Green Architecture

Grade 8

Lubeznik Center for the Arts
February 23 – April 20

The **Green Architecture** exhibit at the Lubeznik Center for the Arts is an eclectic array of concepts which cross the curriculum to combine all aspects of grade level curriculum. In this experience, architecture becomes a creative integration of art, science, math, social studies and language arts that produce and develop the spaces and places that function to serve our needs. We need special places to live, work, learn, shop and be entertained; places that are not only practical and functional, but also inspirational.
With environmental issues are concerning our planet, many of us are becoming acutely aware of the necessity to be sensitive to our resources around us. Some of us are realizing that our resources are not unlimited and therefore need to be used more wisely. Many of us are becoming '**green**'. Recycling when we can, turning off lights when we leave a room, lowering thermostats in the winter are just a few of the ways that all of us make a difference.
Green Architecture shows extraordinary designs and construction of "**green**" projects that are within a 200 mile radius of the exhibit. The work in the show demonstrates ways that architects and designers have used alternative energy sources and the natural environment to create functional space and places without sacrificing interesting design. The exhibit is intended to inform and inspire visitors by offering an opportunity to view 'green' projects that are being built locally.

The exhibit is important for students, because it demonstrates how the sciences, the math, the social studies, the language arts and the visual arts that they study in school relate to and depend on one another to create the buildings that we use. They will experience how an architect uses their curriculum to create a useable building.
The Green Architecture programs are structured for each group and their specific requirements. Programs include a tour of the exhibit by knowledgeable staff and hands on experience of what it means to live green.

For more information and to schedule a class program, contact:

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Vocabulary:

Architecture (n) The art, science and practice of designing and building structures that serve our needs, such as houses, schools, office buildings, theatres etc.
The word "*architecture*" comes from the Latin word "*architectura"* and from the Greek "*arkitekton*" which means a master builder, chief builder or carpenter.

Architect (n) A person who designs buildings and advises in their construction. An architect uses mathematics, science, art, technology social sciences, politics and history to design structures for our use.

Green Architecture. (n) The design of spaces and places that respects the natural environment resources in our environment. The word "green" is used to describe something that is ecologically or environmentally friendly.

Natural resource. (n) Industrial materials and capacities such as mineral deposits, water power, and solar power supplied by nature that we use.

Conserve. (v) To keep in a safe or sound state. To avoid wasteful or destructive use of natural resources.

Recycle. (v) To pass through a series of changes or treatments. To process things such as glass, plastics and metals in order to make new things that we use.

Renewable Materials. (n) Natural materials that can be rapidly replaced in the environment such as fast growing trees, bamboo and agricultural products.

Renewable Energy. (n) Energy derived from sources that do not deplete natural resources such as solar power, wind power and geothermal energy.

Solar Energy. (n) Energy derived from the sun that we can use for our energy needs.

Geothermal Energy. (n) Energy derived from sources in the earth like steam or water power that we can use for energy.

Web sites.

The following web sites are designed to show students how to become environmentally aware of global warming and how to "act green" in their daily lives.

Global Warming for Kids features "energy action" games, photos and downloads in four languages.

http://globalwarmingkids.net

Scholastic for Kids is a new offering from Scholastic. This site offers 100 days to act green and has printable (free) reminders for students to paste on faucets, bicycles and their parents' bathroom mirrors.

http://www.scolastic.com/actgreen/

Behavioral Objective:
Students attending the Green Architecture exhibit at the Lubeznik Center for the Arts will have the opportunity of seeing and understanding the thought process of how architects and designers create buildings and spaces for us to use that are functional and ecologically and environmentally responsible.

Learning Objectives:
Students will:

1) Learn what "green" means.
2) Learn the vocabulary of green architecture
3) Identify man-made and natural products used in green architecture
4) Create a list of things that they can do at home and at school to create a more "green" environment.
5) Design a house that is "green"

Measurable assessment:
(Pre-visit) Teachers will administer a pre test to ascertain the knowledge of students. (Post –visit) Students will retake test. Using gained knowledge, students will be given guidelines for designing a "green" house. Students will draw their house for a class presentation. Students will write a story, using appropriate "green' vocabulary and display it in the classroom.

Additional activities:
Using other curriculum based standards, students will gain knowledge how science, math, language arts, social studies and the visual arts relate to each other to produce the ideas behind "green architecture".

Language Arts

Standard 1: Reading – Word Recognition, Fluency, and Vocabulary Development

8.1.3 Verify the meaning of a world in its context, even when its meaning is not directly stated, through the use of definition, restatement, example, comparison, or contrast.
Example: the meaning of "green" architecture.

