**Chair Lift Challenge**

**Student Worksheet:
Build a Chair Lift**

**◆ Research and Planning**

You are part of a team of engineers who have been given the challenge of building a chair lift to carry a ping pong ball up the mountain (from the floor of your classroom to the top of a desk or chair) using materials provided to you. Your lift must both carry the ball up the mountain and also back down without the ball dropping out. How you design your chairlift and the chair that will carry the ball, and what materials you use are up to you!

**◆ Design Phase**

You have been provided with many materials from which to design and build your own chairlift and chair. Consider which materials you would like to use, and list them in the box below. On a separate piece of paper, draw a diagram of the system you intend to build.

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| --- |
| Parts Required: |

**◆ Build it! Test it!**Next build your chairlift and test it. You may share unused building materials with other teams -- and trade materials too. Be sure to watch what other teams are doing and consider the aspects of different designs that might be an improvement on your team's plan.

You may decide to completely change your design when in the manufacturing phase -- and you may ask for additional materials, or try different solutions as you build.

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**Student Worksheet:
Build a Racquet**

◆ **Reflection**

Complete the reflection questions below:

1. How similar was your original design to the actual chair lift your team built?

2. If you found you needed to make changes during the construction phase, describe why

your team decided to make revisions.

3. Was your chairlift able to carry the ping pong ball up and down the mountain without it falling out of the chair you designed?

4. Which chairlift system that another team developed was the most effective or interesting to you? Why?

5. Do you think that this activity was more rewarding to do as a team, or would you have preferred to work alone on it? Why?

6. If you could have used one additional material (tape, glue, wood sticks, foil -- as examples) which would you choose and why?