

Kids 'R' Kids Mini Camp



Construction Club



Construction Club

Introduction

Welcome to the Construction Club where it is all about the process! During your time in this club, you will learn better communication skills, enhance problem-solving techniques, and challenge yourself in creating awesome builds!

Discussion Time: Why do you like art? What do you think makes art special? What do you hope to learn by the end of this club?

Note to Teachers:

The Construction Club provides children the opportunity to discuss, problem-solve, ask thought provoking questions, and design builds. The activities are designed to be conducted throughout the week. Members can meet daily to discuss and work on their ideas and builds. Each week, members will concentrate on different builds. However, they can decide which materials they would like to use, processes, methods, designs, and repeat any build. You can decide which projects will be introduced. Most activities will not have step-by-step instructions on how to build a structure. Construction Club members will have the autonomy to design, create, and build the structures their team chose. Members of the club can be divided into groups of three or four.

It is very important that you, as a teacher, are constantly engaged, interacting, and asking questions while members are building. Provide constant encouragement and praise the members for utilizing their imagination and creativity. Preview each activity prior to introducing it to the club members to ensure enough materials are provided. Happy Building!!

Weekly Themes:

- Log Cabins
- Lego® Dams
- Beaver Dams
- Domino Chain Reactions
- Popsicle Stick Bridges

Materials List

- cardboard
- construction paper
- cotton balls
- crayons
- dominoes
- internet access
- leaves
- Lego® building blocks
- markers
- paint
- paintbrushes
- paper
- paper towel tubes
- pencils
- ping pong balls
- popsicle sticks
- rocks
- sand
- scissors
- tape
- twigs
- water

Note: You can modify materials, provide extra materials.



LOG CABIN

Materials: popsicle sticks, glue, cotton balls

1. Make the floor by placing two popsicle sticks down vertically a few inches apart. Drizzle glue all over them. Now line up popsicle sticks horizontally on top. Do not leave any space between sticks. Let dry.
2. When dry, begin making walls. Cut chinks in the corners to hold them in place. Put a dot of glue in the corner of each stick as you lay them in place. Place two sticks parallel to each other on opposite ends of the floor, then lay two sticks parallel to each other on the opposite side, so they are resting on top of the first layer.
3. *If you want a door or windows, cut the middle few inches out of enough sticks to span the height of the cabin for a door, and a smaller number for a window.

4. Continue stacking sticks as in Step 2, using the trimmed sticks in one row. (*Leave the empty spot in the middle if including a window or door.) Do not worry about the sagging sticks – you'll fix that later.
5. When the walls are high enough, make a roof. Cut two equilateral triangles of cardboard, with each side measuring the length of one popsicle stick. Glue a triangle to the top of the front and back walls.
6. Once dry, place popsicle sticks in horizontal lines across the two triangle roof pieces until you have made a pointed wooden roof. (*Trim popsicle sticks and glue upright on roof to make a chimney, if desired.) Set aside to dry.
7. Do not worry about the gaps between logs. Tear pieces of cotton and stuff it between the boards to make a warm and cozy cabin.

Lego® Dam



During this activity campers will have the opportunity to utilize their creativity in building a dam made of Lego building blocks and sand.

Preparations: Preview videos. Gather materials and find or create an open area.

Instructions:

Construction Club members will view the video links provided.



Encourage club members to discuss the videos and the concepts of why dams are built.

Provide children materials and encourage them to create their own structures. Remember, not two structures have to be the same.

Materials: internet access, Lego building blocks, sand, sensory table(s), water
"How the Hoover Dam was Built Ahead of Schedule"

<https://www.youtube.com/watch?v=NyKlSsIhXkk>

, "How a Dam Works"

<https://www.youtube.com/watch?v=PvJHjnELVSM>

Ask questions about the videos, ex:

"What are used to generate electricity?"

"What river runs through the Hoover Dam?"

"Where is the Hoover Dam located?"

Break down Construction Club members into groups of three or four.



See which group created a structure that can hold back a constant flow of water!

Beaver Dam



During this activity campers will have the opportunity to utilize their creativity in building a dam made of Lego building blocks and sand.

Preparation: Preview videos. Gather materials. Club members may need the opportunity to gather natural materials prior to activity from home environment.

Instructions:

Gather Construction Club members and display the videos.

Ask questions about the videos, ex:

"Where is the largest beaver dam located?"

"Why do beavers' teeth look orange?"

"Why are beavers so important?"

"What do scientist call the behavior of beavers building dams?"



Materials: containers, internet access, leaves, rocks, sand, sticks, twigs, water

"Dam Fun Facts about Beavers"

<https://www.youtube.com/watch?v=1cyPyEQ4OHI> ;

"Why Beavers are the SMARTEST Things in Fur"

<https://www.youtube.com/watch?v=Zm6X77ShHa8> ;

"How Beavers Build Dams"

<https://www.youtube.com/watch?v=yJjaQExOPPY>

Divide club members into groups of three or four.

