

Design + Build

Grade Level: 3-12

Goals of lesson plan:

1. Students will understand that design and structure are necessary aspects of architecture.
2. Students will take a design from paper and implement an actual structure using recycled materials



The main purpose of this lesson is for children to design “architecture plans” and transition that design into a physical structure. We want to allow them be creative and carve out a longer time frame for completion of this project, or spread it out over a few days.

1. Talk to your child about architecture plans and what he or she might want to design as a “mini architect.” Ideas may range from a pet house, single room, whole structure like a dream home, school, or a veterinarian’s office. The internet is a great resource to find examples of architecture plans and elevations.
2. Using graph paper or regular computer paper, have your child “map” out a design of something he or she may want to build. Talk to your child about *scale* and help him see the relationship between sizes. For example, if designing a bedroom, the bed should not be smaller than the dresser.

Tips for parents - Encourage your child to only design what he or she will want to build. Be realistic - if designing a dream house with 20 bedrooms, is that something he or she (or you!) is going to commit to actually building?

3. Gather materials for building, and find a space on the floor to spread out. If it is a nice day, it might be a good activity to do outdoors. Use a large, solid base such as a thick piece of cardboard or the side of a box. Build on the base. Good materials for the structure would be: plastic, Styrofoam, and paper recycled items. Cereal boxes, salad, and oatmeal containers (great for Silo designs!), soda bottle tops, and cut pieces of cardboard also work great. Look around for magazines that may have images to cut out.

Tips for parents - If your child is young or you have limited time, you may want to have her build inside a box. This also works well for designing a room. Shoe boxes or paper boxes work great.

4. Start to build! Use tape and/or tacky glue. Tacky glue works better than glue sticks or regular glue. If you don’t have tacky glue, you may want to use masking tape to hold together larger items like cardboard or plastic. Regular glue does work well for adhering paper together.
5. Make sure your child is using the design as the guide to the structure. However, oftentimes architects, including Frank Lloyd Wright, made changes to the design once it was being constructed. Make changes as your child sees fit!
6. If you want to get really creative, use other items to make the design come to life. Consider paint to bring color to the outside of a structure. Model magic or play-do can form trees, furniture, or other items.

Extra challenge?

1. Learn more about the architect Shigeru Ban, and see how he used recycled materials to make shelters for victims of natural disasters.
2. Darwin Martin was the client, and Frank Lloyd Wright was his architect. If you have more than one child doing the lesson, have them be each others' client and architect. Have them interview each other to discover what the other would want in a design.
3. Ask your child to design a structure that "solves a problem." This may be related to humans, animals, or the natural environment.

Looking for inspiration? Take a look at some ideas for designs below.

- Habitat for zoo animals
- Hospital
- Museum
- Park
- School
- Firehouse
- Homeless shelter
- Clothing store
- Hotel (Check out Frank Lloyd Wrights design for the Imperial Hotel on Japan)
- Greenhouse

Vocabulary

Architect	Landscape	Scale
Client	Elevation	Recycled materials
Design	Architecture plans	

Materials

Recycled materials	Glue, tacky glue, and/or masking tape
Magazines for either inspiration or for cutting out	Cardboard bottom or strong foam board (for the base of the structure)
Graph paper	Colored pencils or sharpies for design
Tools of the trade - protractor, rulers, T-square, pencil, and eraser	