

# Puzzle of the Week

## *Pan Balance – 2*

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 some coins. All the coins but one weigh the same amount. The remaining coin is a counterfeit and is just a tiny bit lighter or heavier (you don't know which). What's the maximum number of coins you can have and be able to decide which coin is the counterfeit with just two weighings?



**EXPLORATION:** Investigate using three weighings with more coins. How many coins can you have and still be able to find the counterfeit in three weighings? How about four weighings – can you determine the counterfeit out of 16 coins with four weighings?