



**Correlation of the National Science  
Education Standards to  
Project Learning Tree's PreK-8  
Environmental Education  
Activity Guide**



**Grades 5 - 8**



## **ACKNOWLEDGMENTS**

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## GUIDE TO USING THE CORRELATIONS

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Setting national education standards is part of the education reform movement that has been occurring across the country over the past decade and a half. As part of this reform movement, the National Science Education Standards, published by the National Research Council in 1996, were developed to provide a set of criteria against which we can measure the quality of science education. The purpose of *this* document is to provide educators with an easy reference guide as to how Project Learning Tree's activities for students in grades 5 through 8 correlate to the National Science Education Content Standards.

The document is divided into three parts:

### **! Part I of this document identifies which PLT activities help teach a particular National Science Education Content Standard.**

Each national science education content standard is listed according to its fundamental concepts in column one. The PLT conceptual framework theme is listed in column two, and the specific activities (within that theme) which support the corresponding standard are listed in column three.

At the bottom of each page you will find a key to the symbols that appear after each activity title. A filled in circle (●) indicates that the activity teaches the concept and that the concept is the main focus of the activity. A square with a dot in the middle (■) indicates that the activity includes some teaching of the concept, reinforces the concept, and that the concept is part of the focus of the activity. And an open circle (○) indicates that the activity reinforces, supports, or addresses the concept and that it connects the concept to an environmental issue.

You can use **Part I** to identify individual PLT activities that support a specific standard. Or, you can use this section to identify a group of activities that can be used together to cover a particular standard.

### **! Part II of this document identifies which of the National Science Education Content Standards are covered by each PLT activity.**

The title of each PLT activity is listed in column one, followed by the correlation symbol in column two (see above for a description of the correlation symbols). The national science education standards that are covered by the activity are listed in column three.

You can use **Part II** if you have a particular PLT activity in mind and you want to know which of the national science education standards it supports.

**! Part III of this document identifies how the National Science Education Content Standards correlate to PLT's conceptual framework.**

All of PLT's activities are based on the PLT Conceptual Framework. Therefore, **Part III** of the document has been included to illustrate the parallels between the National Science Education Standards and the PLT Conceptual Framework. Column one lists the standard and its fundamental concepts. Column two indicates the PLT conceptual framework theme, and column three lists the PLT concepts within each theme that correspond to the standard.

We hope you find this document useful and we welcome any comments you may have.

Sincerely,

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**PART I:**  
**CORRELATION OF PROJECT LEARNING TREE'S PREK-8 ENVIRONMENTAL EDUCATION**  
**ACTIVITY GUIDE TO THE NATIONAL SCIENCE EDUCATION CONTENT STANDARDS**

**National Science Education  
Standards (Content, 5 - 8):  
Unifying Concepts and Processes**

**PLT Conceptual  
Framework Theme**

**PLT Activity # and Title**

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Systems, Order, and Organization

Interrelationships

- 22 - Trees as Habitats ■
- 23 - The Fallen Log ■
- 24 - Nature's Recyclers ■
- 26 - Dynamic Duos ●
- 27 - Every Tree for Itself ■
- 28 - Air Plants ■
- 29 - Rain Reasons ○

Systems

- 41 - How Plants Grow ●
- 42 - Sunlight and Shades of Green ●
- 43 - Have Seeds, Will Travel ●
- 44 - Water Wonders ●
- 45 - Web of Life ●
- 49 - Tropical Treehouse ○

Structure & Scale

- 63 - Tree Factory ■
- 64 - Looking at Leaves ■
- 68 - Name That Tree ●
- 70 - Soil Stories ○

Patterns of Change

- 78 - Signs of Fall ○
- 80 - Nothing Succeeds Like Succession ■
- 86 - Our Changing World ■
- 94 - By the Rivers of Babylon○

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Evidence, Models, and Explanation

Diversity

- 14 - Renewable or Not? ■
- 19 - Viewpoints on the Line ■

Interrelationships

- 21 - Adopt a Tree ■
- 22 - Trees as Habitats ■
- 24 - Nature's Recyclers ■
- 25 - Birds and Worms ■
- 27 - Every Tree for Itself ■
- 28 - Air Plants ■
- 29 - Rain Reasons ■
- 37 - Reduce, Reuse, Recycle ■
- 38 - Every Drop Counts ■

- 
- teaches the concept; main focus of the activity
  - includes some teaching of the concept; reinforces the concept; concept is part of the focus of the activity
  - reinforces, supports, or addresses the concept; connects concept to an environmental issue

**National Science Education  
Standards (Content, 5 - 8):  
*Unifying Concepts and Processes***

**PLT Conceptual  
Framework Theme**

**PLT Activity # and Title**

Evidence, Models, and Explanation  
(Cont.)

Systems

41- How Plants Grow ■  
42- Sunlight and Shades of Green ■  
44 - Water Works ■  
48 - Field, Forest, and Stream ■  
50 - 400-Acre Wood ■  
60 - Publicize It!○

Structure & Scale

65 - Bursting Buds ■  
70 - Soil Stories ■

Patterns of Change

76 - Tree Cookies ■  
78 - Signs of Fall ■  
79 - Tree Lifecycle ■  
80 - Nothing Succeeds Like  
Succession ■  
85 - In the Driver's Seat ■  
88 - Life on the Edge ■

Constancy, Change, and Measurement

Diversity

11 - Can it Be Real?○  
12 – Invasive Species ●

Interrelationships

29 - Rain Reasons ○  
37 - Reduce, Reuse, Recycle■  
38 - Every Drop Counts ●  
40 - Then and Now ■

Systems

41 - How Plants Grow ■  
48 - Field, Forest, and Stream ■

Structure & Scale

65 - Bursting Buds ■  
66 - Germinating Giants ■  
67 - How Big Is Your Tree? ●  
70 - Soil Stories ■

- teaches the concept; main focus of the activity
- includes some teaching of the concept; reinforces the concept; concept is part of the focus of the activity
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**National Science Education  
Standards (Content, 5 - 8):  
Unifying Concepts and Processes**

**PLT Conceptual  
Framework Theme**

**PLT Activity # and Title**

Constancy, Change, and Measurement (Cont.)

