Chair for Mr. Bear

Suggested Time

45 minutes

Challenge

In this activity, design and construct a chair that keeps Mr. Bear (a floppy stuffed animal) from falling backwards, forwards, to the left and to the right. The safety of Mr. Bear is in your hands.

Age

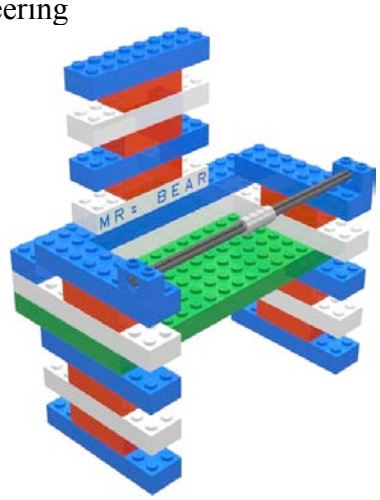
5-10

Topics

Building, Sturdiness & Familiarity With Different LEGO Pieces

Subjects

Engineering



Related Math & Scineces Concepts

- Forces
- Tension

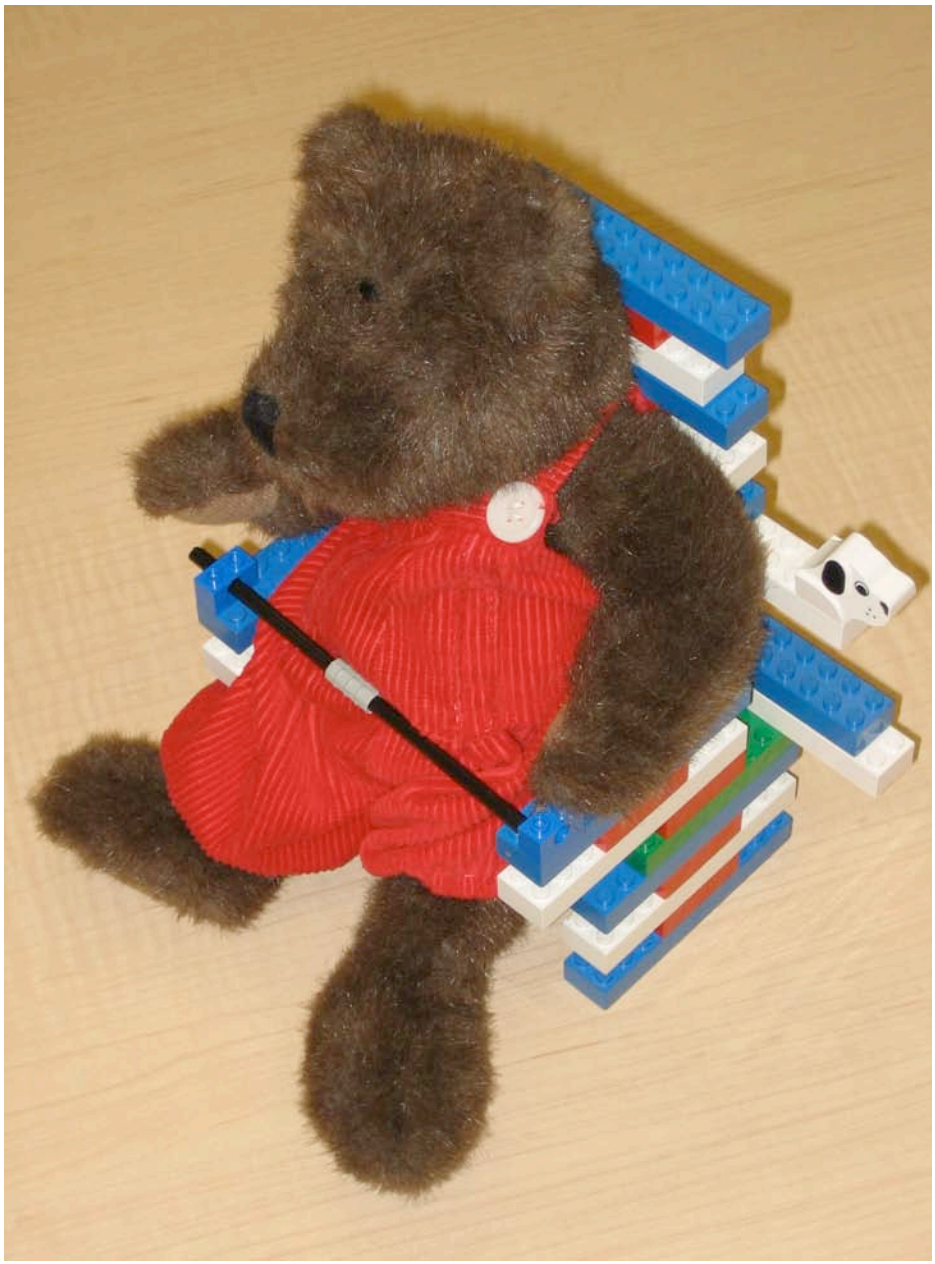
Materials

- Assortment of LEGO Pieces
- Several Floppy Stuffed Animals

Building Instructions

1. Decide what design requirements Mr. Bear will need (height, length and width).
2. Build a chair which can stand alone and support Mr. Bear from the front, back and both sides

In Action



Put the stuffed animal in the chair. Check to see whether or not Mr. Bear falls out in any direction.

Building and Programming Refrences

- Building With Bricks
- Building With Beams
- Building With Plates
- Axle Uses
- Connector Pegs & Bushings

Related Activities

- Sturdy Wall
- Tower
- Strongest Shape
- Sturdy Car: The Drop Test

Classroom Management

1. Introduce the names of LEGO pieces. Show the difference between a weak and strong structure. You can have example LEGO structures to demonstrate this.
2. Another basic LEGO building concepts to introduce is the difference in shapes: triangle, rectangle, and braced rectangle.
3. This is a great introductory activity to introduce programming and building. You can use this activity to introduce the engineering design process.
4. Demonstrate that 3 stacked plates = 1 beam/brick.
5. This activity can also be used to introduce forces. Explain that while the Earth is pulling you and objects around you down, many things are pushing up. Things taht push up include floors, bridges, and chairs. These structures must push up with a great enough force to equal the force exerted down on them.
6. Once you have introduced these concepts, introduce the activity. Mr. Bear sat on his chair and it broke. Now Mr. Bear has nowhere to sit. The students must build a chair that will not break when he sits on it and can support him from falling over.
7. Students can begin the activity by sketching out their ideas for a chair. Have them label the pieces they think they will be using.
8. After they have sketched out an idea, they can begin building.
9. Students can test their chairs by placing Mr. Bear in it and seeing if it is sturdy. If it breaks or does not support Mr. Bear, they should improve their design.
10. EXTENSIONS: 1) Build Mr. Bear a cup and/or foot holder. 2) Perform the drop test.