

## **Building a House – lesson plan based on the book Building a House by Barton**

By Janelle Durham. Learn more at [www.InventorsOfTomorrow.com](http://www.InventorsOfTomorrow.com)

This is a lesson plan for a two hour long STEM enrichment class for children age 3- 6. Each activity is inspired by a page from the book showing the steps of building a house. We photocopied pages from the book to post at each station. (Note: we also included pages from the book Building Our House by Bean, which tells the story of a family building their own house over the course of a year and a half. If you're working with ages 5 – 7, you could use it as the primary source for this class instead of Barton.)

**Class Format:** Our class always follows this structure: 20 minutes of “Discovery Time” where children move around between activities of their choice, trying things out, and discovering new ideas on their own, before we “teach” them. Then 20 minutes for opening circle which introduces the theme and big ideas of the day. (We always have a “question of the day” and a “challenge.”) Then 50 minutes of “Tinkering Time” to explore the theme and activities more. 20 minutes of outside time, then 10 - 20 minutes of closing circle to wrap everything up.

**Question:** what are the steps of building a house?

**Challenge:** Build a house with friends. Design a house like you would like to live in.

**Activities.** The quotes are from the Barton book, in order, with associated activities. On or near each table, there would be a copy of that page from the book plus related page from Bean.

- Picture of blue prints. **Art Activity.** Draw a house plan with white crayon. Paint over with thinned blue paint [www.notimeforflashcards.com/2010/05/be-an-architect.html](http://www.notimeforflashcards.com/2010/05/be-an-architect.html)
- “A machine digs a big hole.” **Sensory Bin.** Dirt, bulldozers, shovels, dump trucks.
- “Builders hammer and saw.” **Tool of the Week.** Use toy saws on playdough. You could also hammer golf tees into the playdough.
- “A cement mixer pours cement.” Make gak with cornstarch and water to pour & explore. Info at <http://www.stevespanglerscience.com/lab/experiments/non-newtonian-fluid/>.
- “Bricklayers lay large white blocks.” Duplos? Or big Styrofoam or cardboard blocks.
- “Carpenters come and make a wooden floor.” **Popsicle sticks.** Prep by hot-gluing several sticks into a shoe box lid, lying on their side to be floor joists, then in class kids lay out a popsicle stick floor on top of them and glue it down
- “They put up walls.” **Styrofoam panel** building project. This is a large motor collaborative process – you do need at least two adults to help. Get foam insulation panels from a hardware store. We used 1 inch by 2 foot by 4 foot panels. We had 9 of them for a group of 12 kids, plus a few that had been cut in half or in thirds. Adults get them started by holding a couple panels together to make the “corner” of a building. Kids nail it together, using golf tees and toy hammers.
- “They build a roof.” (Trusses) Could use newspaper – roll two pieces together starting in one corner to make paper tubes. Then join those together into triangles. Put several triangles together and then lay a newspaper roof over them. Or, you could use magnetile triangles, and flat panels to make a roof. We have not “play-tested” either of these ideas.

- “A bricklayer builds a fireplace and a chimney too.” **Duplos!** We put a picture of the fireplace and chimney drawing from the book there and challenged kids to build it. A few did, most just did free play building with Duplos.
- “A plumber puts in pipes for water.” Pipes / tubes in the **water table**. We used materials from our magnetic water wall. <https://gooddayswithkids.com/2015/05/19/diy-water-wall/>
- “An electrician wires for electric lights.” Could use Little Bits toy (for ages 4 and up) or Snap Circuits toy. (best for ages 6 and up) or just a battery and an LED light on wires. See the electricity post at [www.InventorsOfTomorrow.com](http://www.InventorsOfTomorrow.com) for ideas.
- “Carpenters put in windows & doors.” Find photos of windows and doors online. Put them in a document. Print it. If you have kids 3 – 5, cut out the windows and doors for them – older kids can cut their own. Then glue or tape on box or bag houses (see below) [www.learnwithplayathome.com/2013/10/create-box-city-cutting-practice-and.html](http://www.learnwithplayathome.com/2013/10/create-box-city-cutting-practice-and.html)
- “Painters paint inside and out.”
  - Have a big cardboard box (refrigerator size) to **paint**. (Put it on a BIG drop cloth.)
  - OR use cereal boxes and waffle boxes from the recycle bin. Fold them inside out so they are plain cardboard, then paint with rollers and tempera paint.
  - OR do paper bag houses – we used white bags and markers to decorate these, rather than paint, because we didn’t have time for paint to dry. Idea and pictures at: <http://kidsactivitiesblog.com/46890/dramatic-play>
- “The family moves inside.” **Sorting**. Draw a floor plan on a table. Have children arrange dollhouse furniture in each room.
- Optional: **Collaborative art project**: Build a city – mark out roads on the floor with tape. They put their paper bag houses there, and cardboard houses, cars and dolls.