Patterns of Change

- 95 - Did You Notice ●
- 76 - Tree Cookies ●
- 78 - Signs of Fall ■
- 79 - Tree Lifecycle ●
- 80 - Nothing Succeeds Like Succession ●
- 84 - The Global Climate ○
- 85 - In the Driver's Seat ■
- 86 - Our Changing World ■
- 88 - Life on the Edge ●

Evolution and Equilibrium

Diversity

- 11- Can it Be Real? ■

Patterns of Change

- 80- Nothing Succeeds like Succession ●
- 86 - Our Changing World ■
- 94 - Where Are the Cedars of Lebanon ■

Form and Function

Diversity

- 10 - Charting Diversity ■
- 11 - Can it Be Real?●

Interrelationships

- 25 - Birds and Worms ○
- 30 - Three Cheers for Trees ■
- 31 - Plant a Tree ○

Systems

- 43 - Have Seeds, Will Travel ■
- 52 - A Look at Aluminum ●
- 53 - On the Move ■

Structure & Scale

- 61 - The Closer You Look ●
- 63 - Tree Factory ●
- 70 - Soil Stories ■
- 71 - Watch on Wetlands ■

Patterns of Change

- 75 - Tipi Talk ○
- 83 - A Peek at Packaging ○

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**National Science Education  
Standards (Content, 5 - 8):  
Standard A: Science as Inquiry**

**PLT Conceptual  
Framework Theme**

**PLT Activity # and Title**

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Abilities Necessary to Do Scientific  
Inquiry

Understanding About Scientific Inquiry

These standards are integrated *throughout* the PLT Activity Guide.  
Examples include: # 9 - Planet Diversity; # 44 - Water Wonders; and  
# 70 - Soil Stories

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**National Science Education  
Standards (Content, 5 - 8):  
Standard B: Physical Science**

**PLT Conceptual  
Framework Theme**

**PLT Activity # and Title**

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Properties and Changes of Properties in  
Matter

Diversity	13 - We All Need Trees ○
Systems	44 - Water Wonders ■ 48 - Field, Forest, and Stream○
Structure & Scale	72 - Air We Breathe ■
Patterns of Change	85 - In the Driver's Seat ○

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Motion and Forces

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Transfer of Energy

Diversity	18 - Tale of the Sun ○
Interrelationships	24 - Nature's Recyclers ■ 27 - Every Tree for Itself ○ 28 - Air Plants ○ 29 - Rain Reasons ○ 37 - Reduce, Reuse, Recycle○ 39 - Energy Sleuths ■
Systems	41 - How Plants Grow ■ 42 - Sunlight and Shades of Green ■ 48 - Field, Forest, and Stream○
Structure & Scale	73 - Waste Watchers○
Patterns of Change	78 - Signs of Fall ■ 82 - Resource-Go-Round ■

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**National Science Education  
Standards (Content, 5 - 8):  
Standard C: Life Science**

	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
Structure and Function in Living Systems		
	Diversity	2 - Get in Touch with Trees ○ 3 - Peppermint Beetle ○ 4 - Sounds Around ○ 10 - Charting Diversity ■ 12 – Invasive Species ●
	Interrelationships	25 - Birds and Worms ■ 28 - Air Plants ○
	Structure & Scale	61 - The Closer You Look ● 63 - Tree Factory ■ 65 - Bursting Buds ● 72 - Air We Breathe ○
Reproduction and Heredity		
	Systems	43 - Have Seeds Will Travel ■
	Structure & Scale	66 - Germinating Giants ○
Regulation and Behavior		
	Diversity	10 - Charting Diversity ○ 11 - Can it Be Real? ■
	Systems	46 - School Yard Safari ○
	Patterns of Change	76 - Tree Cookies ■ 77 - Trees in Trouble ■ 78 - Signs of Fall ● 79 - Trees Lifecycle ● 80 - Nothing Succeeds Like Succession ■ 85 - In the Driver's Seat ○

**National Science Education  
Standards (Content, 5 - 8):**

	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
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*Standard C: Life Science*

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Populations and Ecosystems

Diversity	7 - Habitat Pen Pals ● 8 - The Forest of S.t. Shrew ■ 9 - Planet Diversity ■ 12 - Invasive Species ■ 14 - Renewable or Not? ○ 16 - Pass the Plants, Please ○ 17 - People of the Forest ○ 18 - Tale of the Sun ○
Interrelationships	21 - Adopt a Tree ○ 22 - Trees as Habitats ○ 23 - The Fallen Log ● 24 - Nature's Recyclers ● 26 - Dynamic Duos ● 27 - Every Tree for Itself ■ 28 - Air Plants ■ 29 - Rain Reasons ● 39 - Energy Sleuths ○
Systems	41 - How Plants Grow ○ 42 - Sunlight and Shades of Green ● 44 - Water Wonders ■ 45 - Web of Life ● 46 - School Yard Safari ○ 47 - Are Vacant Lots Vacant? ■ 48 - Field, Forest, and Stream ● 49 - Tropical Treehouse ■
Structure & Scale	70 - Soil Stories ■ 71 - Watch on Wetlands ■
Patterns of Change	81 - Living with Fire ○ 90 - Native Ways ○ 94 - Where Are the Cedars of Lebanon? ○

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**National Science Education  
Standards (Content, 5 - 8):  
Standard C: Life Science**

<b>National Science Education Standards (Content, 5 - 8): Standard C: Life Science</b>	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
Diversity and Adaptations of Organisms	Diversity	7 - Habitat Pen Pals ■ 8 - The Forest of S.T. Shrew ■ 9 - Planet Diversity ● 10 - Charting Diversity ● 11 - Can it Be Real? ● 12 - Invasive Species ●
	Systems	47 - Are Vacant Lots Vacant? ○
	Patterns of Change	76 - Tree Cookies ■ 77 - Trees in Trouble ● 78 - Signs of Fall ■ 80 - Nothing Succeeds Like Succession ● 86 - Our Changing World ● 88 - Life on the Edge ○

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**National Science Education Standards (Content, 5 - 8):  
Standard D: Earth and Space**

**PLT Conceptual Framework Theme**

**PLT Activity # and Title**

Structure of the Earth System

Interrelationships	23 - The Fallen Log ■ 24 - Nature's Recyclers ■ 28 - Air Plants ○ 29 - Rain Reasons ■ 38 - Every Drop Counts ○
Systems	44 - Water Wonders ● 48 - Field, Forest, and Stream○
Structure & Scale	70 - Soil Stories ● 71 - Watch on Wetlands ■ 72 - Air We Breathe ○
Patterns of Change	80 - Nothing Succeeds like Succession ○ 84 - The Global Climate ● 85 - In the Driver's Seat ○ 86 - Our changing World ■

Earth's History

Patterns of Change	80 - Nothing Succeeds like Succession ○
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Earth in the Solar System

Systems	41 - How Plants Grow ○ 42 - Sunlight and Shades of Green ○
Patterns of Change	78 - Signs of Fall ○

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**National Science Education Standards (Content, 5 - 8):**  
*Standard E: Science & Technology*

**PLT Conceptual Framework Theme**

**PLT Activity # and Title**

Abilities of Technology Design

Diversity

13 - We All Need Trees ■  
14 - Renewable or Not ■

Systems

51 - Make Your Own Paper ■  
52 - A Look at Aluminum●  
53 - On the Move ■  
55- Planning the Ideal Community ■

Understanding about Science and Technology

Diversity

14- Renewable or Not?○  
15- A Few of My Favorite Things ■

Interrelationships

33 - Forest Consequences ■  
34 - Who Works in this Forest? ■  
35 - Loving it Too Much ○  
36 - Pollution Search ○  
37 - Reduce, Reuse, Recycle ○  
38 - Every Drop Counts ■  
39 - Energy Sleuths ■

