

Teaching a lesson using wind energy concepts?

Here are Massachusetts science standards that could fit with your lesson.

Grades K-2

LABEL	STANDARD
Earth and Space Science 3	Understand that air is a mixture of gases that is all around us and that wind is moving air.
Earth and Space Science 4	Describe the weather changes from day to day and over the seasons.

Grades 3-5

LABEL	STANDARD
Earth and Space Science 6	Explain how air temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time.
Earth and Space Science 8	Describe how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation.
Physical Sciences 3	Identify the basic forms of energy (light, sound, heat, electrical, and magnetic). Recognize that energy is the ability to cause motion or create change.
Physical Sciences 5	Give examples of how energy can be transferred from one form to another.
Physical Sciences 6	Recognize that electricity in circuits requires a complete loop through which an electrical current can pass, and that electricity can produce light, heat, and sound.
Physical Sciences 7	Identify and classify objects and materials that conduct electricity and objects and materials that are insulators of electricity.

Grades 6-8

LABEL	STANDARD
Earth and Space Science 4	Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere.
Physical Sciences 11	Explain and give examples of how the motion of an object can be described by its position, direction of motion, and speed.
Physical Sciences 13	Differentiate between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa.

Grades 9-12

LABEL	STANDARD
Earth and Space Science 1.1	Identify Earth's principal sources of internal and external energy, such as radioactive decay, gravity, and solar energy
Earth and Space Science 1.3	Explain how the transfer of energy through radiation, conduction, and convection contributes to global atmospheric processes, such as storms, winds, and currents.
Earth and Space Science 1.4	Provide examples of how the unequal heating of Earth and the Coriolis effect influence global circulation patterns, and show how they impact Massachusetts weather and climate (e.g., global winds, convection cells, land/sea breezes, mountain/valley breezes).
Chemistry 6.4	Describe the law of conservation of energy. Explain the difference between an endothermic process and an exothermic process.
Chemistry 6.5	Recognize that there is a natural tendency for systems to move in a direction of disorder or randomness (entropy).
Physics 2.1	Interpret and provide examples that illustrate the law of conservation of energy.
Physics 2.2	Interpret and provide examples of how energy can be converted from gravitational potential energy to kinetic energy and vice versa.
Physics 2.3	Describe both qualitatively and quantitatively how work can be expressed as a change in mechanical energy.
Physics 5.1	Recognize that an electric charge tends to be static on insulators and can move on and in conductors. Explain that energy can produce a separation of charges.
Physics 5.6	Explain how electric current is a flow of charge caused by a potential difference (voltage), and how power is equal to current multiplied by voltage.