QCA

Pegboards – Jemma, Niall and Ali

Objectives

The relevant framework objectives are:

- understand division (key objective)
- recognise that division is the inverse of multiplication (key objective).

Activity description

The teacher gave the pupils pegs and a pegboard and asked them to share their pegs out to make rows of equal length, producing a rectangle. They described their results in words and number sentences.

Commentary

Jemma's work shows she has divided 18 pegs in two different ways. Niall has used 16 pegs. He made a 2 by 8 then a 4 by 4 rectangle, which he recorded.

Niall and Ali used their multiplication tables to check whether a rectangle could be constructed with more than one row for numbers they were given. They used the tables systematically to find all possible ways of dividing 36 into a number of equal parts.

The three pupils agreed that a rectangle turned around is still essentially the same rectangle.

The pupils recognised the commutativity of multiplication and that division is the inverse of multiplication. This work exemplifies level 3 in this aspect of Ma2.

They also organised their work, checked results and were beginning to explain their thinking, indicating performance at level 3 in Ma1.

Items of work

Jemma divides 18 pegs in two different ways

My rectangle of pegs has got three rows
of six and six rows of three. It has
eighteen pegs altogether.

$18 \div 3 = 6$
$6 \times 3 = 18$
$3 \times 6 = 18$
$18 \div 6 = 3$

Niall divides 16 pegs in different ways

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My rectangle has got 4 rows across and 4 rows down. It looks like a square.

$$4 \times 4 = 16$$
$$16 \div 4 = 4$$

Niall and Ali find ways of dividing 36 into a number of equal parts

$12 \times 3 = 36$
$3 \times 12 = 36$
$12 \div 3 = 4$
$12 \div 4 = 3$

$18 \times 2 = 36$
$12 \times 18 = 36$
$36 \div 2 = 18$
$36 \div 18 = 2$

$9 \times 4 = 36$
$4 \times 9 = 36$
$36 \div 4 = 9$
$36 \div 9 = 4$

$6 \times 6 = 36$
$36 \div 6 = 6$

About this entry

Subject: mathematics

Year: 3

Key stage: 2

NC programme of study: Ma2p1g, Ma2p1h, Ma2p1k, Ma2p3a

Attainment target: Ma1, Ma2

Evidence for: level 3

Framework for teaching mathematics – objectives:

- Understand division
- Recognise that division is the inverse of multiplication.