

contents and sample pages

Title	Starting Points
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Contents

SHAPE & SPACE 7

Pentominoes	.9
Discovering Pentominoes	.10
Perimeter/Area Relationships	.11
Fence Building	.12
Directions	.13
Nets	.14
Symmetry	.15
Pent Up	.16
Two Tile Tessellations	.17
Tessellations with Gaps	.18
Do All Quadrilaterals Tessellate?	.19
Escher-Type Tessellations	.20
Tangrams	.21
Symmetrical Shapes	.22
Tangram Jigsaws	.23
Tangram Table	.24
Design a Pattern	.25
Symmetry	.26

NUMBER 27

Fractions	.29
More Fractions	.30
Calculating With Your Eyes Closed	.31
Calculator Clues	.32
Patterns in Place Value	.33
Comparing Calculations	.34
Squaring Up	.35
Jigsaws	.36
Routes	.37
The Calendar	.38
Boxed In	.39
Still Boxed In	.40
Calendar Conundrums	.41
Two Feet and One Hand	.42
Total Ten	.43
Symmetrical Standing	.44
Sort Yourself Out	.45
Draw a Large Hundred Square	.46
Skittles	.47
Pyramid	.48

Sparrows and Crumbs	.49
Cutting Up the Number Track	.50
It's All in the Head	.51
Connect Three	.52
What Comes Next?	.53
Tell Me About the Answer	.54

CHANCE 55

The Language of Chance	.57
Swap Cards	.58
It's in the Bag (Sampling)	.59
Happy Families	.60
Heads and Tails	.61

MISCELLANEOUS 63

Mathematics Trail	.65
Would You Rather?	.66
Gnome Homes	.67
Pricing Gnome Homes	.68
Gnome Gardens	.69
Fencing Gnome Properties	.70
Be a Brick Pavement Designer	.71

REPRODUCIBLE PAGES 73

Pentomino Pieces	.75
Tessellating Shapes	.76
Tessellating Shapes	.77
Tessellating Shapes	.78
Tessellating Shapes	.79
Tessellating Shapes	.80
Hundred Charts / Escher Grids	.81
Calculator Key Press Chart	.82
Hundred Chart	.83
Ninety-nine Chart	.84
Seven Piece Tangram	.85
Chance Words	.86
Calendar Conundrums	.87

ANSWERS to selected questions 89

Tessellations with Gaps

Many regular polygon tiles won't tessellate on their own, for example, octagons. They leave gaps. But what are these gaps like?

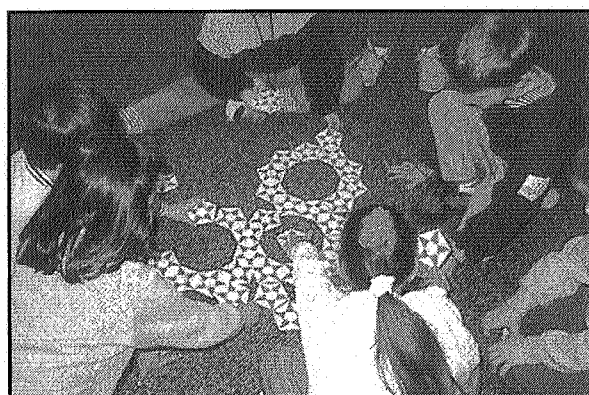
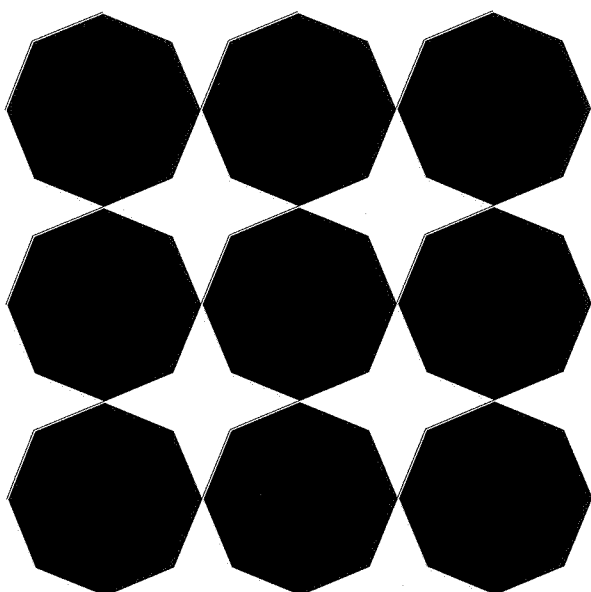
Preparation