Systems

50 - 400 Acre Wood ■  
53 - On the Move ■  
55- Planning the Ideal Community ■

Structure & Scale

67 - How Big is Your Tree ○  
72 - Air We Breathe ○  
73 - Waste Watchers ●

Patterns

82 - Resource-Go-Round ○  
83 - A Peek at Packaging ●  
85 - In the Driver's Seat ■  
88 - Life on the Edge ○  
93 - Paper Civilizations ■  
94 - By the Rivers of Babylon ■

**National Science Education Standards (Content, 5 - 8):**

**PLT Conceptual Framework Theme**

**PLT Activity # and Title**

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**Standard F: Science in Personal and Social Perspectives**

Personal Health

Diversity	4 - Sounds Around ○ 16 - Pass the Plants, Please ○
Interrelationships	28 - Air Plants ●
Structure & Scale	72 - Air We Breath ●
Patterns of Change	77 - Trees in Trouble ○ 85 - In the Driver's Seat ●

Populations, Resources, and Environments

Diversity	12 - Invasive Species ■ 14 - Renewable or Not? ○
Interrelationships	27 - Every Tree for Itself ○ 35 - Loving it Too Much ■
Patterns of Change	84 - The Global Climate ■ 86 - Our Changing World ■ 92 - a Look at Lifestyles ■ 94 - By the Rivers of Babylon■

Natural Hazards

Diversity	13 - We All Need Trees ○ 14 - Renewable or Not?○ 15 - A Few of my Favorite Things ○
Interrelationships	36 - Pollution Search ○ 37 - Reduce, Reuse, Recycle ○
Patterns of Change	76 - Tree Cookies ○ 81 - Living with Fire ●

**National Science Education Standards (Content, 5 - 8):**

**Standard F: Science in Personal and Social Perspectives**

**PLT Conceptual Framework Theme**

**PLT Activity # and Title**

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## Risks and Benefits

Diversity	19 - Viewpoints on the Line ●
Interrelationships	30 - Three Cheers for Trees ○ 31 - Plant a Tree ○ 32 - A Forest of Many Uses ○ 33 - Forest Consequences ●
Interrelationships (Cont.)	35 - Loving it Too Much ● 36 - Pollution Search ○ 37 - Reduce, Reuse, Recycle ■ 38 - Every Drop Counts ■ 39 - Energy Sleuths ●
Systems	49 - Tropical Treehouse ○ 50 - 400-Acre Wood ● 52 - A Look at Aluminum ■ 53 - Planning the Ideal Community ○ 54 - I'd Like to Visit a Place Where... ● 55 - Planning the Ideal Community ● 56 - We Can Work It Out ● 59 - Power of Print ● 60 - Publicize It! ○
Structure & Scale	69 - Forest for the Trees ■ 71 - Watch on Wetlands ■ 73 - Waste Watchers ■
Patterns of Change	82 - Resource-Go-Round ○ 84 - The Global Climate ■ 83 - A Peek at Packaging ● 88 - Life on the Edge ■ 92 - A Look at Lifestyles ■ 96 - Improve Your Place ○

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**National Science Education  
Standards (Content, 5 -8):**

***Standard F: Science in Personal and  
Social Perspectives***

	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
Science and Technology in Society		
	Diversity	17 - People of the Forest ○
	Interrelationships	34 - Who Works in this Forest? ● 39 - Energy Sleuths ■
	Systems	52 - A Look at Aluminum ○ 53 - On the Move ○ 57 - Democracy in Action ■ 58 - There Ought to Be a Law ■
	Structure & Scale	73 - Waste Watchers ○
	Patterns of Change	84 - The Global Climate ■ 86 - Our Changing World ■ 89 - Trees for Many Reasons ○ 91 - In the Good Old Days ■ 92 - A Look at Lifestyles ■ 94 - Where Are the Cedars of Lebanon? ■

**National Science Education  
Standards (Content, 5 - 8):**

***Standard G: History and Nature of  
Science***

	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
Science as Human Endeavor		
	Diversity	17 - People of the Forest ○
	Interrelationships	34 - Who Works in this Forest? ●
	Systems	50 - 400-Acre Wood ■
	Patterns of Change	91 - In the Good Old Days ● 93 - Paper Civilizations ■

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**National Science Education  
Standards (Content, 5 - 8):  
Standard G: History and Nature of  
Science**

	<b>PLT Conceptual Framework Theme</b>	<b>PLT Activity # and Title</b>
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Nature of Science		
	Diversity	9 - Planet Diversity ■ 19 - Viewpoints on the Line ■
	Interrelationships	33 - Forest Consequences ■ 39 - Energy Sleuths ○
	Structure & Scale	71 - Watch on Wetlands ○
	Patterns of Change	85 - In the Driver's Seat ○
<hr/>		
History of Science		
	Diversity	17 - People of the Forest ●
	Interrelationships	40 - Then and Now ○
	Structure & Scale	75 - Tipi Talk ○
	Patterns of Change	90 - Native Ways ● 91 - In the Good Old Days ● 92 - A Look at Lifestyles ● 94 - By the Rivers of Babylon●

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**PART II:**  
**CORRELATION OF THE NATIONAL SCIENCE EDUCATION CONTENT STANDARDS TO  
PROJECT LEARNING TREE'S PREK-8 ENVIRONMENTAL EDUCATION ACTIVITY GUIDE**

<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5-8):</b>
1 - The Shape of Things		
2 - Get in Touch with Trees	○	Standard C: Life Science: Structure and Function in Living Systems
3 - Peppermint Beetle	○	Standard C: Life Science: Structure and Function in Living Systems
4 - Sounds Around	○	Standard C: Life Science: Structure and Function in Living Systems
	○	Standard F: Science in Personal and Social Perspectives: Personal Health
5 - Poet-Tree		
6 - Picture this!		
7 - Habitat Pen Pals	●	Standard C: Life Science: Populations and Ecosystems
	■	Diversity and Adaptations of Organisms
8 - The Forest of S.T. Shrew	■	Standard C: Life Science: Populations and Ecosystems
	■	Diversity and Adaptations of Organisms
9 - Planet Diversity	■	Standard C: Life Science: Populations and Ecosystems
	●	Diversity and Adaptations of Organisms
	■	Standard G: History and Nature of Science: Nature of Science
10 - Charting Diversity	■	Unifying Concepts: Form and Function
	■	Standard C: Life Science: Structure and Function in Living Systems
	●	Regulation and Behavior
	●	Diversity and Adaptations of Organisms

