

# Puzzle of the Week

## *Pan Balance – 1*

A pan balance tells you when its two sides are carrying the same amount of weight or whether one side is heavier than the other.

**THE CHALLENGE:** You have eight coins. Seven of the coins weigh the same amount. The eighth coin is a counterfeit and is just a tiny bit lighter than the others. Use two weighings on the pan balance to find the counterfeit coin.



**EXPLORATION:** Instead of having eight coins, suppose you had nine coins with one counterfeit - could you still identify it with two weighings? What is the largest number of coins you could have and still identify a counterfeit in two weighings? How about three weighings? Four weighings? See if you can find a pattern.