

BACKPACK CHALLENGE (PART 2)

Activity Objective: Girls use basic design and engineering skills to design a backpack.

Toward Leadership Outcomes:

Through this activity, girls will:

- ✓ Gain practical life skills—Girls will have increased confidence in their ability to succeed in math and science. **(Discover)**
- ✓ Become resourceful problem solvers—Girls can use their knowledge and skills to set up and implement creative and effective “action plans,” locate tools and resources they need, and know when, where, and how to enlist help from others. **(Take Action)**

Experience Overview:

2 minutes	<i>Introduction (Talking Points)</i>
40 minutes	<i>What's It Cost?</i>
5-10 minutes	<i>Reflection/Discussion</i>

Supplies Needed:

- ✓ Paper and pens or pencils (enough for each girl)
- ✓ Rulers

Prepare Ahead:

- ✓ Make copies of the “What’s It Cost?” handout.

Step-by-Step Instructions:

» Introduction (Talking Points) (2 minutes)

- ✓ Say something like: “If you are going to sell a product, it is important to not only understand the design process and how a product is manufactured or made, but also to understand how much it costs to make it. In order to know how much to budget for the manufacturing and

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DISCOVER/ TAKE ACTION:

- » Gain practical life skills
- » Become resourceful problem solver

to determine how much you will sell the backpack for, you have to figure exactly what it costs to make your product. Today we will look at the designs we already made for new backpacks and figure out how much it would cost to actually manufacture them.”

» Backpack Challenge (40 minutes)

- ✓ Separate the girls into small groups. They can be the same groups from Science and Tech Trek Activity 5A or new groups.
- ✓ Distribute pens or pencils and the “What’s It Cost?” handout to each group.
- ✓ Have each group determine the amount of material necessary to create their design and use the “What’s It Cost?” handout to calculate the costs.

» Reflection/Discussion (5-10 minutes)

Ask girls:

- ✓ “How did you determine the cost of your labor—how much an employee gets paid by the hour?”
- ✓ “Do you know where things are made? Choose an item of clothing you are wearing, your shoes, or something in your own backpack. Does it have a label? Does it say where it was made? How do you think businesses make decisions about where to manufacture their products?”
- ✓ “Choose another item of clothing you are wearing. How much do you think it costs in materials to make? How much did you pay for it? Who made the profit, and how much do you think they made?”