

# Boxed Biscuits

You need: coloured cubes or counters (optional)

ACTIVITY

The biscuit factory packs mixed biscuits in big boxes.  
The boxes come in different sizes:



Customers say that they like buying the big boxes but that often some of the biscuits get stale before they are eaten.

The factory staff investigate using smaller packs inside each box. They need to keep the same mix of biscuits in each pack as there are in each big box. Each box must also still contain the same number of biscuits as before.

They realise that the 24 box could contain four packs with these biscuits in them:



Tom, the manager, decides to write the formula for each pack on the noticeboard as fractions. For the 24 box, he wrote this:

$$\begin{array}{l} \text{apricot } \frac{3}{6} \text{ or } \frac{1}{2} \\ \text{berry } \frac{3}{6} \text{ or } \frac{1}{2} \end{array}$$

The packers knew from this how many of each biscuit to put in each pack.

- How else could the 24 box be divided into identical bags?
  - What fractions would Tom write down for each choice?
- For each of the 27, 36, and 100 boxes, write fractions to show what identical packs could be made.