The Tech Interactive at home

Parent Guide: Learning at Home

The building and making design challenges on The Tech Interactive at Home page are a chance to explore, create and iterate. You CAN do these at home. Here are a few tips!

Why Design Challenges?

This is a fun way to have young people in your life explore new ideas and build new skills independently. You can do this by providing space, materials, tools and some adult guidance. You do not need to know how to solve this yourself to guide young people; this is their challenge. You CAN support how they explore the ideas with resources you find online, an aunt who is an engineer, or books and photos.

Tip to keep you sane:
Be patient! Let your learners go at their pace while you get something else done.

How to Set Up

Use these common materials from around your house. Have learners use tools as appropriate and, when you want to help, have them draw lines and you can cut as needed.

Materials You Can Use

***You don't need all the materials listed, just a few from each category. Reuse materials for multiple designs.**

Connectors

- Twist ties
- Rubber bands
- Pipe cleaners (chenille stems), can be cut into smaller pieces
- Paper fasteners
- Rubber bands
- Binder clips
- Paper clips
- String

Structural pieces

- Craft sticks (regular and wide)
- Bamboo skewers
- Chopsticks
- Thin wooden dowels ¼" or 3⁄16"
- Sticks from your yard
- Toothpicks
- Cardboard
- Paper
- Straws

Recycled materials from around the house

- Cardboard boxes (thicker packing boxes and thinner cereal and tea boxes)
- Drink cartons
- Cans
- Plastic bottles
- Bottle caps
- Plastic lids
- Takeout containers
- Corks
- Junk mail

Materials with lots of surface area

- Paper
- Cloth scraps
- Felt
- Foil
- Cardboard

Tools for learners to use themselves

- Scissors
- Hole punch or crop-a-dile power punch
- Pencil
- Eraser
- Paper for journaling

Optional tools

- Drill and drill bits*
- Exacto knife or box cutter*
- Cutting mat or thick piece of cardboard/wood

**Parents, these tools require adult supervision and should only be used if you are present.*

Avoid glue and limit tape (to zero, on request, or one arm's length per build). This allows for faster iteration, more reuse of materials and less mess.

What You Can Provide

- Give learners some space and time to tackle each challenge.
- Encourage them and push their ideas (using the questions below).
- Allow them freedom to try new things (using a new tool, putting something together that may NOT work the first time, trying a new idea) without intervention.
- It's OK for them to get frustrated, as then they will feel all the more proud when they can do it.
- It's OK to have learners of different ages work together. Celebrate the successes of each level.

What to Ask While They Build

Use the questions below and encourage writing about their experiences as a way to share brainstorming, iterations and tests, and respond to ideas — so you don't get the response, "Stop asking me about my design!").

Encourage learners to develop more than one solution and iterate on their ideas.	**Have learners share their thinking.**
Ask: • How can you change your device or solution? • What if we used these materials instead? • What would be another way to solve this?	**Ask:** • How is your idea intended to work? • What does this part do? • What happened when you tested this device? • How will you change your device? What would you change if you had more time? • How might this solution be used in the real world?

After Your Design is Finished

Share your learner's devices with teachers, family and friends using video conferencing software, school learning platforms or social media. Use photos or videos and explain their solution, what they did and what they would do next! We'd love to see what they created too! **Share with us using the hashtag #thetechathome.**