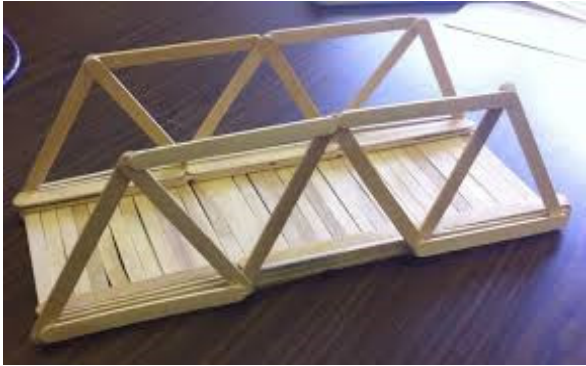
If they have not gathered materials prior, encourage club members to conduct a scavenger hunt to gather natural materials.



Provide containers to club members and encourage them to create their own beaver dams.

Allow students to test structures periodically with water. Encourage club members to problem-solve if their dam leaks water.

Popsicle Bridge



Materials: craft sticks, Elmer's White Glue®, internet access, paper, pencil, toy cars

"What Makes Bridges So Strong?"

<https://www.youtube.com/watch?v=oVOnRPefcno> ;

"Think Like An Engineer, Jessie Has a Problem"

<https://www.youtube.com/watch?v=RM04n0-QtNo> ;

"How to Build a Bridge with Only Popsicle Sticks and Glue"

<https://www.youtube.com/watch?v=COFJWcEOcOE>

During this activity campers will have the opportunity to utilize their creativity in building a dam made of Lego building blocks and sand.

Preparation: Preview videos. Gather materials.

Instructions:

Gather Construction Club members.

Inform members that they are going to build bridges out of popsicle sticks and glue.

Engage campers in a discussion about bridges, ex:

"What are different types of bridges?"

"Have you traveled across a bridge?"

"What was the name of the bridge(s) you crossed?"

Watch video(s) provided.

Ask questions about the video(s), ex:

"What shaped is utilized to make bridges? Why?"



"Why are suspension bridges created?"

"What are the steps engineers use to find a solution?"

Break members into groups of three or four.

Provide members pencil and paper and discuss how to create a blueprint for their bridge design.



After members have created their bridge design, provide them building materials.

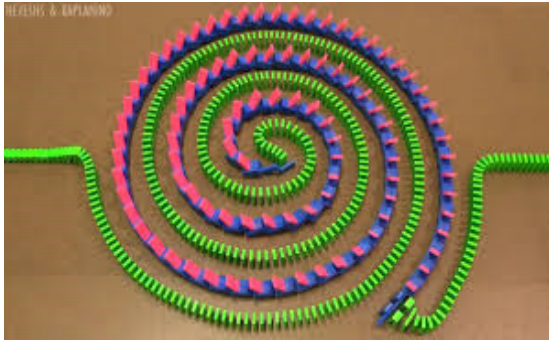
While members are building, have constant discussions about their designs and ask questions regarding strength of design, type of bridge, and utilization.

Encourage Construction Club members to test and redesign the bridges. Assist when necessary.

After bridges are completed, provide campers toy cars or other items to test strength.

Happy building!

Domino Chain Reactions



Materials: blocks, dominoes, internet access, ping pong ball, papers, paper towel tubes, pencils, tape, scissors, various items,

<https://www.youtube.com/watch?v=SDwlcJN3drE> ;
<https://www.youtube.com/watch?v=lo6x4eulY9g>

Preparation: Preview videos. Find or create a large open area. Gather materials.

Instructions:

Gather Construction Club members.

Inform them they are about to embark on a journey in creating the "Greatest domino chain reaction!"

Show members the videos and ask questions, ex:

"What materials were utilized?"

"How many attempts did it take to perfect the course?"

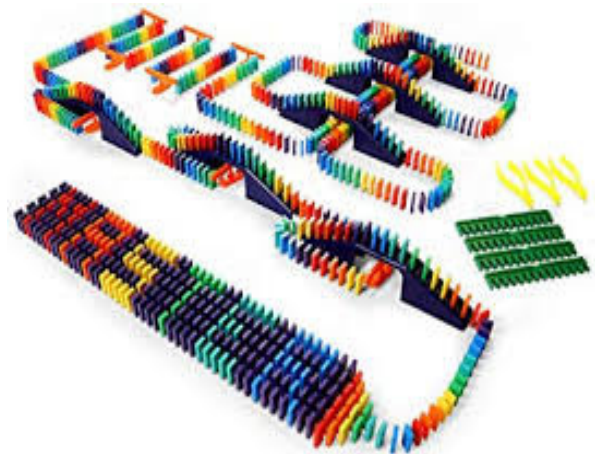
Break members into groups of three to four.

Discuss with each group what kind of domino chain reaction they would like to create.

Provide members papers and pencils to illustrate design.

After designs have been illustrated. Provide materials they would like to utilize for their domino chain reactions.

As members are building, ask questions about their concepts and designs.



Encourage members to problem-solve and work together to create their great domino chain reactions!

