

APPENDIX D

Academic Standards

Thinking Outside the Box activities have curricular connections to existing academic benchmarks. To help educators link instruction to standards requirements, each activity contains an Academic Standards graphic, which lists the disciplinary practices and content areas each activity incorporates.

The charts that follow detail *Thinking Outside the Box* activity connections to these National benchmarks:

- Next Generation Science Standards (NGSS)
- Common Core State Standards—English Language Arts (CCSS—ELA)
- Common Core State Standards—Mathematics (CCSS—Math)
- C3 Framework for Social Studies (C3)
- American School Counseling Association Student Standards (ASCA)

Note: In the charts, a square (■) indicates that the Doing the Activity section of an activity supports the standard, while a “V” indicates that the activity’s grade level Variation supports the standard.

For more information about additional alignments available, visit plt.org/alignment-to-standards.

SCIENCE (NGSS)			ACTIVITY					
			We All Need Trees	My Green Future	Peak at Packaging	Renewable or Not?	What's in a Label?	Seeking Sustainability
GRADE	DIMENSION*	STANDARD	p.6	p.12	p.18	p.26	p.38	p.50
K-2	DCI	ESS3.A: Natural Resources. Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.	■					
	DCI	ESS3.D: Human Impacts on Earth Systems. Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impact on the land, water, air, and other living things.		V				
	DCI	PS1.A: Structure and Properties of Matter. Different properties are suited to different purposes.	■					
	SEP	Analyzing and Interpreting Data. Use observations (firsthand) to describe patterns and/or relationships in the natural world in order to answer scientific questions.	■					
3-5	DCI	ESS3.C: Human Impacts on Earth Systems. Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth’s resources and environments.		■	■			
	DCI	ETS1.A: Defining and Delimiting Engineering Problems. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria).		■				
	SEP	Obtaining, Evaluating, and Communicating Information. Communicate scientific and/or technical information in written formats.		■				
	SEP	Developing and Using Models. Develop and/or use a model to predict and/or describe phenomena.			■			
	SEP	Constructing Explanations and Designing Solutions. Apply scientific ideas to solve design problems.			■			

* Abbreviations include DCI (Disciplinary Core Idea) and SEP (Science and Engineering Practice). Connections to Cross Cutting Concepts exist but are not explicitly identified in this volume.

SCIENCE (NGSS) (cont.)			ACTIVITY					
			We All Need Trees	My Green Future	Peak at Packaging	Renewable or Not?	What's in a Label?	Seeking Sustainability
GRADE	DIMENSION*	STANDARD	p.6	p.12	p.18	p.26	p.38	p.50
6-8	DCI	ESS3.A: Natural Resources. Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes.			V	■	■	
	DCI	ESS3.C: Human Impacts on Earth Systems. Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things.			V		■	
	SEP	Developing and Using Models. Use a model to predict and/or describe phenomena.				■		
	SEP	Obtaining, Evaluating, and Communicating Information. Communicate scientific and/or technical information (e.g., about a proposed object, tool, process, system) in writing and/or through oral presentations.			V	■	■	
	SEP	Constructing Explanations and Designing Solutions. Apply scientific ideas or principles to design, construct, and/or test a design of an object, tool, process, or system.					■	
9-12	DCI	ETS1.A: Defining Solutions and Delimiting Engineering Problems. Humanity faces major global challenges today, such as the need for supplies of clean water and food or for energy sources that minimize pollution, which can be addressed through engineering. These global challenges also may have manifestation in local communities.						■
	DCI	ESS3.C: Human Impacts on Earth Systems. The sustainability of human societies and the biodiversity that supports them require responsible management of natural resources. Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation.				V	V	■
	SEP	Asking questions and defining problems. Analyze complex real-world problems by specifying criteria and constraints for successful solutions.					V	■
	SEP	Developing and Using models. Evaluate merits and limitations of two different models of the same proposed tool, process, mechanism or system in order to select or revise a model that best fits the evidence or design criteria.				V		■

APPENDIX D

Academic Standards (cont.)

ACTIVITY

ENGLISH LANGUAGE ARTS (CCSS—ELA)

GRADE	STRAND	STANDARD	ACTIVITY					
			We All Need Trees p.6	My Green Future p.12	Peak at Packaging p.18	Renewable or Not? p.26	What's in a Label? p.38	Seeking Sustainability p.50
K-2	Reading	1. Read closely to determine what the text says explicitly and to make logical inferences from it.	■					
	Speaking & Listening	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	■					
3-5	Speaking & Listening	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.		■	■			
	Speaking & Listening	5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.			■			
6-8	Writing	4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.					■	V
	Speaking & Listening	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.				■		
	Speaking & Listening	4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning, and the organization, development, and style are appropriate to task, purpose, and audience.				■	■	
	Language	4. Determine or clarify the meaning of words and phrases by using context clues, analyzing meaningful word parts, and consulting reference materials.				■		
9-12	Writing	2. Write informative/ explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.					V	
	Writing	7. Prepare for and participate in a range of conversations with diverse partners, building others' ideas and expressing their own clearly and persuasively.					V	■

ACTIVITY

MATHEMATICS (CCSS—MATH)

GRADE	DOMAIN	STANDARD	ACTIVITY					
			We All Need Trees p.6	My Green Future p.12	Peak at Packaging p.18	Renewable or Not? p.26	What's in a Label? p.38	Seeking Sustainability p.50
6-8	Practice	2. Reason abstractly and quantitatively.				■		
6-8	Practice	4. Model with mathematics.				■		
9-12	Practice	2. Reason abstractly and quantitatively.					■	
9-12	Practice	4. Model with mathematics.				V		

SOCIAL STUDIES (C3 FRAMEWORK)

GRADE	DIMENSION	STANDARD	ACTIVITY					
			We All Need Trees	My Green Future	Peak at Packaging	Renewable or Not?	What's in a Label?	Seeking Sustainability
			p.6	p.12	p.18	p.26	p.38	p.50
K-2	D2. Economics	3.K-2. Describe the skills and knowledge required to produce certain goods and services.	■					
3-5	D2. Geography	3.3-5. Identify examples of the variety of resources that are used to produce goods and services.		■	■			
3-5	D2. Geography	4.3-5. Explain how culture influences the way people modify and adapt to their environments.		■	■			
6-8	D2. Economics	1.6-8. Explain how economic decisions affect the well-being of individuals, businesses, and society.				■	■	
6-8	D2. Economics	3.6-8. Explain the roles of buyers and sellers in product, labor, and financial markets.					■	
9-12	D2. Civics	3.6-8. Examine the origins, purposes, and impact of constitutions, laws, treaties, and international agreements.					V	■

COUNSELING (ASCA)

GRADE	CATEGORY	STANDARD	ACTIVITY					
			We All Need Trees	My Green Future	Peak at Packaging	Renewable or Not?	What's in a Label?	Seeking Sustainability
			p.6	p.12	p.18	p.26	p.38	p.50
K-12 Behavior	Learning Strategies	1. Critical thinking skills to make informed decisions.			■	■	■	
K-12 Behavior	Learning Strategies	7. Long- and short-term academic, career and social/emotional goals.	■	■	■	■	■	■
K-12 Behavior	Social Skills	6. Effective collaboration and cooperation skills			■	■	■	■

