

Getting Started

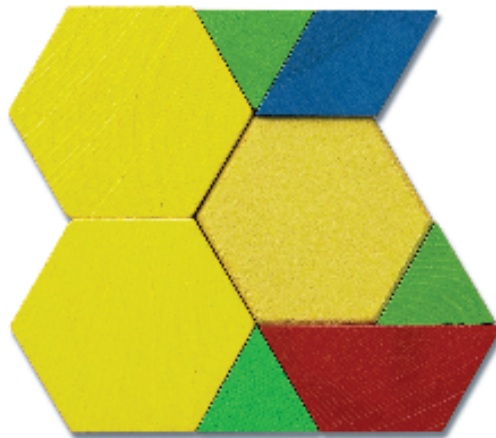
You will need

- pattern blocks

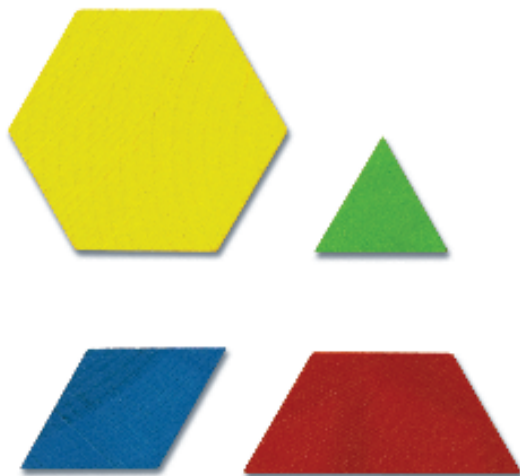
Pattern Block Designs

Jordan made a design using pattern blocks.

? **What fractions can you use to compare the different-coloured parts of Jordan's design?**



- A.** Look at Jordan's design. If each yellow hexagon has an area of 1 unit, what is the area of the red block? What is the area of the blue block? What is the area of the green block?
- B.** The equation $3 - \frac{1}{2} = 2\frac{1}{2}$ describes the difference between the areas of two colours. Which two colours? How do you know?
- C.** Use equations with fractions and/or mixed numbers to describe each difference.
- the difference between the area of the green blocks and the area of the blue block
 - the difference between the area of the yellow blocks and the area of all the blocks that are not yellow
 - the difference between the area of the yellow blocks and the area of the blue and green blocks
 - the difference between the area of the red block and the area of the green blocks
- D.** What other fraction comparisons can you make based on Jordan's design?
- E.** Make a new design, following these design rules.
- You must use
 - a total of eight blocks
 - at least one of each of these blocks
- Repeat steps C and D for your design. If you cannot answer any of the questions, explain why.



Do You Remember?

1. Name two **equivalent fractions** for each fraction.

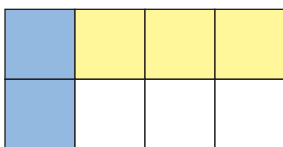
a) $\frac{3}{8}$ c) $\frac{11}{2}$

b) $1\frac{2}{3}$ d) $\frac{9}{12}$

2. Order these fractions from least to greatest.

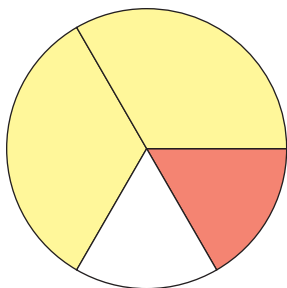
$\frac{3}{5}$ $\frac{3}{8}$ $\frac{6}{7}$ $\frac{12}{5}$

3. Write an addition equation to describe the fraction of the whole rectangle modelled by the blue and yellow parts.

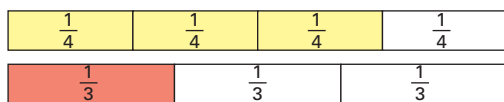


4. For each diagram, write an equation involving fraction subtraction to describe how much more is yellow than red.

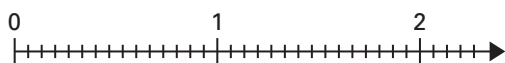
a)



b)

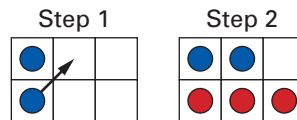


5. Use a number line, like the one below, to model each calculation.



a) $\frac{3}{5} + \frac{1}{3}$ b) $4 \times \frac{2}{5}$

6. This grid shows how you might add $\frac{1}{3} + \frac{1}{2}$.



Model each calculation on a grid, and record your result.

a) $\frac{3}{5} + \frac{1}{4}$ c) $3 \times \frac{3}{5}$

b) $\frac{2}{5} - \frac{1}{4}$ d) $2 \times \frac{9}{10}$

7. Determine the missing value in each equation.

a) $\frac{3}{5} + \square = 1\frac{1}{2}$

b) $\square + \frac{1}{2} = 1\frac{2}{3}$

c) $\frac{5}{8} + \square = 2$

8. Copy and complete the chart to show how repeated addition relates to multiplication.

Repeated addition	Multiplication	Result
$\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$		
	$3 \times \frac{5}{8}$	

9. Aaron bought 3 pizzas, each with 12 slices. He and his friends ate $1\frac{2}{3}$ of the pizzas.

- a) How many slices were left?
b) How many pizzas were left?

10. Thea poured 7 glasses of juice. Each glass was $\frac{2}{3}$ full. How many glasses could she completely fill with the same amount of juice?