

Green Architecture

Grade 3

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:

Edwin Shelton
(219)874-4900
eshelton@lubeznikcenter.org

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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.

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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.scholastic.com/actgreen/>

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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”.

Grade 3 Indiana Academic Standards

Language Arts:

Standard 1: Reading: Word recognition, fluency, and vocabulary development

3.1.1 Know and use more difficult words

3.1.2 Read words with several syllables.

Standard 4: Writing: Process. Students find and discuss ideas for writing and keep a list writing ideas. Students write clear sentences and paragraphs that develop a central idea.

3.4.1 Find ideas for writing stories and descriptions in conversations with others; in books, magazines, or school textbooks; or on the Internet.

Standard 5: Writing: Applications

3.5.2 Write descriptive pieces about people, places, things, or experiences that:

- Develop a unified main idea.
- Use details to support the main idea.

Example: Students will design a house using the concepts and principles that they learned during their visit. Students will then write a descriptive essay about their house using clear details.

Math:

Standard 4: Identify common solid objects that are the parts needed to make more complex solid objects.

3.4.1 Identify quadrilaterals as four-sided shapes

3.4.2 Identify right angles in shapes and objects and decide whether other angles are greater or less than a right angle.

3.4.3 Identify common solid objects that are the parts needed to make a more complex solid object.

Example” Describe and draw a house made from a prism and a pyramid.

Science:

Standard 1: The Nature of Science and Technology

3.1.6 Give examples of how tools, such as automobiles, computers and electric motors have affected the way we live.

3.1.8 Describe how discarded products contribute to the problem of waste disposal and that recycling can help solve this problem.

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Standard 3: The Physical Setting

Earth and the Processes That Shape It

- 3.3.5 Give examples of how change, such as weather patterns, is a continual process occurring on Earth.
- 3.3.6 Describe ways human beings protect themselves from adverse weather conditions.

Matter and Energy

- 3.3.8 Investigate and describe how moving air and water can be used to run machines like windmills and water wheels.

Social Studies

Standard 2: Civics and Government

Foundations of Government

- 3.2.1 Explain that people are citizens of their community, state, and nation and explain the importance of good citizenship.

Standard 3: Geography

Places and Regions

- 3.3.4 Explain the basic Earth/Sun relationships including how they influence climate and identify major climate regions of the United States.

Physical Systems

- 3.3.5 Explain how climate affects the vegetation and animal life of a region and describe the physical characteristics that relate to form an ecosystem.

Human Systems

- 3.3.6 Construct maps and graphs that show aspects of human/environment interaction in the local community.
Example: Patterns of rural, urban and suburban development, their patterns of recycling, etc.
- 3.3.7 Use a variety of information resources to identify local environmental issues and examine the ways that people have tried to solve these problems.

Standard 5: Individuals, Society and Culture

- 3.5.4 Identify factors that make the local community unique, including how the community is enriched through foods, crafts, customs, languages, music, visual arts, architecture, dance and drama representing various cultures.
- 3.5.5 Use community resources – such as museums, libraries, historic buildings, and other landmarks – to gather cultural information about the community.

Visual Arts

Standard 7: Creating Art

Students observe, select, and utilize a range of subject matter, symbols and ideas in their work.

3.7.1 Demonstrate observational skills in the production of artwork

3.7.2 Create artwork that communicates personal ideas and experiences

Standard 8:

Students understand and apply elements and principles of design effectively in their work

3.8.2 Apply elements (line, shape, form, texture, color and space) and principles (repetition, variety, rhythm, proportion, movement, balance, emphasis) in their work that effectively communicates their ideas.

3.8.3 Identify and discriminate between types of shape (geometric and organic), colors (primary, secondary, complementary), lines (characteristics and qualities), textures (tactile and visual), and space (placement/overlapping/negative/positive/size), in their work and the works of others.

Standard 9:

Students develop and apply skills using a variety of two dimensional and three dimensional media, tools and processes to create works that communicate personal meaning.

3.9.2 Drawing: Media – pencils, colored pencils, markers, chalks, crayons, oil pastels, charcoals.

Processes: contour line, rendering, sketching, value.

Standard 12:

Students understand how art experiences affect daily life and identify opportunities for involvement in the arts.

3.12.2 Visit local museums, exhibits, art performances and experience visiting artists in the school.

Standard 13: Integrated Studies

Students identify and make connections between knowledge and skill in art and all other subject areas such as humanities, sciences and technology

3.13.1 Identify and compare similar concepts or principle found in art and across disciplines (such as symmetry, pattern)

3.13.2 Demonstrates the ability to create a work of art integrating concepts, subject matter, or the systems of another discipline.

Green Architecture

Pre Test

Circle the answer that describes the word.

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

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

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

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

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