

Wyoming Project Learning Tree Correlation Key for Grades 9-12 Wyoming Science Content and Performance Standards

Introduction: The purpose of this document is to provide Wyoming educators who use *Project Learning Tree Secondary Environmental Education Program* with a reference guide on how PLT's activities correlate to the Wyoming Science Content and Performance Standards for grades 9-12. Educators may use PLT activities to teach or assess mastery of science skills in unifying concepts and processes, scientific inquiry, recognizing the nature and history of science, and integration of those areas.

Key to symbols and abbreviations:

- * Concept is a main focus of the activity or teaches to the standard.
- o Concept is part of the focus of the activity and supports the standard.
- n/c No correlation
- SC Science

SCIENCE, Grades 9-12

SC 1. CONCEPTS AND PROCESSES:

In the context of unifying concepts and processes, students develop an understanding of scientific content through inquiry.

LIFE SYSTEMS

- SC 11.1.1 **The Cell.** Students explain the processes of life, which necessitates an understanding of relationship between structure and function of the cell and cellular differentiation....
- SC 11.1.2: **Molecular Basis of Heredity.** Students demonstrate an understanding that organisms ensure species continuity....
- SC 11.1.3: **Biological Evolution.** Students explain how species evolve over time....
- n/c
- SC 11.1.4: **Interdependence of Organisms.** Students investigate the inter-relationships and interdependence of organisms....

Exploring Environmental Issues: Focus on Forests

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|---|--------------------------------|---|
| 1 | What's a Forest to You? | o |
| 2 | Case Study: Old-Growth Forests | o |
| 3 | Tough Choices | o |
| 6 | Squirrels vs Scopes | o |

SC 11.1.4: (continued)

Exploring Environmental Issues: Focus on Risk

1	What is Risk?	o
2	Things Aren't Always What They Seem	o
7	Decision Making	o
ST 1	Electromagnetic Fields	o
ST 3	Plastics, Risk/Benefit Analysis and Environmental Legislation	o

Exploring Environmental Issues: In the Places We Live

7	Far Reaching Decisions	o
8	Regional Community Issues: The Ogallala Aquifer	o

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	o
7	Where Does Your Garbage Go	o

SC 11.1.5: Matter, Energy, and Organization in Living Systems. Students describe the need of living systems for a continuous input of energy to maintain chemical and physical stability.

SC 11.1.6: Behavior and Adaptations. Students examine behavior as the sum of responses of an organism to stimuli in its environment.

n/c

EARTH, SPACE AND PHYSICAL SYSTEMS

SC 11.1.7: Geochemical Cycles. Students describe the Earth as a closed system and demonstrate a conceptual understanding of the following systems: geosphere, hydrosphere, atmosphere, and biosphere.

SC 11.1.8: Origin and Evolution of the Earth System. Students investigate geologic time through comparing rock sequences, the fossil record, and decay rates of radioactive isotopes.

SC 11.1.9: Origin and Evolution of the Universe. Students examine evidence for the Big Bang Theory and recognize the immense time scale involved in comparison of human-perceived time.

n/c

SC 11.1.10: Structure and Properties of Matter. Students describe the atomic structure of matter including subatomic particles, their properties, and interactions.

Exploring Environmental issues: Focus on Risk

ST 2	Chlorine: Looking at Trade-offs	o
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SC 11.1.11: Chemical Reactions. Students recognize that chemical reactions take place all around us.

Exploring Environmental Issues: Municipal Solid Waste

4 Composting *

SC 11.1.12: Conservation of Energy and Increase in Disorder. Students demonstrate an understanding of the laws of conservation of mass and energy within the context of physical and chemical changes. They realize the tendency for systems to increase in disorder.

n/c

SC 11.1.13: Energy and Matter. Students demonstrate an understanding of types of energy, energy transfer and transformations, and the relationship between energy and matter.

Exploring Environmental issues: Focus on Risk

ST 1 Electromagnetic Fields 0

Exploring Environmental Issues: Municipal Solid Waste

4 Composting 0

5 Waste-to-Energy 0

SC 11.1.14: Force and Motion. Students develop a conceptual understanding of Newton's Laws of Motion, gravity, electricity, and magnetism.

Exploring Environmental issues: Focus on Risk

ST 1 Electromagnetic Fields 0

SC 2. SCIENCE AS INQUIRY:

Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry.

SC 11.2.1: Students research answers to science questions.