Standard 2: Reading – Comprehension (Focus on Informational Materials)

8.2.3 Find similarities and differences between texts in the treatment, amount of coverage or organization of ideas.
Example: Read articles on the same current topic in magazines such as *Time, Newsweek, National Geographic* and editorials in national or local newspapers. Compare and contrast the texts in how they present the issue.

Standard 5: Writing: Application (Different Types of Writing and Their Characteristics)

8.5.3 Write research reports that:
- define a thesis (statement of position) on the concept of "Green Architecture"
- include important ideas, concepts and direct quotations from the Green Architecture exhibit
- use a variety of primary and secondary sources and distinguish the nature and value of each
- organize and display information on charts, tables, maps and graphs
- document sources with reference note and a bibliography

8.5.4 Write persuasive compositions that:
- include a well-defined thesis that makes a clear and knowledgeable appeal about "Green Architecture"
- present detailed evidence, examples and reasoning to support effective arguments and emotional appeals
- provide details, reasons, and examples, arranging them effectively by anticipating and answering reader concerns and counterarguments.

8.5.7 Write for different purposes and to a specific audience or person, adjusting tone and style as necessary.
Example: Write a letter to the editor of your local newspaper about "Green Architecture"

Standard 7: Listening and Speaking: Skills, Strategies and Applications

8.7.12 Deliver research presentations that:
- define a thesis (a position on "Green Architecture")
- research important ideas, concepts and direct quotations from the "Green Architecture" exhibit and summarize important perspectives on the topic
- use a variety of visuals which can include drawings, models, charts, maps and graphs.

Math

Standard 4: Geometry – Students co-relate architecture and geometry and deepen their understanding of plane and solid geometric shapes and properties by constructing shapes that meet given conditions, by identifying attributes of shapes and by supplying geometric concepts to solve problems.

Science

Standard 1: The Nature of Science and Technology
8.1.7 Explain why technology issues are rarely simple and one-sided because contending groups may have different values and priorities.
8.1.8 Explain that humans help shape the future by generating knowledge, developing new technologies, and communicating ideas to others.

Standard 3: The Physical Setting
8.3.6 Understand and explain that the benefits of Earth's resources, such as fresh water, air, soil and trees are finite and can be reduced by using them wastefully or by deliberately or accidentally destroying them.
8.3.20 Compare the differences in power consumption in different electrical devices.

Visual Arts

Standard 1: Responding to Art – History
8.1.1 Analyze who, what, when, where, and why a work (A BUILDING) was made; and the relationship of it to the historical, environmental, technological and political contexts of the culture in which it was created.

Standard 3: Responding to Art – Criticism
8.3.1 Analyze the architect's use of sensory, formal, technical and expressive properties of their work.
8.3.3 Expand on and use appropriate technical vocabulary.

Standard 8: Creating Art – Production

8.8.1 Apply elements and principles of art and design in their work to effectively communicate their ideas.

8.8.2 Identify and discriminate between type of shape, colors, lines, textures, and space which includes one, two and three point perspective, balance and the use of proportion, rhythm, variety, repetition and movement in their work and the works of others.

Standard 9:

8.9.2 Demonstrate appropriate use of different media, techniques and processes to communicate use of different media, techniques, and processes to communicate themes and ideas in their work including:
Drawing: Media – pencils, colored pencils, markers, ink, chalk, crayons, oil pastels, charcoals.
Processes – contour line, rendering, sketching, value, shading, crosshatching, stippling and one, two and three point perspective.
Sculpture/ARCHITECTURE/Jewelry
Media: paper, papier-mâché, clay, plaster, fiber cardboard, wood paper, foil, found objects, beads, sand, balsa, wire, foam, copper and foam core
Processes: carving, additive, subtractive, modeling, constructing.

Standard 11: Careers and Community – Students recognize a variety of art-related professions and careers in our society.

8.11.1 Identify a variety of professions related to art such as fashion design, advertising, web design, interior design, and ARCHITECTS.

Standard 13: Integrated Studies – Students identify and make connections between knowledge and skill as it relates to the concept of Architecture and all other subject arrears such as humanities, sciences and technology.

Green Architecture

Pre Test

Circle the answer that describes the word.

1) Architecture
   a. a new video game
   b. a set of blocks
   c. buildings

2) Green
   a. a color
   b. doing something for the first time
   c. being friendly to the environment

3) recycle
   a. to throw things away
   b. ride a bicycle
   c. to use things again

4) Architect
   a. an assistant to the principal
   b. a person who designs buildings
   c. an artist

5) Natural Resource
   a. water
   b. plastic cup
   c. cell phone