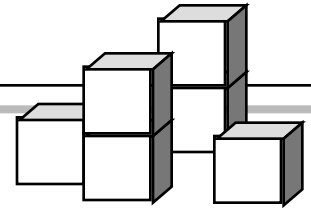


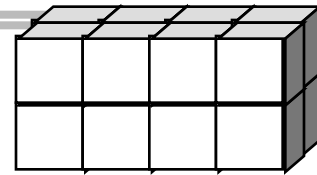
# Blocks & Cubes



*Objective: Solve problems involving mass (weight), using g and kg.  
Materials: Metric cubes, pattern blocks, simple balance.*

4

- Knowing that each metric cube weighs 1 g, what is the weight of each pattern block?
- Caution! Weighing a single pattern block may not give you a very accurate measurement!
- How many different combinations of pattern blocks can you find where each set has a mass of 50 g? Check your answers on the balance.
- Can you use what you know to find sets of blocks which have a mass of 75 g?
- Describe any patterns you see between the masses of the blocks and sizes of the blocks.



*Objective: Construct objects of a specific volume, expressed in  $cm^3$ .  
Materials: Metric cubes, three 6-sided dice, simple balance.*

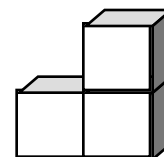
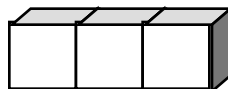
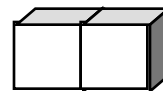
- Roll all three dice at the same time.
- Build a three-dimensional solid (out of the linking metric cubes) that has as the measurements of its sides the values you rolled with the dice. Try building another 3-D solid but switching the values for the length, width and height. What do you notice?
- Take one of the figures above apart and using the same number of blocks construct any shape or figure of your choice. Compare the masses of the two objects using a balance. Knowing that all the cubes have the same mass and the same size, what is the volume of each of the objects you built?

5

*Objective: Represent visually, a pattern to clarify relationships and to verify predictions.  
Materials: Hexalink cubes, isometric dot paper.*

6

- There is only one way to arrange a single block:
- There is only one way to arrange two blocks linked:
- There are only two ways to arrange three blocks linked:



- How many different ways are there to arrange four blocks linked?