- 
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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
11 -Can it Be Real?	○ ■ ● ■ ●	Unifying Concepts and Processes: Constancy, Change, and Measurement  Evolution and Equilibrium  Form and Function  Standard C: Life Science: Regulation and Behavior  Diversity and Adaptations of Organisms
12 - Invasive Species	●  ● ■ ● ■	Unifying Concepts and Processes: Constancy, Change and Measurement  Standard C: Structure and Function in Life Science  Populations & Ecosystems Diversity  Diversity and Adaptations of Organisms  Standard F: Population Resources& Environmental Diversity
13 - We All Need Trees	●  ○ ■	Standard B: Physical Science: Properties and Changes of Properties in Matter  Standard F: Science in Personal and Social Perspectives: Natural Hazards  Standard E: Science & Technology: Abilities of Technological Design
14 - Renewable or Not?	■  ○  ○  ○  ○	Unifying Concepts and Processes: Evidence, Models and Explanation  Standard C: Life Science: Populations and Ecosystems  Standard E: Science & Technology: Understanding about Science and Technology  Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments  Standard F: Science in Personal and Social Perspectives: Natural Hazards

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
15 - A Few of My Favorite Things	■	Standard E: Science & Technology: Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Natural Hazards
16 - Pass the Plants, Please	○	Standard C: Life Science: Populations and Ecosystems
	○	Standard F: Science in Personal and Social Perspectives: Personal Health
17 - People of the Forest	○	Standard C: Life Science: Populations and Ecosystems
	○	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
	○	Standard G: History and Nature of Science: Science as Human Endeavor
	●	History of Science
18 - Tale of the Sun	●	Standard B: Physical Science: Transfer of Energy
	○	Standard C: Life Science: Populations and Ecosystems
19 -Viewpoints on the Line	■	Unifying Concepts and Processes: Evidence, Models ,and Explanation
	●	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	■	Standard G: History and Nature of Science: Nature of Science
20 -Environmental Exchange Box		
21 - Adopt-a-Tree	○	Unifying Concepts and Processes: Evidence, Models ,and Explanation
	○	Standard C: Life Science: Populations and Ecosystems

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
22 - Trees as Habitats	■	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	○	Standard C: Life Science: Populations and Ecosystems
23 -The Fallen Log	■	Unifying Concepts and Processes: Systems, Order, and Organization
	●	Standard C: Life Science: Populations and Ecosystems
	○	Standard D: Earth and Space: Structure of the Earth System
24 -Nature’s Recyclers	■	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Evidence, Models, and Explanation
	■	Standard B: Physical Science: Transfer of Energy
	●	Standard C: Life Science: Populations and Ecosystems
	■	Standard D: Earth and Space: Structure of the Earth System
25 - Birds and Worms	■	Unifying Concepts and Processes: Evidence, Models and Explanation
	○	Form and Function
	■	Standard C: Life Science: Structure and Function in Living Systems
26 - Dynamic Duos	●	Unifying Concepts and Processes: Systems, Order, and Organization
	●	Standard C: Life Science: Populations and Ecosystems
27 - Every Tree for Itself	■	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Evidence, Models, and Explanation
	○	Standard B: Physical Science: Transfer of Energy
	■	Standard C: Life Science: Populations and Ecosystems
	○	Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5-8):</b>
28 - Air Plants	<ul style="list-style-type: none"> <li>■</li> <li>■</li> <li>○</li> <li>○</li> <li>■</li> <li>○</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>Unifying Concepts and Processes: Systems, Order, and Organization</li> <li style="padding-left: 100px;">Evidence, Models, and Explanation</li> <li>Standard B: Physical Science: Transfer of Energy</li> <li>Standard C: Life Science: Structure and Function in Living Systems</li> <li style="padding-left: 100px;">Populations and Ecosystems</li> <li>Standard D: Earth and Space: Structure of the Earth System</li> <li>Standard F: Science in Personal and Social Perspectives: Personal Health</li> </ul>
29 - Rain Reasons	<ul style="list-style-type: none"> <li>○</li> <li>■</li> <li>○</li> <li>○</li> <li>●</li> <li>■</li> </ul>	<ul style="list-style-type: none"> <li>Unifying Concepts and Processes: Systems, Order, and Organization</li> <li style="padding-left: 100px;">Evidence, Models, and Explanation</li> <li style="padding-left: 100px;">Constancy, Change, and Measurement</li> <li>Standard B: Physical Science: Transfer of Energy</li> <li>Standard C: Life Science: Populations and Ecosystems</li> <li>Standard D: Earth and Space Science: Structure of the Earth System</li> </ul>
30 - Three Cheers for Trees	<ul style="list-style-type: none"> <li>■</li> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>Unifying Concepts and Processes: Form and Function</li> <li>Standard F: Science in Personal and Social Perspectives: Risks and Benefits</li> </ul>
31 - Plant a Tree	<ul style="list-style-type: none"> <li>○</li> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>Unifying Concepts and Processes: Form and Function</li> <li>Standard F: Science in Personal and Social Perspectives: Risks and Benefits</li> </ul>
32 - A Forest of Many Uses	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>Standard F: Science in Personal and Social Perspectives: Risks and Benefits</li> </ul>
33 - Forest Consequences	<ul style="list-style-type: none"> <li>■</li> <li>●</li> <li>■</li> </ul>	<ul style="list-style-type: none"> <li>Standard E: Science &amp; Technology: Understanding about Science and Technology</li> <li>Standard F: Science in Personal and Social Perspectives: Risks and Benefits</li> <li>Standard G: History and Nature of Science: Nature of Science</li> </ul>
<b>PLT Activity # and Title</b>	<b>Correlation</b>	

- teaches the concept; main focus of the activity
- includes some teaching of the concept; reinforces the concept; concept is part of the focus of the activity
- reinforces, supports, or addresses the concept; connects concept to an environmental issue

	Symbol	National Science Education Standards (Content, 5- 8):
34 - Who Works in this Forest?	■	Standard E: Science & Technology: Understanding about Science and Technology
	●	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
	●	Standard G: History and Nature of Science: Science as Human Endeavor
35 - Loving it Too Much	○	Standard E: Science & Technology: Understanding about Science and Technology
	■	Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments
	●	Risks and Benefits
36 - Pollution Search	○	Standard E: Science & Technology: Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Natural Hazards
	○	Risks and Benefits
37 - Reduce, Reuse, Recycle	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	○	Standard B: Physical Science: Transfer of Energy
	○	Standard E: Science & Technology: Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Natural Hazards
	■	Risks and Benefits

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
38 - Every Drop Counts	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	●	Constancy, Change, and Measurement
	○	Standard D: Earth and Space: Structure of the Earth Systems
	■	Standard E: Science & Technology: Understanding about Science and Technology
	■	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
39 - Energy Sleuths	■	Standard B: Physical Science: Transfer of Energy
	○	Standard C: Life Science: Populations and Ecosystems
	■	Standard E: Science & Technology: Understanding about Science and Technology
39 - Energy Sleuths, cont.	●	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	■	Science and Technology in Society
	○	Standard G: History and Nature of Science: Nature of Science
40 - Then and Now	■	Unifying Concepts and Processes: Constancy, Change, and Measurement
	○	Standard G: History and Nature of Science: Nature of Science
41 - How Plants Grow	●	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	■	Standard B: Physical Science: Transfer of Energy
	○	Standard C: Life Science: Populations and Ecosystems
	○	Standard D: Earth and Space: Earth in the Solar System

