

# Fraction Code

Each letter of the alphabet is represented by a simplified fraction.

A	$\frac{1}{2}$										
B	$\frac{1}{3}$	C	$\frac{2}{3}$								
D	$\frac{1}{4}$	E	$\frac{3}{4}$								
F	$\frac{1}{5}$	G	$\frac{2}{5}$	H	$\frac{3}{5}$	I	$\frac{4}{5}$				
J	$\frac{1}{6}$	K	$\frac{5}{6}$								
L	$\frac{1}{7}$	M	$\frac{2}{7}$	N	$\frac{3}{7}$	O	$\frac{4}{7}$	P	$\frac{5}{7}$	Q	$\frac{6}{7}$
R	$\frac{1}{8}$	S	$\frac{3}{8}$	T	$\frac{5}{8}$	U	$\frac{7}{8}$				
V	$\frac{1}{9}$	W	$\frac{2}{9}$	X	$\frac{4}{9}$	Y	$\frac{5}{9}$	Z	$\frac{7}{9}$		

Work out the sum in each box and simplify your answer to decode these words or names. Do **NOT** use a calculator.

Example  $\frac{1}{7} + \frac{4}{7}$   $1 - \frac{1}{5}$   $\frac{1}{2} + \frac{1}{4}$  =  $\frac{5}{7}$   $\frac{4}{5}$   $\frac{3}{4}$  = **PIE**

1.  $\frac{1}{5} + \frac{2}{5}$   $1 - \frac{3}{7}$   $\frac{1}{2} + \frac{1}{8}$

2.  $\frac{5}{6} - \frac{2}{3}$   $\frac{1}{2} + \frac{3}{10}$   $\frac{1}{3} - \frac{1}{21}$

- |     |                                  |                                   |                                   |                                   |                                |
|-----|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------------|
| 3.  | $1 - \frac{2}{3}$                | $\frac{1}{3} + \frac{1}{6}$       | $\frac{3}{4} - \frac{5}{8}$       | $\frac{3}{16} + \frac{7}{16}$     |                                |
| 4.  | $2 \times \frac{1}{3}$           | $\frac{2}{3} \times \frac{3}{4}$  | $\frac{1}{2} \times \frac{1}{4}$  | $\frac{2}{5} \times \frac{5}{8}$  |                                |
| 5.  | $\frac{3}{4} \times \frac{5}{6}$ | $\frac{2}{3} \times \frac{6}{7}$  | $6 \div 14$                       | $\frac{1}{3} \div \frac{3}{5}$    |                                |
| 6.  | $\frac{1}{2} \times \frac{4}{5}$ | $\frac{1}{4} \div 2$              | $\frac{1}{4} \div \frac{1}{2}$    | $\frac{5}{6} \times \frac{6}{7}$  | $\frac{1}{2} \div \frac{5}{6}$ |
| 7.  | $\frac{5}{8} - \frac{1}{4}$      | $\frac{3}{4} + \frac{1}{20}$      | $\frac{2}{3} \times \frac{9}{14}$ | $\frac{1}{2} \div \frac{3}{4}$    | $\frac{1}{12} + \frac{2}{3}$   |
| 8.  | $2 \times \frac{3}{16}$          | $\frac{5}{6} - \frac{7}{30}$      | $\frac{3}{8} \div 3$              | $\frac{2}{5} + \frac{7}{20}$      | $\frac{2}{3} \div \frac{4}{5}$ |
| 9.  | $3 - 2\frac{1}{7}$               | $\frac{5}{8} \div \frac{5}{7}$    | $\frac{2}{3} + \frac{2}{15}$      | $\frac{1}{2} \times 1\frac{1}{4}$ | $1\frac{1}{8} - \frac{3}{8}$   |
| 10. | $\frac{1}{7} + \frac{4}{21}$     | $\frac{2}{5} \times 1\frac{1}{4}$ | $\frac{5}{9} \div \frac{2}{3}$    | $1 \div 1\frac{1}{3}$             | $1\frac{1}{12} - \frac{5}{6}$  |
| 11. | $\frac{1}{30} + \frac{1}{6}$     | $3\frac{1}{2} \div 7$             | $1\frac{1}{2} \times \frac{2}{9}$ | $1\frac{1}{4} - \frac{9}{20}$     | $\frac{1}{2} \div \frac{7}{8}$ |

$\frac{2}{9}$   $\frac{3}{4}$   $\frac{1}{7}$   $\frac{1}{7}$   $\frac{1}{4}$   $\frac{4}{7}$   $\frac{3}{7}$   $\frac{3}{4}$  !

Now write a message using fraction sums and the code and swap it with a friend.

## Fraction Code – Teachers' Notes and Answers

You can add a bit of fun to four rules work with fractions using this activity.

It should help build confidence as they work because if they get one wrong, the letters probably won't form a word or name.

1 to 3 only use addition and subtraction.

4 to 6 only use multiplication and division.

7 to 11 use all four rules.

9 to 11 include mixed numbers.

Note that the fractions coded go systematically from a denominator of 2 to 9 so there are no higher denominators. That means the addition and subtraction can all be done by just changing one denominator.

The answers are:

1. HOT
2. JIM
3. BART
4. CARD
5. TONY
6. GRAPH
7. SINCE
8. SHREK
9. QUITE
10. BAKED
11. FABIO

If pupils go on to write their own words or messages using the code you might want to let them use calculators to check before swapping!