

Designing a Southwest Neighborhood

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Narrative

This unit consists of three segments that introduce the basic skills and information needed to design a neighborhood. A fourth segment will involve applying those skills to creating the drawings and models for the neighborhood.

Segment 1: Basic Architectural Styles and Drawing Techniques

In this segment students will be introduced to design studio techniques and what will be expected of them throughout the unit. These techniques involve posing a problem or situation that the students will need to solve. Students will use various methods of research, from architectural websites and library resources to designing and building solutions by trial and error. All of the work the students complete will be displayed in one form or another. The students will produce visual/verbal presentations in which they explain the procedures and rationale for their solutions. They will give and receive constructive criticism of their projects. The objectives of this segment are as follows.

The students will be able to:

- Define architecture.
- Identify four basic architectural styles.
- Relate vocabulary terms associated with the segment.
- Produce basic architectural drawings such as: segment; light, shade, and shadow; floorplans; and elevations.
- Complete a visual/verbal presentation on a famous architect.

A slide presentation of four basic types of architecture will be a quick visual introduction for the students. There will also be reference materials available to browse through. The all important technology link will be forged with an on-going class list of websites devoted to architecture and architects for research purposes and for fun. This will be particularly useful for their famous architect project. The vocabulary words they will focus on will involve various activities incorporating skills from the district benchmarks to be achieved in Language Arts. The next important aspect of this segment is for the students to learn how to produce basic architectural drawings.

- *Segment drawings*- This will be done using a piece of fruit or candy bar cut lengthwise. The students will draw exactly what they see. It is an exercise in perception.
- *Light, Shade, and Shadow drawings*- The students need to train themselves to see gradations of color and the impact that light, shade, and shadow have on the appeal of forms. This will be accomplished using slides of various buildings illustrating the above principles as references for a drawing exercise.
- *Floorplan drawings*- This type of drawing gives the layout of a house with respect to

where walls, windows, and doors are located. Rooms are also labeled. This is one type of perspective in viewing a house.

- *Elevation drawings*- This is another view perspective. If you are standing outside and looking at the front of a house, that is a front elevation. Looking at the side of a house is the side elevation. These drawings allow the students to break down a house into smaller perspectives.

After the drawing techniques aspect, the students will choose a famous architect to research for a visual/verbal presentation. They will be expected to create a short speech to present on this architect with a visual presentation board showing a picture of the architect and examples of structures he/she has designed in the form of pictures, drawings, and/or models.

Segment 2: Southwest Architecture

Now that the students have been exposed to the basics of architecture we will venture into information on styles more representative of the region we live in. The two styles that will be our main focus are Pueblo and Spanish Colonial. The two styles have similarities and differences that will be shown via discussion and notes taken on slides of structures from Albuquerque, Santa Fe, and Taos. The students will discuss the main tenets of each style and their identifying characteristics. The objectives of this segment are as follows.

The students will be able to:

Relate vocabulary associated with this segment.

Identify and describe the two main styles of Southwest Architecture.

Compare and contrast a Southwest style with one of the basic styles from the first segment of the unit.

Produce a short essay on why Southwest architectural styles originate from environmental issues.

Design a Pueblo or Spanish Colonial house for a family of four and build a representative model.

Southwest architectural design originated from two cultures' ideas for dealing with a harsh environment. The extremes of heat and cold with the different seasons called for attention to such things as protection from the heat of the sun in the summer and protection from cold winds in the winter. Religion also had a big impact on building practices. Students need to be aware of the reasons for the orientation of the houses and the materials used to build them. Another focus of this segment will be on implementing the drawing techniques previously learned for the purpose of designing and building a model of a house in the Pueblo or Spanish Colonial styles. The students will be using chipboard, cutting tools, hot glue guns, etc. to create a three dimensional model of the house. Once all the houses are completed the students will give a presentation on their individual house.

Segment 3: Alternative Forms of Energy, Materials, and Landscaping

It is important for the students to be aware of factors other than just the appearance of a house. Environmental concerns such as recycling, energy usage, and water conservation are equally

compelling. The region that we live in provides great opportunities to see some alternatives to the usual materials, forms of energy, and landscaping techniques. We have people using discarded tires and aluminum cans as building materials in houses called Earthships. When appropriately executed, an Earthship requires no back-up heating or cooling due to its ability to tap into the constant temperature of the earth itself (New Mexico Energy, Minerals & Natural Resources Department [NMEMNRD], 1993).

Straw bale construction of homes is another alternative materials use. This type of construction was created in the Plains region due to a lack of wood and an abundance of straw. Construction methods are simple, relatively fast, and don't require skilled labor (NMEMNRD, 1993).

Solar power is very appropriate for our area. We have a very high number of sunny days. The students need to realize how easy it is to include passive solar design practices into the ideas for the house they will create. Wind power is another option I want the students to consider and investigate.

Xeriscaping is an important part of the whole picture. The use of low water and low pollen plants in an area with water scarcity and allergy issues is just plain smart. We have many examples of beautifully xeriscaped yards in the area. There are also botanical gardens with xeriscaped demonstration gardens. The objectives of this segment are as follows.