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
42 - Sunlight and Shades of Green	●	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Evidence, Models, and Explanation
	■	Standard B: Physical Science: Transfer of Energy
	●	Standard C: Life Science: Populations and Ecosystems
	○	Standard D: Earth and Space: Earth in the Solar System
43 - Have Seeds, Will Travel	●	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Form and Function
44 - Water Wonders	●	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Standard B: Physical Science: Properties and Changes of Properties in Matter
	■	Standard C: Life Science: Populations and Ecosystems
	●	Standard D: Earth and Space Science: Structure of the Earth System
45 - Web of Life	●	Unifying Concepts and Processes: Systems, Order, and Organization
	●	Standard C: Life Science: Populations and Ecosystems
46 - School Yard Safari	○	Standard C: Life Science: Regulation and Behavior
	○	Populations and Ecosystems
47 - Are Vacant Lots Vacant?	■	Standard C: Life Science: Populations and Ecosystems
	○	Diversity and Adaptations of Organisms

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
48 - Field, Forest, and Stream	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	○	Standard B: Physical Science: Properties and Changes of Properties in Matter
	○	Transfer of Energy
	●	Standard C: Life Science: Populations and Ecosystems
	○	Standard D: Earth and Space: Structure of the Earth System
49 - Tropical Treehouse	○	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Standard C: Life Science: Populations and Ecosystems
	○	Standard F: Standard F: Science in Personal and Social Perspectives: Risks and Benefits
50 - 400-acre Wood	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	■	Standard E: Science & Technology: Understanding about Science and Technology
	●	Standard F: Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	■	Standard G: History and Nature of Science: Science as Human Endeavor
51 - Make Your Own Paper	■	Standard E: Science & Technology: Abilities of Technological Design
52 - A Look at Aluminum	●	Unifying Concepts and Processes: Form and Function
	●	Standard E: Science & Technology: Abilities of Technological Design
	■	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	○	Science and Technology in Society

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
53 - On the Move	■	Unifying Concepts and Processes: Form and Function
	■	Standard E: Science & Technology: Abilities of Technological Design
	■	Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
54 - I'd like to Visit a Place Where...	●	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
55 - Planning the Ideal Community	■	Standard E: Science & Technology: Abilities of Technological Design
	■	Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
56 - We Can Work it out		
57 - Democracy in Action	■	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
58 - There Ought to Be a Law	■	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
59 - Power of Print	●	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
60 - Publicize It!	○	Unifying Concepts and Processes: Evidence, Models and Explanation
	○	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
61 - The Closer You Look	●	Unifying Concepts and Processes: Form and Function
	●	Standard C: Life Science: Structure and Function in Living Systems

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
<hr/>		
62 - To Be a Tree		
<hr/>		
63 - Tree Factory	<ul style="list-style-type: none"> <li>■</li> <li>●</li> <li>■</li> </ul>	Unifying Concepts and Processes: Systems, Order, and Organization Form and Function Standard C: Life Science: Structure and Function in Living Systems
<hr/>		
64 - Looking at Leaves		
<hr/>		
65 - Bursting Buds	<ul style="list-style-type: none"> <li>■</li> <li>■</li> <li>●</li> </ul>	Unifying Concepts and Processes: Evidence, Models and Explanation Constancy, Change and Measurement Standard C: Life Science: Structure and Function in Living Systems
<hr/>		
66 - Germinating Giants	<ul style="list-style-type: none"> <li>■</li> <li>○</li> </ul>	Unifying Concepts and Processes: Constancy, Change and Measurement Standard C: Life Science: Reproduction and Heredity
<hr/>		
67 - How Big Is Your Tree?	<ul style="list-style-type: none"> <li>●</li> <li>○</li> </ul>	Unifying Concepts and Processes: Constancy, Change, and Measurement Standard E: Science and Technology: Understandings about Science and Technology
<hr/>		
68 - Name That Tree	<ul style="list-style-type: none"> <li>●</li> </ul>	Unifying Concepts and Processes: Systems, Order, and Organization
<hr/>		
69 - Forest for the Trees	<ul style="list-style-type: none"> <li>■</li> </ul>	Standard F: Science in Personal and Social Perspectives: Risks and Benefits

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
70 - Soil Stories	○	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	■	Form and Function
	■	Standard C: Life Science: Populations and Ecosystems
	●	Standard D: Earth and Space: Structure of the Earth System
71 - Watch on Wetlands	○	Unifying Concepts and Processes: Form and Function
	■	Standard C: Life Sciences: Populations and Ecosystems
	■	Standard D: Earth and Space: Structure of the Earth System
	■	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	○	Standard G: History and Nature of Science: Nature of Science
72 -Air We Breathe	■	Standard B: Physical Science: Properties and Changes of Properties in Matter
	○	Standard C: Life Science: Structure and Function in Living Systems
	○	Standard D: Earth and Space: Structure of the Earth System
	○	Standard E: Science & Technology: Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Personal Health
73 - Waste Watchers	■	Standard B: Physical Science: Transfer of Energy
	●	Standard E: Science & Technology: Understanding about Science and Technology
	■	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
	○	Science and Technology in Society

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
<hr/>		
74 - People, Places, Things		
<hr/>		
75 - Tipi Talk	○	Unifying Concepts and Processes: Form and Function
	○	Standard G: History and Nature of Science: History of Science
<hr/>		
76 - Tree Cookies	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	●	Constancy, Change, and Measurement
	■	Standard C: Life Science: Regulation and Behavior
	■	Diversity and Adaptation of Organisms
	○	Standard F: Science in Personal and Social Perspectives: Natural hazards
<hr/>		
77 - Trees in Trouble	■	Standard C: Life Science: Regulation and Behavior
	●	Diversity and Adaptation of Organisms
	○	Standard F: Science in Personal and Social Perspectives: Personal Health
<hr/>		
78 - Signs of Fall	○	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	■	Standard B: Physical Science: Transfer of Energy
	●	Standard C: Life Science: Regulation and Behavior
	○	Standard D: Earth and Space Science: Earth in the Solar System
<hr/>		
79 -Tree Lifecycle	■	Evidence, Models and Explanation
	●	Constancy, Change and Measurement

