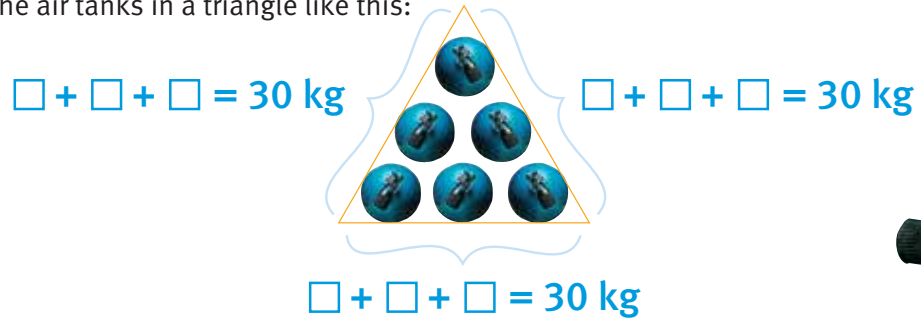


Dive Tank Dilemma

ACTIVITY ONE

Six divers are going on a diving expedition. Each diver's air tank has a different mass. The masses of the tanks are consecutive numbers from 8 to 13.

The total mass of the air tanks needs to be distributed evenly around the boat. The divers arrange the air tanks in a triangle like this:

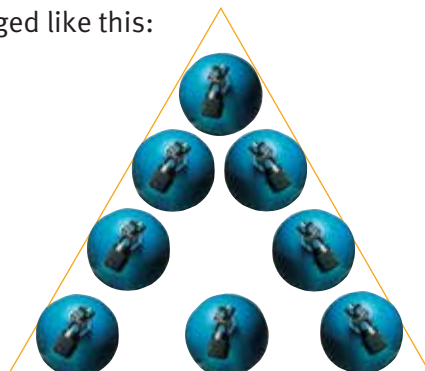


- The air tanks along each side of the triangle weigh 30 kilograms altogether. How are the tanks arranged? (Note that the numbers on each side of the triangle do not need to be consecutive.)
- The divers rearrange the tanks so that each side of the triangle weighs a total of 31 kilograms. What is the tank arrangement now?
- The divers rearrange the tanks again so that each side now totals 33 kilograms. How are the tanks arranged now?
- Six consecutive numbers can be arranged into a triangle pattern where each side totals 69. The same six numbers can be arranged into two other triangle patterns where each side totals 71 and 72 respectively.
 - What are the six numbers?
 - How are the sides arranged to get each total?



ACTIVITY TWO

On another diving expedition, there are eight divers in the boat. Their tanks are arranged like this:



- Which consecutive numbers give side totals of 39 kilograms?
- How are the sides arranged to get these side totals?