### Opening Circle

Gathering song – we start with a really easy song to get their attention focused. We used rhythm sticks and mimed each verse. We chose these verses because they taught the actions we would do in our other song.

This is the way we saw the wood, saw the wood, saw the wood,  
 This is the way we saw the wood, so early in the morning.  
 This is the way we hammer the nails...  
 Lay the bricks... Paint the walls....

But, you could also do these verses to match the actions in the book, in order. This would be great if your circle time is in the same room as activities, and on each verse, you can point around the room to the related activity.

This is the way we dig a hole, dig a hole, dig a hole,  
 This is the way we dig a hole, so early in the morning.  
 Hammer and saw... pour cement... lay the bricks... make a floor... put up walls, build a roof...  
 build a fireplace... put in pipes... wire for lights... put in doors... paint the walls... build a house. [on final verse, instead of ending with “so early in the morning” end with “the family moves inside.”]

Observations: Ask: What have you done so far? What do all those activities have in common?  
[answer: They are all steps we take while building a house.]

Overview of the Day's Activities: Read the Barton book, pausing on each page to point to / talk about the related activity you're doing, and/or comment on the children's activities so far: "I saw X working on the pipes" or "Y, you had a lot of fun arranging the furniture, didn't you?"

**Book:** If I Built a House, by Von Dusen. This is a FABULOUS book. It is a boy telling the story of the house he has designed. It's got a great rhyming, rhythmic flow to it, fun retro illustrations, and wild and engaging concepts about the kinds of rooms the boy would build if he could. I especially like the pages at the beginning and end where we see that he's drawn a house plan and built models from Legos, tinker toys, paper towel rolls and cardboard.

**Group Activity:** Give them paper to draw on. Encourage them to write or draw ideas for a house they would build. If they don't want to write / draw, they ask an adult to help. While they draw, put on music, do own sketches on board. After 5 minutes or so, ask some to share.

### Closing Circle

Song – Hand out rhythm sticks, and reprise the song from opening circle.

Song: When I build My House. [www.youtube.com/watch?v=VBfJbbHJej0](http://www.youtube.com/watch?v=VBfJbbHJej0) (starred lines are done as call and response – you sing, they echo.) Mime the steps with rhythm sticks.

When I build my house\*, I'll need some wood\*.  
And I'll saw the wood\*, when I build my house\*.  
And we'll saw the wood, saw the wood, saw the wood when I build my house.  
When I build my house, there's so much to do...  
It's nice when you come along and help me too.  
Swap in... Nails, hammer the nails. After singing third line with nails, repeat the third line with sawing the wood. Continue with Bricks, lay the bricks. Paint, paint the walls.  
The song finishes with:  
And when I'm through, I'll go inside. And I'll look with pride at the work I've done.  
[Wow, look at what I did...]  
I painted the walls, painted the walls, painted the walls when I built my house. Laid the bricks...  
Hammered the nails... Sawed the wood... When I build my house, there's so much to do...  
[Thanks] It's nice when you come along and help me too.

Discussion: What was their favorite part of building a house – what activity was most interesting?

Book: Building Our House by Bean.

Optional Books: Tap Tap Bang Bang is a fun book about tools for 3 – 4 year olds, and A House is a House for Me is a fun story about ALL the different kinds of houses. Good for age 4 – 7.