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
80 - Nothing Succeeds like Succession	▣	Unifying Concepts and Processes: Systems, Order, and Organization
	▣	Evidence, Models, and Explanation
	●	Constancy, Change, and Measurement
	●	Evolution and Equilibrium
	▣	Standard C: Life Science: Regulation and Behavior
	●	Diversity and Adaptation of Organisms
	○	Standard D: Earth and Space: Structure of the Earth System
	○	Earth's History
81 - Living with Fire	○	Standard C: Life Science: Populations and Ecosystems
	●	Standard F: Science in Personal and Social Perspectives: Natural Hazards
82 - Resource-go-round	▣	Standard B: Physical Science: Transfer of Energy
	○	Standard E: Science & Technology: Understanding about Science and Technology
	○	Standard F: Science in Personal and Social Perspectives: Risks and Benefits
83 - A Peek at Packaging	○	Unifying Concepts and Processes: Form and Function
	○	Standard E: Science & Technology: Understanding about Science and Technology
	●	Standard F: Science in Personal and Social Perspectives: Risks and Benefits

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
85 - In the Driver's Seat	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	■	Constancy, Change, and Measurement
	○	Standard B: Physical Science: Properties and Changes of Properties in Matter
	○	Standard C: Life Science: Regulation and Behavior
	○	Standard D: Earth and Space: Structure of the Earth System
	■	Standard E: Science & Technology: Understanding about Science and Technology
	●	Standard F: Science in Personal and Social Perspectives: Personal Health
	○	Standard G: History and Nature of Science: Nature of Science
86 - Our Changing World	■	Unifying Concepts and Processes: Systems, Order, and Organization
	■	Constancy, Change, and Measurement
	■	Unifying Concepts and Processes: Evolution and Equilibrium
	●	Standard C: Life Science: Diversity and Adaptation of Organisms
	■	Standard D: Earth and Space Science: Structure of the Earth System
	■	Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments
	■	Science and Technology in Society
87 - Earth Manners		
88 - Life on the Edge	■	Unifying Concepts and Processes: Evidence, Models, and Explanation
	●	Constancy, Change, and Measurement
	○	Standard C: Life Science: Diversity and Adaptation of Organisms
	○	Standard E: Understanding about Science and Technology
	■	Standard F: Science in Personal and Social Perspectives: Risks and Benefits

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<b>PLT Activity # and Title</b>	<b>Correlation Symbol</b>	<b>National Science Education Standards (Content, 5- 8):</b>
89 - Trees for Many Reasons	○	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society
90 - Native Ways	○ ●	Standard C: Life Science: Populations and Ecosystems Standard G: History and Nature of Science: History of Science
91 - In the Good Old Days	■ ● ●	Standard F: Science in Personal and Social Perspectives: Science and Technology in Society Standard G: History and Nature of Science: Science as Human Endeavor Standard G: History and Nature of Science: History of Science
92 - A Look at Lifestyles	■ ■ ■ ●	Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments Risks and Benefits Science and Technology in Society Standard G: History and Nature of Science: History of Science
93 - Paper Civilization	■ ■	Standard E: Science & Technology: Understanding about Science and Technology Standard G: History and Nature of Science: Science as Human Endeavor

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PLT Activity # and Title	Correlation Symbol	National Science Education Standards (Content, 5- 8):
94 - By the Rivers of Babylon	<ul style="list-style-type: none"> <li>○</li> <li>■</li> <li>○</li> <li>○</li> <li>■</li> <li>■</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>Unifying Concepts and Processes: Systems, Order, and Organization</li> <li style="padding-left: 150px;">Evolution and Equilibrium</li> <li>Standard C: Life Science: Populations and Ecosystems</li> <li>Standard E: Science &amp; Technology: Understanding about Science and Technology</li> <li>Standard F: Science in Personal and Social Perspectives: Populations, Resources, and Environments</li> <li style="padding-left: 150px;">Science and Technology in Society</li> <li>Standard G: History and Nature of Science: History of Science</li> </ul>
95 - Did You Notice?	●	Unifying Concepts and Processes: Change ,Constancy, and Measurement
96 - Improve Your Place	○	Standard F: Science in Personal and Social Perspectives: Risks and Benefits

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**PART III:**  
**CORRELATION BETWEEN THE NATIONAL SCIENCE EDUCATION CONTENT STANDARDS AND**  
**PROJECT LEARNING TREE'S CONCEPTUAL FRAMEWORK**

## Correlation Between the National Science Education Standards and PLT's Conceptual Framework

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept	
UNIFYING CONCEPTS AND PROCESSES:  . Systems, Order, and Organization  . Evidence, Models, and Explanation  . Change, Constancy, and Measurement  . Evolution and Equilibrium  . Form and Function	Diversity	1.1	Biological diversity results from the interaction of living and nonliving environmental components such as air, water, climate, and geologic features.
		1.2	Forests, as well as other ecosystems, contain numerous habitats that support diverse populations of organisms.
		1.3	The Earth's atmosphere, water, soil, climate, and geology vary from region to region, thus creating a wide diversity of biological communities.
		3.2	Humans throughout the world create differing social, cultural, and economic systems and organizations to help them meet their physical and spiritual needs.
	Interrelationships	3.4	Natural beauty, as experienced in forests and other habitats, enhances the quality of human life by providing artistic and spiritual inspiration, as well as recreational and intellectual opportunities.
		4.2	Altering the environment affects all life forms, including humans, and the interrelationships that link them.
		4.3	Organisms adapt to changes in the environment according to the genetic and behavioral capacity.
		5.2	While technological advances decrease the incidence of disease and death, the ever-increasing world population is placing heavy demands on the finite resources of the Earth.
		6.1	Human societies and cultures throughout the world interact with each other and affect the natural systems upon which they depend.
		6.2	The quantity and quality of resources and their use, or misuse, by humans affects the standard of living of societies.
	Systems	7.1	In biological systems, energy flows and materials continually cycle in predictable and measurable patterns.
		7.2	Plant and animal populations exhibit interrelated cycles of growth and decline.
		7.4	Ecosystems possess measurable indicators of environmental health.
8.1		The application of scientific knowledge and technological systems can have positive and negative effects on the environment.	

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
UNIFYING CONCEPTS AND PROCESSES, cont. . Systems, Order, and Organization . Evidence, Models, and Explanation . Change, Constancy, and Measurement . Evolution and Equilibrium . Form and Function	Structure and Scale	10.1 Populations of organisms exhibit variations in size and structure as a result of their adaptation to their habitats.
		10.2 The structure and scale of an ecosystem are influenced by factors such as soil type, climate, availability of water, and human activities.
		10.3 When the Earth is studied as an interacting ecological system, every action, regardless of its scale, affects the biosphere in some way.
		11.3 Human-built environments, if planned, constructed, and landscaped to be compatible with the environment in which they will be located, can conserve resources, enhance environmental quality, and promote the comfort and well-being of those who will live within them.
	Patterns of Change	13.1 Organisms change throughout their lifetimes. Species of organisms change over long periods of time.
		13.3 As organisms go through their life cycle of growth, maturity, decline, and death, their role in the ecosystem also changes.
		13.4 Ecosystems change over time through patterns of growth and succession. They are also affected by other phenomena such as disease, insects, fire, weather, and human intervention.



