

Finding a Bad Coin



Assume that you have 8 coins, and you know that 7 are OK but one is bad. You know that the bad coin has a different weight than the good coins, but you don't know whether it's heavier or lighter.

Figure out how, using only a balance scale, you can find out which is the bad coin using just 3 weightings. Hint: Find a way to determine that half of the coins are OK with just 1 weighing.

Now do the same thing assuming that you have 9 coins, one of which is bad. (Still use just 3 weightings to find the bad coin.)

And now for a real challenge, do the same thing assuming that you have 12 coins.

Your peer leader can help if you really get stuck. Also, the peer leader will discuss how to form a general solution and some computer science ideas that it involves once you have worked on the problem.

Creating a clock

In this programming exercise you will create something like a clock. It will display all the times from 4:00 to 6:00 in five minute increments. Thus, it will show:

4:00 then 4:05, then 4:10, ..., 4:55, 5:00, 5:05, 5:55, 6:00

To do this think about:

- loops with the complex version
- 3D text to show the clock
 - look dragging in text to change its display
 - look at the World string functions. They allow you to change a number to a string and join strings together

Note that the solution will likely have times like: 5.0:10.0. Alice shows one digit past the decimal point by default.

Work in pairs to design a solution and then code it up.