Chair for a Bear

Lesson Overview: Students must create a chair for a stuffed bear or other animal that is approximately 12" tall. The chair should be sturdy and support the stuffed animal as it sits and be personalized for the stuffed animal. It should not slump over.
Suggested Time: 60-90 minutes

Learning Objectives:
- To get experience planning for a client
- To incorporating constraints and criteria
- To gain experience testing and iterating
- To understand the concept of sturdy building

Materials:
Interlocking building bricks, recycled and craft materials, or a combination

● Interlocking building bricks ● Cardboard ● Paper ● Tape ● Paperclips	● String ● binder clips ● pipe cleaners ● popsicle sticks ● Paper cups

Directions:
1. Explain that the engineering problem is to create a sturdy chair to support a stuffed animal. The chair must be able to hold up the stuffed animal and prevent it from falling out of the seat. Also, the chairs must be able to survive the drop test when dropped from their ankles. If different groups are using different stuffed animals, discuss how chair designs should accommodate the needs of each stuffed animal.
2. Show the students pictures of different chair designs and discuss the benefits of one chair to another.
3. Students begin by sketching their ideas for chairs. Have them label the pieces they think they will be using.
4. After they have sketched out an idea, they can begin building.
5. After ten minutes, stop for a mid-design share-out. Talk about what each group is going to do next and if they have already tested. Groups can share helpful building tips with each other.
6. Students should continue building.
7.Gather students to start testing their chairs by placing their stuffed animals on the chairs. If it breaks or does not support Mr. Bear, they should improve their design and test it a second time. Students can also drop their chairs from their ankles to test for sturdiness.
8. Give students time to iterate.
9. Conclude the lesson by reviewing the methods of construction for the sturdy chairs.

Possible Discussion Topics:
- What special considerations will your specific animal need? How will you serve this animal's needs with your chair?
- Did the animal fit in the chair?
- Did the animal stay upright or flop over?
- Did the animal look relaxed or straight?