# Position and direction

**Busy Ant Maths**

# Year 5 Maths Newsletter 2

## HERE'S THE MATHS

This week your child will be exploring translations of 2-D shapes. Translation is sliding a shape without rotating or flipping it. The shape does not change when it is translated. Translating shapes in several directions forms repeated tiling patterns. Your child is learning to explain where a shape will be after a translation on a coordinates grid.

Date: _____        Name: _____

## ACTIVITY
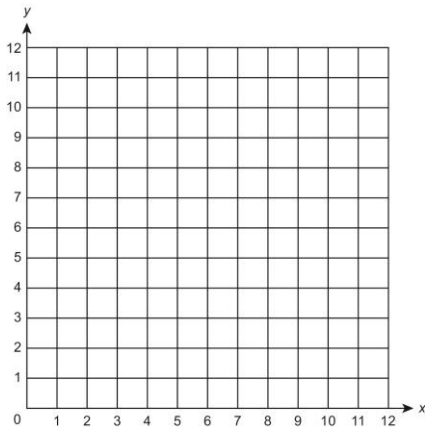


**You will need:**
- pencil, ruler and rubber
- 1–12 dice

**What to do**
- Roll the dice twice to give a set of coordinates and plot the point.
- Repeat this twice more so the three points make a triangle.
- Roll the dice to determine the *x*-coordinate translation.
- Roll again to determine the *y*-coordinate translation.
- Work out the new coordinates.
- Rub out the translations and repeat with new figures.

## QUESTIONS TO ASK

What is the mnemonic that helps you remember the order of coordinates? ('Along the corridor and up the stairs', so *x* coordinate first.)

Where do you see repeating patterns in everyday life?

Explain what 'translation' means when used in maths.

### MATHS TOPICS

These are the maths topics your child will be working on during the next three weeks:
- Multiplication and division
- Fractions
- Position and direction

### KEY MATHEMATICAL IDEAS

During these three weeks your child will be learning to:
- multiply numbers mentally drawing upon known facts
- compare and order fractions with denominators that are all multiples of the same numbers
- recognise where a shape will be after a translation on a coordinates grid.

### TIPS FOR GOOD HOMEWORK HABITS

Help your child to read any instructions and discuss the homework before they start, ensuring that they fully understand the task.

# Multiplication and division

Your child is learning to multiply numbers mentally drawing upon known facts, e.g. × 9 and × 99. For example, to multiply by 9, first multiply by 10 and adjust, e.g. 67 × 9 = (67 × 10) − 67 and to multiply by 11, first multiply by 10 and adjust, e.g. 67 × 11 = (67 × 10) + 67.

## ACTIVITY

**What to do**
- One person starts the timer.
- Second person turns over cards to make four 2-digit numbers.
- Turn over a piece of paper to determine what to multiply by the first number by.
- Continue until all four answers have been calculated using a method of choice.
- Stop the timer and check the answers.
- Change roles.
- The winner is the person with the shorter time. (You could discuss if this is fair because some number swill be easier to multiply than others.)

**You will need:**
- pack of cards with 10s removed (picture cards represent zero)
- 4 pieces of paper marked × 9, × 99, × 11, × 101
- timer (or phone with timer)

**Variation**
- Use pieces of paper with × 25, × 50, × 49, × 39 or other numbers.

## QUESTIONS TO ASK

How do you multiply by 11 (101) mentally?

How can you multiply mentally by 50?

How do you multiply by 9 (99) mentally?

How can you multiply mentally by 25?

What is 38 × 25?

What is 50 × 34?

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# Fractions

This week your child is continuing to explore fractions. They practise counting forwards and backwards in simple fraction sequences, e.g. $\frac{2}{5}, \frac{4}{5}, 1\frac{1}{5}, 1\frac{3}{5}$. They compare and order fractions with denominators that are all multiples of the same numbers, e.g. halves, quarters and eighths. They need to work out the multiples of the denominator and find the lowest common multiple (LCM), e.g. to add $\frac{2}{3} + \frac{1}{12}$, the LCM of 3 and 12 is 12,

so: $\frac{2}{3} + \frac{1}{12} = \frac{8}{12} + \frac{1}{12} = \frac{9}{12} = \frac{3}{4}$.

## ACTIVITY

|  | Column 1 | Column 2 | Column 3 |
|---|---|---|---|
| Fraction Family 1 | $\frac{1}{2}$ | $\frac{1}{4} \ \frac{3}{4}$ | $\frac{1}{8} \ \frac{3}{8} \ \frac{5}{8} \ \frac{7}{8}$ |
| Fraction Family 2 | $\frac{1}{3} \ \frac{2}{3}$ | $\frac{1}{6} \ \frac{5}{6}$ | $\frac{1}{12} \ \frac{5}{12} \ \frac{7}{12} \ \frac{9}{12} \ \frac{11}{12}$ |
| Fraction Family 3 | $\frac{1}{2}$ | $\frac{1}{5} \ \frac{2}{5} \ \frac{3}{5} \ \frac{4}{5}$ | $\frac{1}{10} \ \frac{3}{10} \ \frac{7}{10} \ \frac{9}{10}$ |

**What to do**
- One person selects a fraction family and then chooses one fraction from column 1, one from column 2 and one from column 3.
- Write them down and change them to the same denominator.
- Order them from smallest to largest.
- Second person checks the order.
- Change roles and repeat with a new fraction family and choices.
- Continue for 10 minutes.

## QUESTIONS TO ASK

Start at 5 and count backwards in quarters.

Which is bigger $\frac{3}{4}$ or $\frac{5}{6}$?

Give two fractions equivalent to $\frac{3}{4}$.