

Building with Wonderful Junk (For children ages 4-8)

The things we think of as “trash” can be as fun, engaging, and educational as anything found in a toy store. It’s also a wonderful group activity, so ask your daughter to invite a few friends.

| 20–30 minutes |

Skills Developed:

- Creative thinking
- Planning and decision making
- Large and small motor coordination
- Problem solving
- Spatial relations and symmetry

Materials Needed:

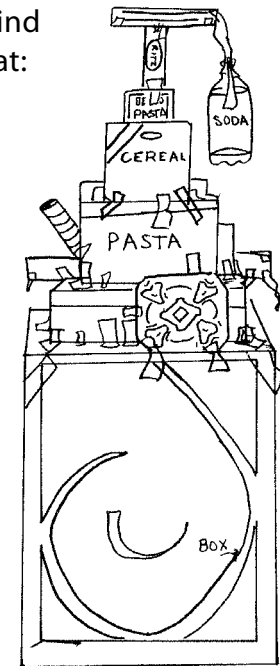
Lots of wonderful junk, for example, recyclables and trashables such as:

- Large cartons; shoe, tissue, and cereal boxes; egg cartons
- Paper or plastic cups
- Paper towel, toilet paper, and wrapping paper tubes
- Disposable foil bake ware (pie plates or cake pans)
- Plastic bottles of all sizes
- Masking tape

What’s the Science?

As your daughter builds her structure, she’ll be dealing with the concepts of balance, weight, gravity, and symmetry. Trial and error, a valuable way of learning, is also part of this process. The strength, shape, and size of the materials will influence the kind of structure she builds. She may find that:

- Flimsy materials can be strengthened by folding them
- Triangular shapes are rigid
- Some tubes are flexible and have a bending strength
- Tall structures need a stable base
- Symmetry adds to the overall strength and appeal of a structure



Activity:

1. Designate a large space where the structure can be built. Put all of the “wonderful junk” you’ve collected on the floor nearby. Be sure that there is at least one large, sturdy box that can be used to create a strong base. Have a lot of masking tape handy to help secure everything. If there is a group, three or four children can work together.
2. Explain to your child that she’ll be using all of the pieces of “junk” and the masking tape to create a structure that can be any shape and as tall as she can make it. The only rule is that the structure must be able to stand on its own.
3. As your child is working on her structure, ask questions that will help solve construction problems she might run into:
 - How do you think you can make your structure steadier?
 - Where do you think the largest carton might be most useful?
4. After the structure is finished, ask your daughter to tell you about her creation and draw a picture of it.
5. If you have a camera, you can take a picture of your daughter (and her friends) and her structure.

Additional activities for different age-levels:

4 year olds

Prepare several pieces of tape ahead of time so the building will go more smoothly.

Help your daughter understand the concept of balance. Ask questions like,

- Why do you think the building is falling over?
- What do you think you can do to keep the pieces from tumbling?
- Which pieces do you think could make our building stronger? Let’s try a few.

Later, explore together the similarities between the shapes of the boxes and tubes in the “junk” building, to the shapes of the toy blocks she also uses for building.

5-6 year olds

Children this age often like to make copies of things. Take a walk around your neighborhood and have your child draw the buildings she likes and then recreate them with the “wonderful junk.” Bringing a clipboard will be helpful for drawing buildings.

You and your daughter can also make a three-dimensional map of an area in your neighborhood. The buildings can be represented by boxes of differing sizes.

Activities for different age-levels (con't)

7-8 year olds

Plan a city built with recycled materials. Your daughter can design and draw plans for the city and determine what types of buildings should be in the neighborhoods. Ask your daughter also to think of all the things that can be done to help people with disabilities get around, such as curb cuts and ramps.

Ask your child to think of recycled things she or her friends or family use that might be used by the people who would live in this “recycled” city. Look through catalogues and magazines for examples of products and objects made of recycled materials.

If Your Child Has a Disability

All the activities can be done with children with a wide range of disabilities by making some modifications. You are the best judge of what those modifications might need to be, but here are some suggestions that have worked well.

For a child who is blind or visually impaired:

Prior to the activity, divide the “junk” into separate piles according to shape and size. Have your child touch and hold the items to become familiar with them. If your child has never built before, practice making small structures with one-on-one assistance.

For a child who is deaf or hard of hearing:

Review ASL and English (or child’s native language) vocabulary words and concepts, such as “balance,” “gravity,” and “symmetry.” If there is more than one child, make sure that they are able to communicate as a group.

For a child who is physically disabled:

Help your child become familiar with the “junk.” Make a chart listing shapes and sizes of the pieces. Include all descriptive words and concepts on any communication device. Build on a table top for easier reach and move onto the floor as the structure gets bigger, or build horizontally and then lift into a vertical position. Give your child “hand-on-hand” help if needed, or she can give you directions on which items to use and where to place them.

For a child who has learning/emotional disabilities:

Collect a limited amount of “junk” — about a dozen pieces. Place all of the “junk” on the floor or on a large table and give your child some time to explore all of the items. Feel free to give your child “hand-on-hand” help if she needs it. If necessary, you can assist by handing pieces of tape to your daughter to make the building go more smoothly.



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**Science:
It's a Girl
Thing!**