

EDUCATION STANDARDS

LAUNCH IT

National Science Education Standards (Grades 3–8)

Physical Science

- Properties of Objects and Materials (K–4)
- Position and Motion of Objects (K–4)
- Motion and Forces (5–8)

Science and Technology

- Abilities of Technological Design (3–8)
- Understandings About Science and Technology (3–8)

International Technology Education Association Content Standards (Grades 3–8)

Design

- Standard 2: Students will develop an understanding of the core concepts of technology.
- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.

Massachusetts Science and Technology/Engineering Standards (Grades 3–8)

Physics (3–5)

- Observable Properties of Objects
- Position and Motion of Objects
- Forms of Energy
- Conservation of Energy

Physics (6–8)

- Conservation of Energy
- Forms of Energy

Technology/Engineering (3–8)

- Materials, Tools, and Machines
- Engineering Design

National Council of Teachers of Mathematics Standards (Grades 3–8)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

TOUCHDOWN

National Science Education Standards (Grades 3–8)

Physical Science

- Properties of Objects and Materials (K–4)
- Position and Motion of Objects (K–4)
- Motion and Forces (5–8)

Science and Technology

- Abilities of Technological Design (3–8)
- Understandings About Science and Technology (3–8)

International Technology Education Association Content Standards (Grades 3–8)

Design

- Standard 2: Students will develop an understanding of the core concepts of technology.
- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.

The Designed World

- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Massachusetts Science and Technology/Engineering Standards (Grades 3–8)

Physics (3–8)

- Observable Properties of Objects
- Position and Motion of Objects
- Properties of Objects and Materials
- Forms of Energy

Technology/Engineering (3–8)

- Materials and Tools
- Engineering Design

National Council of Teachers of Mathematics Standards (Grades 3–8)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

ROVING ON THE MOON

National Science Education Standards (Grades 6–12)

Physical Science

- Motions and Forces (6–12)
- Transfer of Energy (5–8)
- Conservation of Energy (9–12)

Science and Technology

- Abilities of Technological Design (6–12)
- Understandings About Science and Technology (6–12)

International Technology Education Association Content Standards (Grades 6–12)

Design

- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.
- Standard 13: Students will develop abilities to assess the impact of products and systems.

The Designed World

- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Massachusetts Science and Technology/Engineering Standards (Grades 6–12)

Physics (6–8)

- Position and Motions of Objects
- Forms of Energy

Physics (9–12)

- Motion and Forces
- Conservation of Energy and Momentum

Technology/Engineering (6–12)

- Materials, Tools, and Machines
- Engineering Design
- Steps in the Design Process

National Council of Teachers of Mathematics Standards (Grades 6–12)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

HEAVY LIFTING

National Science Education Standards (Grades 6–12)

Physical Science

- Motions and Forces (6–12)
- Transfer of Energy (6–8)
- Conservation of Energy (9–12)

Science and Technology (6–12)

- Abilities of Technological Design
- Understandings About Science and Technology

International Technology Education Association Content Standards (Grades 6–12)

Design

- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.
- Standard 13: Students will develop abilities to assess the impact of products and systems.

The Designed World

- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Massachusetts Science and Technology/Engineering Standards (Grades 6–12)

Physics (6–8)

- Position and Motions of Objects
- Forms of Energy

Physics (9–12)

- Motion and Forces
- Conservation of Energy and Momentum

Technology/Engineering (6–12)

- Materials, Tools, and Machines
- Engineering Design
- Steps in the Design Process
- Construction

National Council of Teachers of Mathematics Standards (Grades 6–12)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

ON TARGET

National Science Education Standards (Grades 6–12)

Physical Science

- Transfer of Energy (6–8)
- Motions and Forces (6–12)
- Conservation of Energy (9–12)

Science and Technology (6–12)

- Abilities of Technological Design
- Understandings About Science and Technology

International Technology Education Association Content Standards (Grades 6–12)

Design

- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.
- Standard 13: Students will develop abilities to assess the impact of products and systems.

The Designed World

- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Massachusetts Science and Technology/Engineering Standards (Grades 6–12)

Physics (6–8)

- Position and Motions of Objects
- Forms of Energy

Physics (9–12)

- Motion and Forces
- Conservation of Energy and Momentum

Technology/Engineering (6–12)

- Materials, Tools, and Machines
- Engineering Design
- Steps in the Design Process

National Council of Teachers of Mathematics Standards (Grades 6–12)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Algebra

- Represent and analyze mathematical situations and structures using algebraic symbols

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements

FEEL THE HEAT

National Science Education Standards (Grades 9–12)

Physical Science

- Conservation of Energy
- Interactions of Energy and Matter

Science and Technology

- Abilities of Technological Design
- Understandings About Science and Technology

International Technology Education Association Content Standards (Grades 9–12)

Design

- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Abilities for a Technological World

- Standard 11: Students will develop abilities to apply the design process.
- Standard 12: Students will develop abilities to use and maintain technological products and systems.
- Standard 13: Students will develop abilities to assess the impact of products and systems.

The Designed World

- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Massachusetts Science and Technology/Engineering Standards (Grades 9–12)

Physics

- Heat and Heat Transfer
- States of Matter
- Forms of Energy

Technology/Engineering

- Materials, Tools, and Machines
- Engineering Design
- Thermal Systems

National Council of Teachers of Mathematics Standards (Grades 9–12)

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems

Measurement

- Understand measurable attributes of objects and units, systems, and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements