## Puzzle \#84: <br> Safekeeping? <br> Real challenges for people living in the real world

## Be safe!

Can you get hurt? Can someone else get hurt?


ELEMENTARY


ADVANCED


PROFESSIONAL

## MoeZone Puzzle \#82 solutions: That's pretty slick!

## ELEMENTARY PUZZLE

How many things do you have in your house that uses electricity? Which ones do you think uses the most?
Lincoln Elementary Engineering, Cool! students: Three TV', phone chargers, gaming systems, lights, refrigerators, microwaves, heaters, Christmas lights, fans, radios, toasters, mixers, clocks, washers, dryers-there is a lot of stuff. Heaters seem to use the most energy.

MOE'SNOTE: That was a fun exercise, to close our eyes and walk through the house in our imagination. We could "see"so much.

## ADVANCED PUZZLE

Compare the electricity you use in your house. Has the number of electrical uses increased or decreased over the years? Where does your electricity come from?
Lincoln Elementary Engineering, Cool! students: It has gone way up; they didn't even have computers until lately. Electricity comes from the power companies.

MOE'S NOTE: We did the math. The Range has about 86,000 households and that number is growing. That's quite a few of... (see elementary puzze)!

## PROFESSIONAL PUZZLE

Populations are increasing and electronic gadgets are more prevalent. How are we going to power all of the electricity needs in our houses in the years to come?
This is the theme of this year's Green Inventors Expo to be held at Earth Fest on April 21, 2018. Start getting your thinking caps on and submit your idea! If you want information on the Expo, email Moe Benda at mbenda@d.umn.edu. The Green Inventors Expo is put on by the Range Engineering Council and Earth Fest is put on by the Iron Range Partnership for Sustainability.

GRAND CHALLENGE: The United States has about 125 million households-twice as many as a few decades ago. Along with this growth, our use of electronics is also going through the roof with computers, cell phones and gaming systems, along with our refrigerators and TVs. On the Iron Range, we have about 86,000 households, each in need of electricity. If our population keeps growing and the amount of electricity keeps going $u p$, the electrical generating companies won't be able to keep up! How can we generate more energy to meet our needs now and into the future or how can we reduce the energy we use?

