

# CONNECTIONS TO SCIENCE GUIDES

GEORGIA YOUTH SCIENCE & TECHNOLOGY CENTERS, INC.

## THOSE SHOES BY: MARIBETH BOELTS

CAN'T FIND THE BOOK?  
READ-ALOUDS ARE AVAILABLE  
ON YOUTUBE.



### ASK

- What makes something popular or trendy? Is there something popular you wish to own? Why?
- What are some physical properties of your shoes?
- What makes a good shoe?
- Have you ever thought about being a footwear design engineer?

### EXPLORE SHOE DESIGNER

#### Materials:

- Cardboard
- Pencil
- Scissors
- Paper
- Tape
- String

#### Directions:

- Begin by tracing your foot onto a piece of cardboard.
- Carefully, cut around the outline of your foot.
- Using paper, tape, and string, design a shoe.
- As you are designing your shoe, think about:
  - What are the physical properties of my materials (i.e., color, texture, hardness, strength, flexibility, etc.)?
  - What are the strengths of using these materials to make my shoe? What are the weaknesses?
  - Are there other materials I could use to make my shoe even better?

#### Fun Facts:

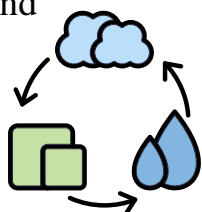
- Shoes are about 8,000 years old. The first shoes were made from wood and animal skin.
- Until the 1300s, there was no standard measurement for shoes. King Edward II decided that barleycorns should be used as the basis for standardized shoe measurement.



## EXPLAIN

### PROPERTIES OF MATTER

Everything around us is made up of matter. Matter is anything that has mass and takes up space. Matter exists in four states: solid, liquid, gas, and plasma. Matter also has physical properties such as color, mass, length, texture, hardness, strength, absorbency, and flexibility.



## BACKGROUND

The Georgia Youth Science and Technology Centers, Inc. provides quality programs for teachers of STEM subjects that improve the teaching and learning process at the kindergarten through eighth grade levels. We present programs that change students' perceptions and inspire an appreciation for science, technology, engineering, and mathematics subjects.

## ABOUT US

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## EXTEND

### PHET STATES OF MATTER- BASICS

#### CHEMISTRY



Recognize that different substances have different properties, including melting, freezing and boiling temperatures.

[www.phet.colorado.edu](http://www.phet.colorado.edu)



## STEM CAREER

### FOOTWEAR DESIGN ENGINEER

A footwear design engineer works to make optimal shoe designs. At work, footwear design engineers analyze the physical properties of materials such as shock absorption, flexibility, fit, traction, sole wear, breathability, and weight to create shoes. If you are interested in creating shoes, being a footwear design engineer might be for you!



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