how a furnace and wall thermostat keep a house at a constant temperature)
GENERAL OUTCOME / COURSE	AB.7.C.	Unit C: Heat and Temperature (Social and Environmental Emphasis)

GENERAL OUTCOME / SPECIFIC OUTCOME	7.C.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.C.STS.2.	Describe the nature of thermal energy and its effects on different forms of matter, using informal observations, experimental evidence and models
ILLUSTRATIVE EXAMPLE	7.C.STS.2.1.	Compare heat transmission in different materials (e.g., compare conduction of heat in different solids; compare the absorption of radiant heat by different surfaces)
ILLUSTRATIVE EXAMPLE	7.C.STS.2.2.	Explain how heat is transmitted by conduction, convection and radiation in solids, liquids and gases
ILLUSTRATIVE EXAMPLE	7.C.STS.2.4.	Distinguish between heat and temperature; and explain temperature, using the concept of kinetic energy and the particle model of matter
GENERAL OUTCOME / COURSE	AB.7.C.	Unit C: Heat and Temperature (Social and Environmental Emphasis)
GENERAL OUTCOME / SPECIFIC OUTCOME	7.C.STS.	Outcomes for Science, Technology and Society (STS) and Knowledge - Students will:
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE	7.C.STS.3.	Apply an understanding of heat and temperature in interpreting natural phenomena and technological devices
ILLUSTRATIVE EXAMPLE	7.C.STS.3.3.	Compare and evaluate materials and designs that maximize or minimize heat energy transfer (e.g., design and build a device that minimizes energy transfer, such as an insulated container for hot drinks; evaluate different window coatings for use in a model home)