

Design Challenge: Gumdrops Structures

In this activity, your child will use gumdrops and toothpicks to build structures that complete various design challenges. Your child will be given free building time as well to explore the materials before beginning the challenge. They will then be asked to build off of what they've already created in order to complete the activity.



What You Need

- Gumdrops (or any other soft candy like jelly beans or fruit snacks)
- Toothpicks
- Book, full water bottle, or other item (to be used as a test weight)
- Ruler or tape measure
- Pen and paper for brainstorming and note-taking

What You Do

1. Give your child 10 gumdrops and 20 toothpicks to start. Allow them to explore the materials by asking your child to build whatever they would like.
2. After allowing your child to build freely for a while, ask them to take some notes on their creation. Ask your child to write down the height, width, and appearance of their structure. Then, ask your child how much weight they think their structure can hold. Test their idea by placing something heavy such as a book or full water bottle on their design.
3. Now, read the story at the beginning of the activity to your child. Ask your child to brainstorm ways in which they could change their current creation or build something new entirely. For example, ask your child to build a structure that can hold a few books, or a structure that is taller than two feet.
4. After your child has finished brainstorming their design, ask them to choose one of their ideas to build. Make sure to remind your child of the overall goal of their design.
 - This is an important step of the design thinking process because it teaches your child to prioritize the functionality of their design over personal preferences, and it prevents them from getting too emotionally attached to one design.
5. Now it is time for your child to actually build their design! Give your child room to test and create on their own, but help out if they need assistance.
6. Once your child has finished building, help them to test their creation.
 - a. If their design completes the challenge, congratulate them on their success.
 - b. If your child's design does not successfully complete their challenge, ask them what they think went wrong. Have your child go back to the original brainstorming and prototyping stages. Ask your child to redesign their structure and continue brainstorming and prototyping until their design is successful.
7. To finish the activity, ask your child a few final questions.
 - a. What did they learn during the initial exploration of the materials?
 - b. What different types of structures worked or did not work in each challenge?
 - c. What was the most challenging part of the activity? What was the most fun part?