contents and sample pages

Title	Developing Mathematics with Pattern Blocks
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CONTENTS

Pattern Block Man

Purpose

To create and copy various designs using pattern blocks.

Working from the original design and using the same number of blocks at the same time, show Pattern Block Man in a variety of poses.

1

Create Pattern Block Man exactly as shown.

2

Pattern Block Man jumps for joy.

3

Show another member of the Pattern Block Man family.

Make a pattern block person from another planet.

Guide to using this photocopiable resource

Modelling boards: for ease of moving the models, provide the students with modelling boards of strong cardboard or plywood, measuring about 40 x 25 cm.

A master copy of Pattern Block Man is provided for those students who need help to make him. The master may be copied onto an overhead transparency and overhead pattern blocks placed on to the transparency and shown to the students using an overhead projector.

Fractions – 2

Purpose

To develop an understanding of equivalent fractions.

To complete addition of fractions with like (or closely related) denominators.

Understanding symbols

Take time and care as the symbols are introduced and reinforced.

+

−

x

÷

=

With experience, students will realise:

- Subtraction reverses addition and addition reverses subtraction. (+ −)

- Division is the successive subtraction of equal groups and multiplication is the successive addition of equal groups. (x ÷)

- Multiplication is the inverse of division and division is the inverse of multiplication. (x ÷)

- Equivalence does not mean exactly the same, rather equal in value, meaning, worth or effect. We believe students can cope with the subtle difference between the two terms.

Understanding the written form

1

The shaded part is called $\frac{1}{6}$. Why?

Expect an answer like 'Because we are showing one out of six equal parts'.

is equivalent to

Two-sixths is equivalent to one-third.

$\frac{2}{6}$ is another name for $\frac{1}{3}$

is equivalent to

Three-sixths is equivalent to one half.

$\frac{3}{6}$ is another name for $\frac{1}{2}$

2 Using the cover-up model, show all the different ways to make $\frac{5}{6}$. For example:

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{5}{6}$$

OR

$$1 \text{ (whole)} - \frac{1}{6} = \frac{5}{6}$$

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{2} = \frac{5}{6}$$

OR

$$1 - \frac{1}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{2}$$

Discover all the different arrangements.

Guide to using these photocopiable resources

Fraction symbols (p. 25)

- Photocopy each fraction symbol to make a flashcard.

- Choose a flashcard. Students show that fraction using pattern blocks.

  Display a fraction flashcard at a Learning Centre. A display of all the models of that fraction is created.

- Use all the fraction flashcards; create pattern blocks models to match each.

Creating fraction sentences – 1 (p. 26)

- Cut and colour the fraction shapes from page 21. Glue them onto the blank hexagons to illustrate different fractions.

- Students explore all the different ways a fraction may be created.

Creating fraction sentences – 2 (p. 27)

Use this photocopiable resource to reinforce different ways of 'seeing' fraction relationships. Ensure the students can explain each statement, especially the less conventional fraction sentences.

You might say this is a write-talk sheet!

(Note: While we are working with $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{6}$, the knowledge gained by the students from these activities will transfer to other fraction relationship patterns; for example $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$).