

Crack the code

Children work together to reason and think logically to crack a code.

Skills practised:

- Multiplying single-digit numbers
- Using mental multiplication and division strategies

Conjecture: *Given sufficient information you can crack the code – you can also invent a code for others to crack.*

What to do:

Children work individually or in pairs.

This table is the D times table. But what is D?

Each letter represents one digit 0 - 9

$$J \times D = BJ$$

$$H \times D = BF$$

$$C \times D = BE$$

$$F \times D = C$$

$$E \times D = FH$$

$$D \times D = K$$

$$K \times D = FG$$

$$G \times D = FB$$

$$B \times D = D$$

$$A \times D = A$$

HINT: Which line has D as an answer? So what must the first number be?

Now solve these:

- $H \times FBJ =$ Write the answer in letters and then read it backwards!
- $FAC \div F =$ Write the answer in letters.
- Double DK = then $JG + DF =$ Write the first answer in front of the second in letters.

Make up your own code for a different table. Can your partner solve it?

Aim:

- To use logical thinking to solve a puzzle

Minimum number of calculations expected
20

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$C \times D = BE$	$F \times D = C$
$E \times D = FH$	$D \times D = K$
$K \times D = FG$	$G \times D = FB$
$B \times D = D$	$A \times D = A$

Now solve these:

- $H \times FBJ =$
Write the answer in letters and then read it backwards!
- $FAC \div F =$
Write the answer in letters.
- Double $DK =$ then $JG + DF =$
Write the first answer in front of the second in letters.

$B \times D = D$ so
 $B =$

Challenge

Make up your own code for a different table. Can your partner solve it?