



## Makerspace @ Home!

This collection of activities is here to help you find some fun projects that your children can do at home on their own, with parents, siblings, or even through video chats with friends. The activities range from low-tech using materials that you most likely have at home, to high tech using computer programs and electronic equipment. Check back often we will update this list!

If you complete a Makerspace challenge please take a picture or video and share with [gbds@ssnj.org](mailto:gbds@ssnj.org) so that we can see your work and share (with your permission) with our community.

### Low Tech - materials at home

**Cardboard/Paper roll challenge** - It can be a single ramp, a roller coaster, a bridge, bowling pins, or watch the classic [Cain's Arcade video](#) for even more inspiration

**Hanger balance scale** - using a coat hanger, string, cups, and tape you can build a simple balance scale!

**Crystals** - Three options: [Baking soda](#), [Epsom Salt](#) or [Sodium Borate \(Borax\)](#). You can vary the amount of salt, baking soda or Borax you use in the mixture and see how that change affects the rate of growth and overall size of the crystals that form. Be patient it can take a couple of days for crystals to grow!

**Flextanglers** - This is a great [printable](#) to color, cut and build!

**Rubber eggs** - Soak an egg in vinegar for a few days and watch the shell [dissolve](#). You can do all kinds of fun experiments with the egg once the shell is removed. You can soak it for 1-3 days in water and food coloring, salt water or distilled water or corn syrup.

**Paper Airplanes** - There are so many designs to try. This can even be a family challenge - whose plane flies the farthest, straightest, highest?

**Indoor obstacle courses** - You can use pillows, furniture, hula hoops, jump ropes, place mats, balloons, frisbees, tennis balls and build a course for children and parents to jump, roll, climb, crawl and run through. Want some inspiration check out these videos from [What's Up Moms](#), [Family Education](#) and [Purple Alphabet](#).



**Read on for more ideas!**

### **Coding challenges**

These are free platforms that can be used with or without a login. If you create a username and password you can save your projects. Children under 13 need parent's permission to create an account.

#### **Block Coding Platforms**

These are just three of hundreds of online options. We use these platforms at school so the students are already familiar with how to use them.

**[Scratch](#) and [Scratch Jr.](#)** - This is a great platform for creating animations and telling stories.

- Create an animated movie about your favorite story or book! Share with your classmates so that they can read along with you!
- Make a card that says HI! To all of your classmates!
- Everyone loves Flappy Bird, can you create a game in Scratch too?

**[Code.org](#)** - There are many activities available with a free account including self-paced tutorials, as well as animation studios, making sprites, apps and games. There are activities on here for pre-readers, young children, middle schoolers and advanced coders of any age! Parents now is your change to learn to code!

**[Kodable](#)** - A fun game-based way to practice many coding skills including algorithms, loops and conditionals.

### **Gaming and Advanced options**

**[Code Kingdoms](#)** - Are your children gamers? They can learn to create their own Minecraft Mods and Roblox games through courses at Code Kingdom. This does require a membership fee and students can learn both Block coding and as well as Java and Lua code.

**[Code Monkey](#), [Code Academy](#) and [MIT App Inventor](#)** - These are all great options for older students (11+) or advanced coders who want to learn a non-block based coding language or develop apps. These platforms all have free basic memberships except for Code Monkey which has a free trial period.



**Keep going...there's more!**

### **3D Design**

This is a great time to learn 3D design!

Autodesk provides software options for 3D for hobbyists to use. They range from complete beginner options with tutorials to advanced software for making sophisticated objects. [Tinkercad](#) is the right option for beginners as well as advanced designers. There are plenty of tutorials to get you started and it is very user-friendly. Those who are ready for a more advanced option can move on to [Fusion360](#).

### **Electronics, Coding, and Inventor kits**

Also known as Mrs. Barbach's favorite toys!

I spent hours as a child building, taking apart, rebuilding, and tinkering with electronics, wires, and all kinds of gadgets. If you are looking for kits and projects here are some of my favorites:

[Sparkfun Inventor's Kit](#) - this kit has some great introductory projects that incorporate electronics and coding.

[Arduino Workshop Kit](#) - Arduino is an open-source hardware and software ecosystem. You can make many creative projects including cool Internet of Things (IoT) gadgets and projects. This is a fun starter kit for making beginner projects.

Wood burning, crochet, knitting, needlepoint, ceramics, soldering, cake decorating and embroidery - My grandparents and parents collectively showed me all of these crafts as a child and they continue to bring me lots of joy and creative inspiration!

### **And finally...**

My favorite place for Makerspace inspiration is [Make](#): the website is chockful of DIY projects and ideas