Copper in the Home

Background

Modern civilization would be practically impossible without copper. Most, if not all, products that use electricity contain some copper. As with all materials, it is important to recycle copper where possible. The rate of copper recycling is actually higher than any other engineering metal. Copper is 100% recyclable and about 12% of refined copper comes from recycled material. But how much copper is even available for recycling? One part of the answer to this question is how much copper is found in homes.

In this activity, you will conduct a home survey with your child of the amount of copper in your household. First, help your child catalog the various copper-containing devices and objects in your home. Then, research online to estimate the amount of copper in each device or object. The aim is to come up with a number for the total amount of copper in your home. (On average, a single-family home uses 439 pounds of copper.)

Get Started!

Get started by asking your child the following questions:
*   What types of household items do you think are made from copper?
*   How many pounds of copper do you think is in our home? A gallon of water weight about 8.4 pounds as a reference.

Investigate

1. Explain to your child that you will work together to catalog products in your home that may contain copper.

2. Use the provided worksheet to begin the activity and collect your data.

3. After you have a list of items, research online to estimate the amount of copper for each product in their list. This data will be used to determine the total amount of copper used in all products your home.

    Suggested sites include:
    *   *https://www.copper.org*
    *   *http://www.coppermatters.org/copper-facts/*

4. Assist your child in estimating the total amount of copper in your home.

Share

Pool the results from other households or community facilities you have access to. Explain how pooling data provides a bigger sample size, and hence more reliable statistics—in this case the average amount of copper in a home. Consider inviting your child to present their findings to the rest of your family or friends.

Discuss

Invite your child to brainstorm with you the size of potential recycling resource in domestic products in the United States.

Next Steps

Use the internet to research demographic data online to calculate the total amount of copper nationally. How much copper is there in your home compare to the national average?

Additional Optional Resources

http://www.copper.org/education/c-facts/facts-print.html
http://www.copper.org/education/c-facts/home/
http://resources.schoolscience.co.uk/CDA/14-16/chemistry/copch0pg1.html
http://www.usesof.net/uses-of-copper.html

Copper in the Home Worksheet

Topic: How much copper is there in your home?

In this activity, you will survey the amount of copper in your home. You catalog copper-containing devices and objects. Then you research online to estimate the amount of copper in each device or object. You will come up with a number for the total amount of copper in your home.

Hint: Be sure to include electronic devices and functional items such as copper wiring and copper piping.

Procedure

1. Use the table below to catalog copper-containing devices and objects. Use an additional sheet of paper if necessary.

1. Once you have completed your list, research online to estimate the amount of copper in each device or object.

1. Complete the questions below.

How many devices and objects in total did you catalog?

What is the total estimated amount of copper in your home?

Compare the number of devices and objects that you catalogued in total with another student's data.

What is the class average for the total estimated amount of copper in a home?

Use the class average for the total estimated amount of copper in a home to calculate the approximate amount of copper in homes nationally.

Copper-Containing Devices and Objects

NAME_____

Total Number = total number of similar objects or devices in your home
Amount of Copper = amount of copper per device of object (g)
Total Amount of Copper = total number x amount of copper (g)

Object or Device	Total Number	Amount of Copper	Total Amount of Copper

Continue on an additional sheet of paper if needed.