Main Criteria: Forward Education
Secondary Criteria: Alberta Programs of Study
Subjects: Mathematics, Science, Technology Education
Grades: 5, 6, Key Stage 2

Forward Education

How Wind Turbines Capture Kinetic Energy

Alberta Programs of Study
Mathematics
Grade **5** - Adopted: **2022**

GENERAL OUTCOME / COURSE		**Grade 5**
GENERAL OUTCOME / SPECIFIC OUTCOME		**Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.**
SPECIFIC OUTCOME / ILLUSTRATIVE EXAMPLE		**In what ways can the processes of addition and subtraction be articulated?**
ILLUSTRATIVE EXAMPLE		Students add and subtract within 1 000 000, including decimal numbers to thousandths, using standard algorithms.

Alberta Programs of Study
Science
Grade **5** - Adopted: **1996**

GENERAL OUTCOME / COURSE	**AB.5-2.**	**Science Inquiry: Recognize the importance of accuracy in observation and measurement; and, with guidance, apply suitable methods to record, compile, interpret and evaluate observations and measurements.**
GENERAL OUTCOME / SPECIFIC OUTCOME	5-2.3.	Explore and Investigate: Students will identify one or more ways of finding answers to given questions.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-2.6.	Explore and Investigate: Students will select appropriate materials and identify how they will be used.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-2.13.	Reflect and Interpret: Students will identify possible applications of what was learned.
GENERAL OUTCOME / COURSE	**AB.5-3.**	**Problem Solving through Technology: Design and carry out an investigation of a practical problem, and develop a possible solution.**
GENERAL OUTCOME / SPECIFIC OUTCOME	5-3.4.	Explore and Investigate: Students will attempt a variety of strategies and modify procedures, as needed (troubleshoot problems).

GENERAL OUTCOME / SPECIFIC OUTCOME	5-3.8.	Reflect and Interpret: Students will evaluate the procedures used to solve the problem and identify possible improvements.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-3.9.	Reflect and Interpret: Students will evaluate a design or product, based on a given set of questions or criteria. The criteria/questions may be provided by the teacher or developed by the students.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-3.10.	Reflect and Interpret: Students will identify new applications for the design or problem solution.
GENERAL OUTCOME / COURSE	**AB.5-4.**	**Attitudes: Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.**
GENERAL OUTCOME / SPECIFIC OUTCOME	5-4.2.	Students will show growth in acquiring and applying confidence in personal ability to learn and develop problem-solving skills.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-4.3.	Students will show growth in acquiring and applying inventiveness and open-mindedness.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-4.5.	Students will show growth in acquiring and applying flexibility in considering new ideas.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-4.6.	Students will show growth in acquiring and applying critical-mindedness in examining evidence and determining what the evidence means.
GENERAL OUTCOME / COURSE	**AB.5-6.**	**Topic B: Mechanisms Using Electricity: Construct simple circuits, and apply an understanding of circuits to the construction and control of motorized devices.**
GENERAL OUTCOME / SPECIFIC OUTCOME	5-6.1.	Identify example applications of electrical devices in the school and home environment, and classify the kinds of uses. Categories of electrical use may include such things as: heating, lighting, communicating, moving, computing.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-6.2.	Design and construct circuits that operate lights and other electrical devices.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-6.7.	Demonstrate different ways of lighting two lights from a single power source, and compare the results. Students should recognize that wiring two bulbs in series makes both bulbs glow less brightly than if the bulbs are wired in parallel. Students may demonstrate this knowledge operationally and do not need to use the terms series and parallel.

GENERAL OUTCOME / COURSE	**AB.5-9.**	**Topic D: Weather Watch: Investigate relationships between weather phenomena and human activity.**
GENERAL OUTCOME / SPECIFIC OUTCOME	5-9.2.	Describe patterns of air movement, in indoor and outdoor environments, that result when one area is warm and another area is cool.
GENERAL OUTCOME / SPECIFIC OUTCOME	5-9.3.	Describe and demonstrate methods for measuring wind speed and for finding wind direction.

Alberta Programs of Study

Science

Grade **6** - Adopted: **1996**

GENERAL OUTCOME / COURSE	**AB.6-2.**	**Science Inquiry: Recognize the importance of accuracy in observation and measurement; and apply suitable methods to record, compile, interpret and evaluate observations and measurements.**
GENERAL OUTCOME / SPECIFIC OUTCOME	6-2.3.	Explore and Investigate: Students will identify one or more ways of finding answers to given questions.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-2.9.	Explore and Investigate: Students will select appropriate materials and identify how they will be used.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-2.17.	Reflect and Interpret: Students will identify possible applications of what was learned.
GENERAL OUTCOME / COURSE	**AB.6-3.**	**Problem Solving through Technology: Design and carry out an investigation of a practical problem, and develop a possible solution.**
GENERAL OUTCOME / SPECIFIC OUTCOME	6-3.4.	Explore and Investigate: Students will attempt a variety of strategies and modify procedures, as needed (troubleshoot problems).
GENERAL OUTCOME / SPECIFIC OUTCOME	6-3.8.	Reflect and Interpret: Students will evaluate procedures used and identify possible improvements.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-3.9.	Reflect and Interpret: Students will evaluate a design or product, based on a given set of questions or criteria. The criteria/questions may be provided by the teacher or developed by the students. .

GENERAL OUTCOME / SPECIFIC OUTCOME	6-3.10.	Reflect and Interpret: Students will identify positive and negative impacts that may arise and potential risks that need to be monitored: What good effects and what bad effects could this solution have? What would we need to look for to be sure that it is working as intended?
GENERAL OUTCOME / SPECIFIC OUTCOME	6-3.11.	Reflect and Interpret: Students will identify new applications for the design or problem solution.
GENERAL OUTCOME / COURSE	**AB.6-4.**	**Attitudes: Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.**
GENERAL OUTCOME / SPECIFIC OUTCOME	6-4.2.	Students will show growth in acquiring and applying confidence in personal ability to learn and develop problem-solving skills.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-4.3.	Students will show growth in acquiring and applying inventiveness and open-mindedness.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-4.5.	Students will show growth in acquiring and applying flexibility in considering new ideas.
GENERAL OUTCOME / SPECIFIC OUTCOME	6-4.6.	Students will show growth in acquiring and applying critical-mindedness in examining evidence and determining what the evidence means.