Sam's Raft Adventure and Rescue

Tonight we are stepping into the shoes of engineers! We will be using the 6 STEM skills: Problem Solving, Creativity, Inquiry, Critical Thinking, the Engineering Design Process, and Collaboration to rescue Sam, the gummy worm. Sam is placed on top of the raft (cup) and the life vest, the peach ring, is under the cup. Sam cannot swim. Only the rescue device you create can be used to "move" Sam around (meaning if Sam falls off the raft, the rescue device needs to be used to save him, not your hands!) But be careful not to hurt Sam! Also, only the rescue devices can be used to move the other materials, such as the raft and life vests.

Step 1: Define the Problem
- What is our challenge today? What problem are we trying to solve? Talk with your family about how life vests are necessary for boating safety.

Step 2: Plan Solutions
- Discuss as a team what materials you can use to safely move Sam without falling into the Eagle River!
- How can your family retrieve Sam's lifejacket without using hands to pick up the cup?
- How can your family ensure Sam does not fall into the raging rapids (fall off the cup)?
- What is the best way to put his lifejacket on without touching him with hands and drowning him in the water?!

Step 3: Make a Model
- Next you will make model and start to experiment with combining materials to create your rescue device design.

Step 4: Test the Model
- Save Sam! Use your rescue device to lift the raft without knocking Sam over. As the raft is lifted, one of your family members must use part of the rescue device to pull the life vest from under the raft. Once the life vest is safely retrieved, talk as a family about how you will use your rescue device to put the life vest on Sam without hurting him.
- Did it work?

Step 5: Reflect and Redesign
- If your rescue device is not working for all steps, create a new solution and change the design of the device!
- What are some different ideas you used as a family? Did you learn from your mistakes? What happened when you tried again?