The students will be able to:

- Relate vocabulary connected with this segment.
- Identify and describe two appropriate alternative energy forms.
- Identify and describe two types of alternative building materials.
- Write an essay on why solar power is particularly appropriate to a house in New Mexico.
- Analyze the house they designed in the previous segment and describe the modifications they would make to create a more environmentally friendly house.
- Design the landscaping (using xeriscaping ideas) for the house they built.

Learning about these topics and applying them directly in projects is a great way of creating an awareness of the importance of these issues. The xeriscaping the students will create for their house will be fun to create and adhere to the "yard" around the model of the house they have designed. Who knows, maybe they will take these ideas and use them in their own yards. One can only hope. The ideas for the above objectives will come from lectures, slides, and reference materials on the subjects.

Segment 4: Planning and Designing a Neighborhood

This last segment will focus on what makes a good neighborhood or city. We will discuss the housing itself, its orientation to roads, street layouts, and green spaces. The topic of New Urbanism will also be explored. What differentiates it from normal city planning? Why are the ideas expressed in New Urbanism becoming so popular? Specific examples such as the Disney planned community of Celebration and Santa Fe's Frijoles Village will be discussed. An alternative community, the Earthship Colony near Taos, will be examined as well. Materials from Disney and Frijoles Village will be obtained and reviewed for resource possibilities. A

video on Arcosanti, a community designed by Paolo Soleri and currently being built by volunteers, will be an interesting resource. Arcosanti is in Arizona, not too far from Albuquerque, therefore, a potential weekend trip. The objectives for this segment are as follows.

The students will be able to:

- Relate vocabulary associated with this segment.
- Define New Urbanism and identify its main tenets.
- Produce a survey of neighborhood likes and dislikes and create a wish list from this.
- Write an essay on what their perfect neighborhood would be like.
- Work cooperatively in a group and produce designs for one of three parts of the final neighborhood design.
- Produce a group visual/verbal presentation on their portion of the final design.
- Combine the various parts to create a three dimensional model of the neighborhood.

The students will create a survey to take home and log the answers of family and friends about what they like and dislike about the neighborhoods they have lived in. This will be a good resource for creating their neighborhood and for writing their essay. The students will then split into three different groups that will focus on either housing, streets and green spaces, or landscaping for the neighborhood. Each group will present its ideas and then prepare to create the three dimensional representation of their aspect of the neighborhood. Once the final model of their neighborhood is completed, the students will collaborate on choosing a name for their neighborhood and creating a synopsis of how and why they created this project to attach to the model. The project will be displayed in the library for students, staff, and parents to see.

The topic of planning a neighborhood is relevant to everyone. We all live in places that may not be designed to our ideals. Sometimes we are not even sure of why one neighborhood is more comfortable than another, but we know it when we are there. One of the most interesting aspects of New Urbanism is that many of the design innovations are taking us back to the styles of the past. Large front porches, garages in the back connected by alleys, and pedestrian and bike friendly streets are all things my mother and grandmother talked about growing up with. Perhaps we are beginning to realize that neighborhoods should be designed for people, not for cars. I hope my students enjoy this journey of discovering what is involved in designing houses and their surrounding environment. They may gain an appreciation of and a sense of connection to their own neighborhoods.

Sample Lesson Plans

Lesson Plan One

Objective: The students will be able to compare and contrast a Southwest architectural style with one of four previously studied styles.

Materials: Paper, pencils, slides of various architectural styles, and books showing examples of various styles.

Procedures:

- Review the identifying characteristics of the previous four styles studied.
- Review the identifying characteristics of the two main Southwest styles.
- Discuss how to write a compare and contrast assignment.
- Assign a quick whole class example such as compare and contrast a Dodge Viper and a Ford Escort. Show on the board the layout expected and leave up there the answers the class provides as a model.
- Have the students write the name of the basic style vs. the Southwest style as the heading of their paper. Then have them write the subheadings of similarities and differences with the ideas listed beneath them.
- The students can then work on their assignment.
- Students will be chosen on a volunteer basis, or randomly if no volunteers, to share their assignment aloud with the class.
- Papers will be posted on a wall of the classroom.

Evaluation: The students will be evaluated on a teacher designed rubric.

Lesson Plan Two

Objective: The students will be able to write an essay on why xeriscaping should be the preferred method of landscaping in the Albuquerque area.

Materials: Paper, pens, reference materials on xeriscaping, vocabulary words and definitions, and a poster describing the main essay styles.

Procedures:

- Review the vocabulary previously taught on xeriscaping.
- Brainstorm what is unique about the Albuquerque area with regard to growing plants.
- Discuss the water problems in our area. What are some solutions, particularly focusing on their home environment.
- Discuss how xeriscaping can create a beautifully landscaped area that is water usage friendly.
- Discuss the possible reasons why most people have not used xeriscaping techniques in this area.
- Have the students brainstorm solutions to this problem.
- Review the persuasive essay style and its components.
- Assign the essay on why xeriscaping should be the preferred method of landscaping in Albuquerque.

Evaluation: The teacher will grade the essay using a rubric on persuasive essays.

Bibliographies

Teacher Bibliography

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Interesting Website Links

<http://www.arch.buffalo.edu/cgi-bin/pairc/archtcts> (Many good website links.)

<http://www.architecture.simplenet.com/links/index.html> (Shows various European architectural exhibits.)

<http://www.cyburbia.org> (Internet resources for the built environment.)

<http://www.whyy.org/aie/index.html> (Architecture in Education site.)