Plenty of regular polygon tiles with the same edge length.

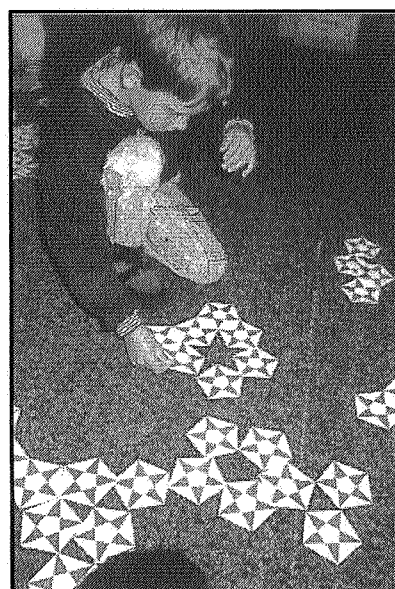
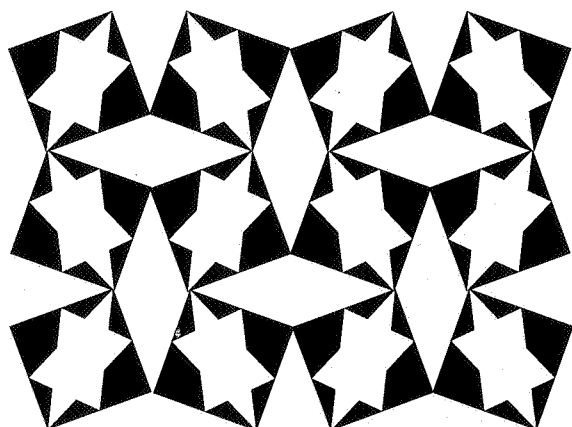
The Lesson

Show an example of a tessellation with gaps, for example octagons and squares.

Challenge pairs of children to explore octagons and find gaps other than squares.



Other pairs of children could explore pentagons and gaps.



Some could be challenged to find examples of gaps with shapes that do tessellate by themselves, for example, squares.

★ Pricing Gnome Homes



GnineTeen
Shrubbery Gardens
Orchard Lane
Gnorwich
United Kingdom

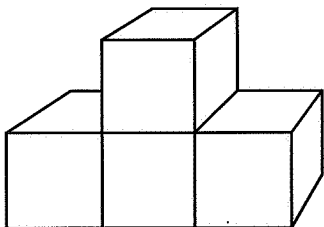
Dear Friend

I am delighted to hear that the gnome homes are nearly completed! Well done!

The Board of Old Gnomes desperately needs your help...

- * Please investigate the costs of the 15 gnome homes.
- * Rates \$100 for each square unit of ground covered.
- * Paint \$10 for each exposed face (not the roof).

For example, design 4



$$\text{Rates } 3 \times \$100 = \$300$$

$$\text{Paint } 12 \times \$10 = \$120$$

$$\text{Total } \underline{\quad} \$420$$

Please tell me:

- * Which is the most expensive home? (deluxe model!)
- * Which is the cheapest? (economy home!)
- * Anything you notice about the prices?

Write back to the Chief Accountant Gnoris. Set out your work — diagrams and costs — neatly (his eyesight isn't very good!).

Your gnome friend, Gnorman.