

# LET'S DO MATH – CRISPY CRISPS PROBLEM

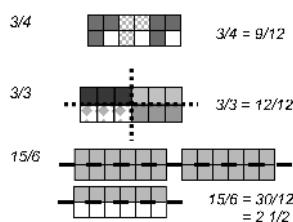
## Before (Getting Started)

How much is each fraction of a dozen eggs?

- a)  $\frac{3}{4}$  b)  $\frac{3}{3}$  c)  $\frac{15}{6}$



### Solution 1



### Solution 2

$$\begin{aligned}\frac{3}{4} &= (\frac{3}{4}) \times (\frac{3}{3}) = \frac{(3 \times 3)}{(4 \times 3)} = \frac{9}{12} \\ \frac{3}{3} &= (\frac{3}{3}) \times (\frac{4}{4}) = \frac{(3 \times 4)}{(3 \times 4)} = \frac{12}{12} \\ \frac{15}{6} &= (\frac{15}{6}) \times (\frac{2}{2}) = \frac{(15 \times 2)}{(6 \times 2)} = \frac{30}{12} = 2\frac{1}{2}\end{aligned}$$

## During (Working On It)

### Crispy Crisps Problem

On Day 1 of the Fun Fair, the Grade 5s took 7 pans of Crispy Crisps to sell. Each pan was cut into 4 treats. They sold  $5\frac{1}{4}$  pans of these treats. On Day 2, they decided to cut their 6 new pans of Crispy

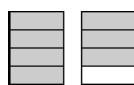
Crisps into 8ths and sell them at 2 for the price of one. They sold 44 of the treats cut into 8ths. The teacher cut the treats remaining from days 1 and 2 into 12ths to share with the students in the class. For a class of 28 students, were there enough so that each student got  $\frac{1}{12}$ th of one pan?

## After (Consolidation)

Anticipating Student Responses:

### Solution 1

Day 1  
7 pans in 4ths or 28 Crisps  
 $5\frac{1}{4}$  pans sold  $1\frac{3}{4}$  pans left or  
7 Crisps  $\frac{7}{4}$  of a pan  
  
Day 2  
6 pans in 8ths or 48 treats  
40 sold so 8 Crisps left or  $\frac{8}{8}$  of a pan  
  
After the Fair  
 $1\frac{3}{4}$  and  $\frac{8}{8}$  were left  
 $16/16 + 12/16 + 16/16 = 44/16$   
 $44/16 = 22/8 = 11/4 = 33/12$   
Yes there were 33 pieces for the 28 students.



### Solution 2

Day 1  
28/4 prepared and  $5\frac{1}{4}$  pans is  $21\frac{1}{4}$  sold,  $7\frac{1}{4}$  left  
  
Day 2  
48/8 prepared and 40/8 sold, 8/8 left  
  
After the Fair  
 $7\frac{1}{4} = 7\frac{1}{4} \times (2/2) = 14/8$   
 $14/8$  and  $8/8 = 22/8$   
 $22/8 / (2/2) = 11/4 \times (3/3) = 33/12$   
33 > 28 so there is enough for each student to get  $\frac{1}{12}$ .



### Solution 3

Day 1  
 $1\frac{3}{4}$  pans remain   
  
Day 2  
1 pan remains 

### After the Fair

2  $\frac{3}{4}$  pans remain cut into 12ths – draw folding lines  
 $33/12$  

## Coordinating Student Discussion for Learning:

Why might solution 1 be chosen first for student discussion, followed by solutions 2 and 3?

- solution 1 → using a paper-folding-like drawing to represent the pans of 8ths as pans of 4ths are divided down the middle and the remaining Crisps are split into 16ths and combined. Then dividing by 2/2 twice makes equivalent fractions,  $44/16$  to  $22/8$  then to  $11/4$ . By multiplying  $11/4$  by  $3/3$ , there is  $33/12$  left over →  $33 \times 1/12$  which is more than needed for 28 students (i.e.,  $28 \times 1/12$ )
- solution 2 → using ratio table strategies – dividing by 2/2 and then multiplying by 3/3.
- solution 3 → focused on whole pans of Crisps remaining, using mixed fraction  $2\frac{3}{4}$  to write as 12ths.

## For Professional Discussion:

- What if the Problem was written this way:  
On Day 1 of the Fun Fair, the Grade 5s took 7 pans of Crispy Crisps to sell. Each pan was cut into 4 treats. They sold  $5\frac{1}{4}$  pans of these treats. On Day 2, they decided to cut their 6 new pans of Crispy Crisps into 8ths and sell them at 2 for the price of one. They sold 44 of the treats cut into 8ths. Were there enough Crispy Crisps for the class to fill a special order for 3 full pans of treats?
- Would the anticipated solutions shown still be appropriate for this version of the problem? How do you know?