

Sample Academic Standards & Frameworks

Pollution Prevention Fact Sheet

6th grade: Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.

- Demonstrate an understanding of the need for protecting, conserving, and efficiently utilizing renewable and nonrenewable natural resources.
- Identify opportunities for energy conservation at home, in school, and in the community.
- Describe historical roles of people and societies in the development of current scientific knowledge.
- Read and describe science-related careers and avocations.

7th grade: Have a working knowledge of the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Use appropriate vocabulary to describe science phenomena and instruments.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate and evaluate civic responsibility by participating in school, homes and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy.
- Evaluate current conservation practices and their effect on natural resources and local economy.
- Recognize international contributions of scientists, including male and female persons from diverse cultures and persons with disabilities.
- Read, write, describe, and discuss science related careers in colleges, business and industry, research institutes and government agencies.

8th grade: Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.

- Evaluate the implications of technology for societies, vocations, economies, the environment, including trade-offs, intended benefits, unintended consequences, and constraints.
- Analyze how the introduction of new technology has affected or could affect human activity.
- Demonstrate and evaluate civic responsibility by participating in schools, home and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy.
- Recognize international contributions of scientists, including male and female persons from diverse culture and persons with disabilities.
- Read, write, describe, and discuss science-related careers in colleges, business and industry, research institutes, and government agencies.

Household Hazardous Waste Reduction Fact Sheet

6th grade: Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.

- Demonstrate an understanding of the need for protecting, conserving, and efficiently utilizing renewable and nonrenewable natural resources.

7th grade : Have a working knowledge of the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Use appropriate vocabulary to describe science phenomena and instruments.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy and develop a plan for increased efficiency.

8th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Use appropriate vocabulary to describe science phenomena and instruments.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Evaluate implications of technology for societies, vocations, economies, and the environment including trade-offs, intended benefits, unintended consequences, and constraints
- Analyze how the introduction of new technology has affected or could affect human activity.

Pesticides Reduction Fact Sheet

6th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principals, and processes of technological design.
- Identify constraints; develop a plan and procedure to address a design problem.
- Have a working knowledge of the fundamental concepts and principals of the life, physical, and earth/space sciences and their connections.
- Compare and contrast organisms by their energy use, position in food webs, structures, and adaptations to different environments.
- Describe how fossil are used to determine patterns of evolution.

7th grade: Have a working knowledge of the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design..
- Identify a real world problem, propose a technological solution, implement the proposed solution, modify it as needed, evaluate, and produce a report of the process..
- Have a working knowledge of the fundamental concepts and principals of the life, physical, and earth/space sciences and their connections.
- Explain and model the interaction and interdependence of nonliving and living components within the ecosystem.
- Describe factors that determine and environment's carrying capacity.

8th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Form a design team, identify a common design problem, and establish criteria for determining the success of a solution.
- Compare and contrast solutions to a problem, considering factors such as available materials, tools, cost-effectiveness, and safety.
- Have a working knowledge of the fundamental concepts and principles of the life, physical, and earth/space sciences and their connections.
- Explain and model the interaction and interdependence of nonliving and living components within ecosystems.
- Analyze factors that influence the size and stability of populations.

Water Pollution Prevention and Conservation Fact Sheet

6th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Design and safely conduct scientific investigations to answer questions and test the validity of predictions: making observations, describing procedures, organizing data, drawing reasonable conclusions, and interpreting results.
- Demonstrate skill in using scientific instruments and technology to obtain different levels of precision.
- Identify patterns and relationships that suggest a cause and effect or support inferences and hypotheses.
- Evaluate the validity of an argument through presentation of data.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate an understanding of the need for protecting, conserving, and efficiently utilizing renewable and nonrenewable natural resources.

7th grade: Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.

- Evaluate implications of technology for societies, vocations, economies, and the environment including trade-offs, intended benefits, unintended consequences, and constraints.
- Demonstrate the use of scientific instruments and technology for various purposes and levels of precision.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Evaluate conservation practices and their effect on natural resources and the local economy.

8th grade: Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.

- Evaluate implications of technology for societies, vocations, economies, and the environment including trade-offs, intended benefits, unintended consequences, and constraints.
- Demonstrate the uses of scientific instruments for various purposes and levels of precision.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy.

Energy Conservation Fact Sheet

6th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Identify problems and derive solutions to demonstrate an understanding of the process of scientific investigation.
- Conduct a literature search with appropriate sources on an assigned topic.
- Have a working knowledge of the fundamental concepts and principals of the life, physical, and earth/space sciences and their connections.
- Observe, describe, classify, measure, and compare characteristics of matter, and different kinds of energy.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate an understanding of the need for protecting, conserving, and efficiently utilizing renewable and nonrenewable natural resources.
- Identify opportunities for energy conservation at home, in school and in the community.

7th grade: Have a working knowledge of the fundamental concepts and principals of the life,

physical, and earth/space sciences and their connections.

- Investigate, analyze, and explain the characteristics of forces and motion, including uniform motions.
- Define work, energy, power, and friction and give real-world examples of each.
- Analyze the properties, functions, and formation of the earth's component features.
- Investigate and evaluate the biodegradability of renewable and nonrenewable natural resources.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Evaluate current conservation practices and their effect on natural resources and the economy.

8th grade: Have a working knowledge of the fundamental concepts and principles of the life, physical, and earth/space sciences and their connections.

- Analyze the properties, functions, and formation of the earth's component features.
- Investigate and evaluate the biodegradability of renewable and nonrenewable resources.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Evaluate implications of technology for societies, vocations, economies, and the environment including trade-offs, intended benefits, unintended consequences, and constraints.
- Explain the role of technology in human modification of the physical environment.
- Analyze costs and benefits of using renewable energy vs. nonrenewable energy sources.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Evaluate current conservation practices and their effect on natural resources and the local economy.

Pollution Prevention In Schools Fact Sheet

6th grade: Have a working knowledge of the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Design and safely conduct scientific investigations to answer questions and test the validity of predictions: making observations, organizing data, drawing reasonable conclusions, and interpreting results.
- Demonstrate skill in using scientific instruments and technology to obtain different levels of precision.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate an understanding of the need for protecting, conserving, and efficiently utilizing renewable and nonrenewable natural resources.
- Identify opportunities for energy conservation at home, in school, and in the community.

Seventh grade: Have a working knowledge of the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Identify a real-world problem, propose a technological solution, implement the proposed solution, modify as needed, evaluate, and produce a report of the process.
- Have a working knowledge of the relationships among science, technology, and society in historical and contemporary contexts.
- Demonstrate and evaluate civic responsibility by participating in school, home, and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy and develop a plan for increased efficiency.

8th grade: Have a working knowledge of the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

- Know and apply the concepts, principles, and processes of technological design.
- Compare and contrast solutions to a problem, considering factors such as available materials, tools, cost-effectiveness, and safety.
- Report in a public forum the relative success of a design based on test results and criteria.
- Have a working knowledge of the relationships among science, technology and society in historical and contemporary contexts.
- Demonstrate and evaluate civic responsibility by participating in school, home and community conservation activities.
- Develop a personal environmental impact statement and institute a conservation strategy.