Exploring Environmental Issues: Focus on Forests

1 What's a Forest to You? 0

2 Case Study: Old-Growth Forests *

3 Tough Choices 0

4 Who Owns America's Forests? 0

SC 11.2.1: (continued)

Exploring Environmental Issues: Focus on Risk

3	Chances Are....	0
4	Risk Assessment: Tools of the Trade	0
5	Communicating Risk	0
7	Decision Making	0
8	Taking Action: Reducing Risk	0
ST 1	Electromagnetic Fields	0
ST 3	Plastics, Risk/Benefit Analysis and Environmental Legislation	0

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	*
2	Source Reduction	0
3	Recycling and Economics	0
4	Composting	*
5	Waste-to-Energy	0
6	Landfills	0
7	Where Does Your Garbage Go	0
8	Success Stories	0

SC 11.2.2: Students use inquiry to conduct simple scientific investigations.

Exploring Environmental Issues: Focus on Forests

1	What's a Forest to You?	0
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Exploring Environmental Issues: Focus on Risk

3	Chances Are....	0
4	Risk Assessment: Tools of the Trade	0
5	Communicating Risk	0
8	Taking Action: Reducing Risk	0
ST 1	Electromagnetic Fields	0
ST 3	Plastics, Risk/Benefit Analysis and Environmental Legislation	0

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	0
3	Recycling and Economics	*
4	Composting	*
6	Landfills	0
7	Where Does Your Garbage Go	0
8	Success Stories	0

SC 11.2.3: Students clearly and accurately communicate the result of their own work as well as information from other sources.

Exploring Environmental Issues: Focus on Forests

1	What's a Forest to You?	0
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SC 11.2.3: (continued)

Exploring Environmental Issues: Focus on Risk

3	Chances Are....	0
4	Risk Assessment: Tools of the Trade	0
5	Communicating Risk	0
8	Taking Action: Reducing Risk	0
ST 1	Electromagnetic Fields	0

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	0
2	Source Reduction	0

SC 11.2.4: Students investigate the relationship between science and technology and the role of technological design in meeting human needs.

Exploring Environmental Issues: Focus on Forests

1	What's a Forest to You?	0
2	Case Study: Old-Growth Forests	0
8	Take Action	0

Exploring Environmental Issues: Focus on Risk

4	Risk Assessment: Tools of the Trade	0
5	Communicating Risk	0
6	Weighing the Options: A Look at Tradeoffs	0
7	Decision Making	0
ST 1	Electromagnetic Fields	*
ST 2	Chlorine: Looking at Trade-offs	*
ST 3	Plastics, Risk/Benefit Analysis and Environmental Legislation	*

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	0
2	Source Reduction	0
4	Composting	*
5	Waste-to-Energy	0
6	Landfills	0
8	Success Stories	0

SC 11.2.5: Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols and observe standard safety procedures.

Exploring Environmental Issues: Municipal Solid Waste

1	Introduction to MSW: The Waste Stream	0
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Exploring Environmental issues: Focus on Risk

ST 3	Plastics, Risk/Benefit Analysis and Environmental Legislation	0
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SC 3. HISTORY AND NATURE OF SCIENCE IN PERSONAL/SOCIAL DECISIONS:

Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions.

SC 11.3.1: Students examine the nature and history of science.

Exploring Environmental Issues: Focus on Forests

3 Tough Choices 0

Exploring Environmental Issues: Focus on Risk

5 Communicating Risk 0

Exploring Environmental Issues: In the Places We Live

3 Mapping Your Community through Time 0

Exploring Environmental Issues: Municipal Solid Waste

1 Introduction to MSW: The Waste Stream *

SC 11.3.2: Students examine how scientific information is used to make decisions.

Exploring Environmental Issues: Focus on Forests

3 Tough Choices 0

Exploring Environmental Issues: Focus on Risk

5 Communicating Risk 0

6 Weighing the Options: A Look at Tradeoffs 0

ST 2 Chlorine: Looking at Trade-offs 0

ST 3 Plastics, Risk/Benefit Analysis and Environmental Legislation 0

Exploring Environmental Issues: In the Places We Live

3 Mapping Your Community Through Time 0

5 Green Space 0

7 Far Reaching Decisions 0

8 Regional Community Issues: The Ogallala Aquifer *

Exploring Environmental Issues: Municipal Solid Waste

1 Introduction to MSW: The Waste Stream *

2 Source Reduction 0

3 Recycling and Economics 0

4 Composting 0

5 Waste-to-Energy *

8 Success Stories 0

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