ISRI Recycling Collection 9-12

Designed in partnership with The Institute of Scrap Recycling Industries (ISRI), students explore the benefits and challenges of sustainable recycling through a variety of activities ranging from physics and chemistry to engineering and human impacts, while becoming informed citizens and careful consumers.

Champions of Recycling
Crawford Carpenter - THE NEWARK GROUP
Tracy Blaszak - Compliance Director, Synergy Recycling, Atlanta Georgia
Mike Biddle - MBA Polymers
Dr. Stephen Jeffery - Wistron Green Tech Texas
Silvana Jones - SA Recycling

- *Activity 1: Tech in the Cycle:* Learn to recycle electronic devices.
- *Activity 2: Models:* Collect mathematical data and develop a model.
- *Activity 3: Tires Shouldn't Retire:* Explore properties of rubber and create a rubber product.
- *Activity 4: Fashion Show:* Test and compare properties of fabrics.
- *Activity 5: Recycling Representatives:* Assume the role of a stakeholder and present to the community board.
- *Activity 6: Simply Aluminazing:* Examine the use of aluminum in cans and create a work of art.
- *Activity 7: The Crumb Rubber Debate:* Weigh factors, debate the issue and make recommendations.
- *Activity 8: Paper Recycling: Keep It Clean:* Engineer ways to remove contaminants from paper.

Cross-Curricular Connections

Reading & Writing for Technical Subjects:

LST.1: Read and comprehend science and technical texts independently and proficiently and write effectively for a variety of discipline-specific tasks, purposes, and audiences

LST.2:Extract and construct meaning from science and technical texts using a variety of comprehension skills

LST.2.2: Determine the central ideas or conclusions of a text; provide an accurate, objective summary of the text.

LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LST.3.1: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to texts and topics.

LST.4.1: Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

LST.7.1: Conduct short research assignments and tasks to answer a question (including a self generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

Math: Data Analysis and Statistics, Linear Equations, Numeracy, Ratio and Proportional Reasoning, Modeling

Social Studies: Roles of Citizens in the United States,

Art: Creating Ads, Social Media Videos, Public Service Announcements, Paper Making,

Env.1.2 Understand and explain that human beings are part of Earth's ecosystems and give examples of how human activities can, deliberately or inadvertently, alter ecosystems. (Activities 1-8)

Env.2.11 Recognize and describe the role of natural resources in providing the raw materials for an industrial society. (Activities 1-8)

Env.4.2 Understand that environmental policies/decisions have negative and positive impacts on people, societies, and the environment. (Activities 2,5,7)

Env.7.7 Describe and explain the product life cycle and waste stream and its implications to waste management. Explain the difference between reduce,reuse,and recycle. (Activities 1-8)

Env.8.6 Understand and describe the concept and the importance of natural and human recycling in conserving our natural resources. (Activities 1-8)

Env.8.7 Understand and explain that waste management includes considerations of quantity, safety, degradability, and cost. Also understand that waste management requires social and technological innovations because waste-disposal problems are political and economic as well as technical. (Activities 1-8)

B.3.2 Design, evaluate, and refine a model which shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as, how these human impacts can be reduced. (Activities 1-8)

ICP.6.1Distinguish between elements, mixtures, and compounds based on their composition and bonds and be able to construct or sketch particle models to represent them. (Activites 3,4,6)

ICS-3.2 Create data visualizations, models, and simulations. (Activities 1,2,4,5,8)

ICS-3.3 Evaluate data to better understand the world. (Activities 1,2,3,5,6,8)