National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD A: SCIENCE AS INQUIRY  . Abilities Necessary to Do Scientific Inquiry . Understanding About Scientific Inquiry		Integrated Throughout the PLT Program
STANDARD B: PHYSICAL SCIENCE  . Properties and Changes of Properties in Matter  . Motion and Forces  . Transfer of Energy	Diversity  Interrelationships  Systems	1.1 Biological diversity results from the interaction of living and nonliving environmental components such as air, water, climate, and geologic features.  4.2 Altering the environment affects all life forms, including humans, and the interrelationships that link them.  7.1 In biological systems, energy flows and materials continually cycle in predictable and measurable patterns.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD C: LIFE SCIENCE  · Structure and Function in Living Systems  · Reproduction and Heredity  · Regulation and Behavior  · Populations and Ecosystems  · Diversity and Adaptations of Organisms	Diversity	1.1 Biological diversity results from the interaction of living and nonliving environmental components such as air, water, climate, and geologic features.
		1.2 Forests, as well as other ecosystems, contain numerous habitats that support diverse populations of organisms.
		1.3 The Earth’s atmosphere, water, soil, climate, and geology vary from region to region, thus creating a wide diversity of biological communities.
		2.1 Humans use tools and technologies to adapt and alter environments and resources to meet their physical, social, and cultural needs.
	3.1 Human societies vary greatly and inhabit many land forms and climates throughout the world.	
	Interrelationships	4.1 Organisms are interdependent and depend on nonliving components of the Earth.
		4.2 Altering the environment affects all life forms,including humans,and the interrelationships that link them.
		4.3 Organisms adapt to changes in the environment according to the genetic and behavioral capacity
		5.2 While technological advances decrease the incidence of disease and death, the ever-increasing world population is placing heavy demands on the finite resources of the Earth.
		6.1 Human societies and cultures throughout the world interact with each other and affect the natural systems upon which they depend.
		6.2 The quantity and quality of resources and their use,or misuse,by humans affects the standard of living of societies.
		Systems
	7.3 Pollutants are harmful by-products of human and natural systems that can enter ecosystems in various ways.	
7.4 Ecosystems possess measurable indicators of environmental health.		

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD C: LIFE SCIENCE, cont. . Structure and Function in Living Systems . Reproduction and Heredity . Regulation and Behavior . Populations and Ecosystems . Diversity and Adaptations of Organisms	Structure and Scale      Patterns of Change	10.1 Populations of organisms exhibit variations in size and structure as a result of their adaptation to their habitats. 10.2 The structure and scale of an ecosystem are influenced by factors such as soil type, climate, availability of water, and human activities. 10.3 When the Earth is studied as an interacting ecological system, every action, regardless of its scale, affects the biosphere in some way.  13.1 Organisms change throughout their lifetimes. Species of organisms change over long periods of time. 13.2 Although species become extinct naturally, the increasing number of extinctions in recent history may be linked to the rapid increase in human population. 13.3 As organisms go through their life cycle of growth, maturity, decline, and death, their role in the ecosystem also changes. 13.4 Ecosystems change over time through patterns of growth and succession. They are also affected by other phenomena such as disease, insects, fire, weather, and human intervention.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept	
STANDARD D: EARTH AND SPACE SCIENCE	Diversity	1.1	Biological diversity results from the interaction of living and nonliving environmental components such as air, water, climate, and geologic features.
		1.3	The Earth's atmosphere, water, soil, climate, and geology vary from region to region, thus creating a wide diversity of biological communities.
	Systems	7.1	In biological systems, energy flows and materials continually cycle in predictable and measurable patterns.
		10.2	The structure and scale of an ecosystem are influenced by factors such as soil type, climate, availability of water, and human activities.
			10.3
		Patterns of Change	13.1
	13.4		Ecosystems change over time through patterns of growth and succession. They are also affected by other phenomena such as disease, insects, fire, weather, and human intervention.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD E: SCIENCE AND TECHNOLOGY	Diversity	2.1 Humans use tools and technologies to adapt and alter environments and resources to meet their physical, social, and cultural needs.
		2.2 Technologies vary from simple hand tools to large-scale and complex machinery, mechanisms, and systems.
		2.3 Successful technologies are those that are appropriate to the efficient and sustainable use of resources, and to the preservation and enhancement of environmental quality.
	Interrelationships	5.1 Resource management technologies interact and influence environmental quality; the acquisition, extraction, and transportation of natural resources; all life forms; and each other.
		5.2 While technological advances decrease the incidence of disease and death, the ever-increasing world population is placing heavy demands on the finite resources of the Earth.
		5.3 International cooperation directed toward conserving resources and protecting environmental quality is beneficial to human health and the well-being of other life forms.
5.4 By reducing waste and recycling materials, individuals and societies can extend the value and utility of resources and can promote environmental quality.		

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD E: SCIENCE AND TECHNOLOGY (cont.)  . Abilities of Technological Design  . Understandings About Science and Technology	Systems	8.1 The application of scientific knowledge and technological systems can have positive and negative effects on the environment. 8.2 Resource management and technological systems help societies to meet, within limits, the needs of a growing human population. 8.3 Conservation technology enables humans to maintain and extend the productivity of vital resources. 9.1 Most cultures have beliefs, values, and traditions that shape human interactions with the environment and its resources. 9.2 In democratic societies, citizens have a voice in shaping resource and environmental management policies. They also share in the responsibility of conserving resources and behaving in an environmentally responsible manner. 9.3 In democratic societies, individuals and groups, working through governmental channels, can influence the way public and private lands and resources are managed. 9.4 Effective citizen involvement in the environmental decision-making process involves a careful study of all sides of the issues, along with the ability to differentiate between honest, factually accurate information and propaganda.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD E: SCIENCE AND TECHNOLOGY cont. . Abilities of Technological Design  . Understandings About Science and Technology	Structure and Scale	11.1 Technologies vary in size, structure, and complexity and in their positive and negative effects on the environment.
		11.2 Conservation and management technologies, when appropriately applied to the use or preservation of natural resources, can enhance and extend the usefulness of the resource, as well as the quality of the environment.
		11.3 Human-built environments, if planned, constructed, and landscaped to be compatible with the environment in which they will be located, can conserve resources, enhance environmental quality, and promote the comfort and well-being of those who will live within them.
		11.4 International cooperation on resource management and environmental improvement programs can be beneficial to people in many parts of the world.
	Patterns of Change	14.1 Our increasing knowledge of the Earth's ecosystems influences strategies used for resource management and environmental stewardship.
		14.2 Technologies that are developed to meet the needs of an increasing world population should also be environmentally sound.
		14.3 To be most effective, new technologies require well-informed and highly skilled workers.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES	Diversity	<p>2.1 Humans use tools and technologies to adapt and alter environments and resources to meet their physical, social, and cultural needs.</p> <p>2.3 Successful technologies are those that are appropriate to the efficient and sustainable use of resources, and to the preservation and enhancement of environmental quality.</p> <p>3.2 Humans throughout the world create differing social, cultural, and economic systems and organizations to help them meet their physical and spiritual needs.</p> <p>3.3 The standard of living of various peoples throughout the world depends on the environmental quality; the availability, use, and distribution of resources; the government; and the culture of Earth's inhabitants.</p>
. Personal Health		
. Populations, Resources, and Environments		
. Natural Hazards		
. Risks and Benefits		
. Science and Technology in Society		
	Interrelationships	<p>4.2 Altering the environment affects all life forms, including humans, and the interrelationships that link them.</p> <p>5.1 Resource management technologies interact and influence environmental quality; the acquisition, extraction, and transportation of natural resources; all life forms; and each other.</p> <p>5.2 While technological advances decrease the incidence of disease and death, the ever-increasing world population is placing heavy demands on the finite resources of the Earth.</p> <p>5.3 International cooperation directed toward conserving resources and protecting environmental quality is beneficial to human health and the well-being of other life forms.</p>



