

# BYF Session Curriculum





## Session 2: String Art

### Materials:

- Wood pallet for every student
- Around 20 nails for every student
- A variety of string colors
- Hammer for every group
- Safety goggles


### Objectives:

- Students will practice following through on a project by building a project from beginning to end.
- Students will be able to describe a variety of different careers in construction.

<p><b>Greeting Activity - 10min</b></p> 	<p>Slide 2 Clump</p> <p>In this activity, students will form and reform groups – or clumps – as quickly as possible. The leader calls out a direction in the following format. “Get into groups of 3!” The rest of the students hurry to form a clump of that number. Anyone left out of a group is out. The caller continues to call out clump numbers until there are two students left. At this point they play Hammer, Blueprint, Architect to determine the winner.</p>
<p><b>Objective Preview - 10min</b></p> 	<p>Slide 3-4 Life Skill:</p> <ul style="list-style-type: none"> <li>• Perseverance             <ul style="list-style-type: none"> <li>○ Sticking with something even when there are challenges</li> <li>○ <b>As we construct and design our string art, we will encounter some challenges and must redesign our model to make it better. We need to remember to stick with it and not get discouraged when we need to revise.</b></li> </ul> </li> <li>• Commitment             <ul style="list-style-type: none"> <li>○ The act of being dedicated and loyal to something</li> <li>○ <b>Kind of like perseverance we are going to practice having commitment for this project today. That means being dedicated to making this project as good as it can be today. We are going to be committed and not settle for less than our best.</b></li> </ul> </li> </ul> <p>Construction Skill:</p> <ul style="list-style-type: none"> <li>• Awareness of other careers in construction</li> </ul>

	<ul style="list-style-type: none"> <li>○ <b>Today we are building string art! There are lots of construction careers that don't necessarily build houses or roads. We will talk about them today.</b></li> <li>● Follow-through <ul style="list-style-type: none"> <li>○ <b>We will get to finish our build today so we will practice following through with our plans and working on something all the way until it's done.</b></li> </ul> </li> </ul>
--	---

**Pre-Teach - 10 min**





Slides 5-6  
Materials/Tool Handling:

- Hammers and Nails vocab
  - **Carpenter's hammer**
    - **Shaft** is the handle
    - Head is the part you use to hammer
  - Nail
    - The **head** of the nail is the top of the nail
- Demonstrate for students how to use a hammer
  - **Hold the hammer with your dominant hand near the bottom of the shaft. Hit the head of the nail with the flat part of the hammer until the nail is embedded in the wood.**
  - **For this string art you won't necessarily pound the nails all the way down. You will want them all to stick out from the wood the same height.**
    - **Pound nails about a 1/2 inch to inch – thumb's width - away from each other.**
  - **Be sure to hit the nail straight on the top of its head, or the nail will bend and then it cannot hold your project together.**
  - **To start a nail, you hold it gently in place with your non-dominant hand while you gently tap it into place with the hammer in your dominant hand. The longer you set the nail the easier it is to hit in straight.**
    - **If you notice your nail going in crooked there are a few things you can do:**
      - **Gently tap the nail from the direction it's bending to straighten it again.**
      - **Use the back prongs of the hammer to pull the nail straight.**

Safety Expectation: (Slide 8)

- Everyone "on site" wears goggles
- Everyone is responsible for their own part of the project.
  - *Every student will bring home a string art project. Because of the detail involved with this project there is the option to have the teams of three work together to complete one person's project and send home the other two teammates with the materials to complete this at home, excluding the hammer. However, you can also allow each student to share*

	<p><i>the hammers and complete their own string art project within the class time.</i></p> <ul style="list-style-type: none"> <li>○ Depending on your choice above: <b>In your groups of three, remember who chose to be the Project manager for this build. This person will get your materials, read the directions and choose the colors and design for your string art. Laborers make sure everything, and everyone is safe and that tools are used correctly. Remember to stick to your role as we build.</b></li> <li>• Keep your fingers safe! <ul style="list-style-type: none"> <li>○ <b>It can really hurt if you hit your finger with the hammer. Try your best to keep your fingers out of the way as you hammer.</b></li> </ul> </li> </ul>
<p><b>Focus Activity - 1hour</b></p> 	<p>Slides 9-10 Students will complete their string art projects</p> <ul style="list-style-type: none"> <li>• Distribute boards, nails and a hammer to each group. <ul style="list-style-type: none"> <li>○ Put a handful of nails with every group. If they need more that is the project manager's job to acquire.</li> </ul> </li> <li>• Students hammer nails along the outlines of their templates <ul style="list-style-type: none"> <li>○ If they did not bring a template, let them choose one of the templates provided.</li> </ul> </li> <li>• Display string colors <ul style="list-style-type: none"> <li>○ Project manager will retrieve one skein at a time. When they would like to switch colors, they can return the one they were using and get another color.</li> <li>○ <b>To attach your string, wind it around the nail you would like to start with four times. Then make sure you keep it tight as you connect the dots with the string in the pattern you want. When you are done wind the string around the last nail four times again and trim the extras with scissors.</b></li> </ul> </li> </ul>
<p><b>Job Exploration - 20min</b></p> 	<p>Slides 11-16 Awareness of other careers in construction</p> <ul style="list-style-type: none"> <li>• <b>There are three different categories of construction.</b> <ul style="list-style-type: none"> <li>○ Civil construction – roads</li> <li>○ Residential construction – residences/houses</li> <li>○ Construction design – the appearance of a structure</li> </ul> </li> <li>• <b>There are many more careers in construction that can fit into all three of those categories and more!</b> <ul style="list-style-type: none"> <li>○ Craft Laborer <ul style="list-style-type: none"> <li>▪ <b>Craft Laborers do a lot of different things on a construction site. If you want to do a little of everything this would be the career for you! They perform many basic tasks on construction sites and mostly work full time.</b></li> </ul> </li> </ul> </li> </ul>

**It's a great way to enter the construction field.**

- Instrumentation Technician
  - **Instrument Fitters and technicians perform key installation and maintenance functions across several industries and are trained in piping, tubing, fasteners, and working with metal production.**
- Millwright
  - **Millwrights work on construction sites and in factories assembling and disassembling machinery. This work can involve intricate technical repairs or heavy machining tools, depending on the project.**
- Sheet Metal Worker
  - **Sheet metal workers cut and mold sheets of metal into products for installing and repairing ventilation and air ducts. They also construct airplanes, automobiles and billboards. Most sheet metal fabrication shops are completely computerized, so sheet metal workers may be responsible for programming control systems on various pieces of equipment.**

**Now, let's hear from a real industry professional who can tell us about their career in residential construction!**


- Introduce a community partner if applicable.
- If no community partner can attend introduce the video.
- Show slide with general salary information on it.
- Open the floor for students to ask their own questions of the industry professional.
  - Note: If no industry professional is available ask students what their questions would be and make a list. Send this list to your Coordinator and they will try to get those questions answered.

Videos:

Success story Millwright: <https://youtu.be/g-NBzo1K7UU>

Questions for industry professionals:

- What soft skill are important in your job?
- What does your "office" look like? Work Environment?
- What education did you need to get this job?
- What is your favorite part of your job?

	<ul style="list-style-type: none"><li>• What is some good advice to someone who wants to go into your field?</li></ul>
<p><b>Wrap-Up - 10 min</b></p> 	<p>Have students complete this form as their exit ticket. <a href="https://forms.gle/pgBsu5cAe8wxUvybA">https://forms.gle/pgBsu5cAe8wxUvybA</a></p>