National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES	Interrelationships (cont.)	<p>5.4 By reducing waste and recycling materials, individuals and societies can extend the value and utility of resources and can promote environmental quality.</p> <p>6.1 Human societies and cultures throughout the world interact with each other and affect the natural systems upon which they depend.</p> <p>6.2 The quantity and quality of resources and their use, or misuse, by humans affects the standard of living of societies.</p> <p>6.3 Cultural and societal perspectives influence the attitudes, beliefs, and biases of people toward the use of resources and environmental protection.</p> <p>6.4 All humans consume products and thereby affect the availability of renewable and nonrenewable natural resources.</p> <p>6.5 The extracting, processing, transporting, and marketing of natural resources provide employment opportunities for many people.</p>
. Personal Health		
. Populations, Resources, and Environments		
. Natural Hazards		
. Risks and Benefits		
. Science and Technology in Society		

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES, cont.  . Personal Health  . Populations, Resources, and Environments  . Natural Hazards  . Risks and Benefits  . Science and Technology in Society	Systems	7.3 Pollutants are harmful by-products of human and natural systems that can enter ecosystems in various ways.  8.1 The application of scientific knowledge and technological systems can have positive and negative effects on the environment.  8.2 Resource management and technological systems help societies to meet, within limits, the needs of a growing human population.  8.3 Conservation technology enables humans to maintain and extend the productivity of vital resources.  9.2 In democratic societies, citizens have a voice in shaping resource and environmental management policies. They also share in the responsibility of conserving resources and behaving in an environmentally responsible manner.  9.3 In democratic societies, individuals and groups, working through governmental channels, can influence the way public and private lands and resources are managed.  9.4 Effective citizen involvement in the environmental decision-making process involves a careful study of all sides of the issues, along with the ability to differentiate between honest, factually accurate information and propaganda.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES, cont.  . Personal Health  . Populations, Resources, and Environments  . Natural Hazards  . Risks and Benefits  . Science and Technology in Society	Structure and Scale	11.1 Technologies vary in size, structure, and complexity and in their positive and negative effects on the environment.
		11.2 Conservation and management technologies, when appropriately applied to the use or preservation of natural resources, can enhance and extend the usefulness of the resource, as well as the quality of the environment.
		11.3 Human-built environments, if planned, constructed, and landscaped to be compatible with the environment in which they will be located, can conserve resources, enhance environmental quality, and promote the comfort and well-being of those who will live within them.
		11.4 International cooperation on resource management and environmental improvement programs can be beneficial to people in many parts of the world.
		12.2 Governmental, social, and cultural structures and actions affect the management of resources and environmental quality.
		12.3 Demographics influence environmental quality, government policy, and resource use.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES, cont.	Patterns of Change	13.2 Although species become extinct naturally, the increasing number of extinctions in recent history may be linked to the rapid increase in human population.
. Personal Health		13.4 Ecosystems change over time through patterns of growth and succession. They are also affected by other phenomena such as disease, insects, fire, weather, and human intervention.
. Populations, Resources, and Environments		14.1 Our increasing knowledge of the Earth’s ecosystems influences strategies used for resource management and environmental stewardship.
. Natural Hazards		14.2 Technologies that are developed to meet the needs of an increasing world population should also be environmentally sound.
. Risks and Benefits		14.3 To be most effective, new technologies require well-informed and highly skilled workers.
. Science and Technology in Society		15.2 Consumers “drive” the marketplace with their demands for goods and services. Such demands shift with time and may have positive or negative effects on the availability of natural resources and on environmental quality.
		15.3 Industries usually respond to consumer demand for recyclable, recycled, or otherwise environmentally friendly products.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept	
STANDARD G: HISTORY AND NATURE OF SCIENCE	Diversity	2.1 Humans use tools and technologies to adapt and alter environments and resources to meet their physical, social, and cultural needs.	
		3.2 Humans throughout the world create differing social, cultural, and economic systems and organizations to help them meet their physical and spiritual needs.	
		3.3 The standard of living of various peoples throughout the world depends on the environmental quality; the availability, use, and distribution of resources; the government; and the culture of Earth's inhabitants.	
	. Science as Human Endeavor	Interrelationships	6.1 Human societies and cultures throughout the world interact with each other and affect the natural systems upon which they depend.
	. Nature of Science		6.2 The quantity and quality of resources and their use, or misuse, by humans affects the standard of living of societies.
	. History of Science		6.3 Cultural and societal perspectives influence the attitudes, beliefs, and biases of people toward the use of resources and environmental protection.
			6.4 All humans consume products and thereby affect the availability of renewable and nonrenewable natural resources.
			6.5 The extracting, processing, transporting, and marketing of natural resources provide employment opportunities for many people.
		Systems	8.1 The application of scientific knowledge and technological systems can have positive and negative effects on the environment.

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD G: HISTORY AND NATURE OF SCIENCE	Structure and Scale	11.1 Technologies vary in size, structure, and complexity and in their positive and negative effects on the environment. 11.2 Conservation and management technologies, when appropriately applied to the use or preservation of natural resources, can enhance and extend the usefulness of the resource, as well as the quality of the environment. 11.3 Human-built environments,if planned, constructed, and landscaped to be compatible with the environment in which they will be located,can conserve resources, enhance environmental quality, and promote the comfort and well-being of those who will live within them. 11.4 International cooperation on resource management and environmental improvement programs can be beneficial to people in many parts of the world.
. Science as Human Endeavor		
. Nature of Science		
. History of Science		

National Science Education Standards Content, 5-8	PLT Conceptual Framework Theme	PLT Conceptual Framework Concept #, Concept
STANDARD G: HISTORY AND NATURE OF SCIENCE, cont.	Patterns of Change	14.1 Our increasing knowledge of the Earth’s ecosystems influences strategies used for resource management and environmental stewardship. 14.2 Technologies that are developed to meet the needs of an increasing world population should also be environmentally sound. 14.3 To be most effective, new technologies require well-informed and highly skilled workers.
. Science as Human Endeavor		
. Nature of Science		
. History of Science		