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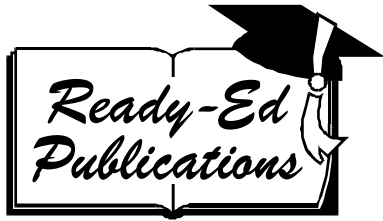
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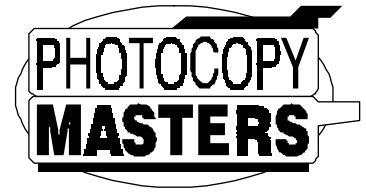
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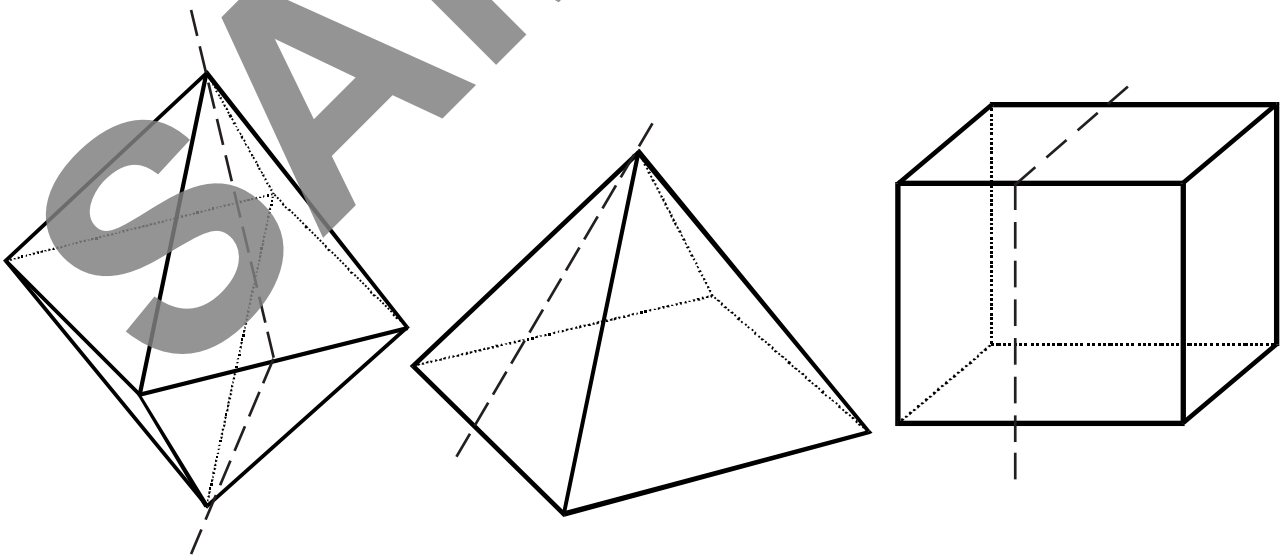
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The Shapes & Spaces Series  
Book 2 - For 8 to 10 Year Olds

# SHAPES AND SPACES

## FOR INTERMEDIATE STUDENTS



Written by Judy Gabrovec. Illustrated by Melinda Parker.

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# Teacher Information

“Shapes and Spaces for Intermediate Students” is a comprehensive activity book suitable for 8 to 10 year old children, which explores the theme of spatial language and concepts. The activities are Standards-based and provide children with the opportunity to develop spatial knowledge of:

- pathways
- mazes
- spatial features of everyday objects
- matching shapes
- recognizing the similarities and differences in shapes
- arranging shapes according to size, shapes
- symmetry
- tessellations
- classifying shapes using spatial features
- mapping
- ordered pairs
- spatial features of 3-D shapes
- enlarging and reducing
- symmetrical patterns
- traversable networks
- model making
- cross sections of 3-D shapes
- manipulating 3-D shapes

Included in the book are the templates for a variety of 3-D shapes that can be used to support the activities.

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# Games and Activities Using Concrete Material

It is vital that children's early experiences with space and shape involve handling, arranging, building, stacking, packing, rolling, sorting, matching, and investigating a variety of three dimensional objects that exist in their everyday environment.

The type of everyday objects that can be used to develop important mathematical spatial awareness are:

- ❖ blocks of all shapes and sizes;
- ❖ models of regular shapes (cubes, pyramids);
- ❖ building sets and construction kits;
- ❖ toys (marbles, buttons, balls, jigsaw puzzles);
- ❖ manipulative material (Plasticine, modelling clay, wire, string);
- ❖ playground equipment;
- ❖ school buildings;
- ❖ school grounds;
- ❖ classroom;
- ❖ furniture.

Some suggestions on using these materials are:

Compare the building blocks according to size, shape, color, and possible uses.

Classify blocks using properties like color, shape, number of corners, and number of faces.

Build structures from an assortment of blocks following a "brief" or a set of instructions, e.g. Build a tower using ten square blocks and ten rectangular blocks.

Have discussions with children about which blocks would suit specific purposes, e.g. Which blocks would stack, roll or be more suitable for balancing on other blocks?

Investigate the ways in which the different blocks can move, e.g. Can they spin, roll, slide?

Identify things in their classroom, schoolyard, bedroom that are the same shape as the blocks.

Cut out appropriate pictures from magazines and glue them onto charts that represent different shapes.

Use blocks to play games to develop the concepts of repeated patterns and symmetry.

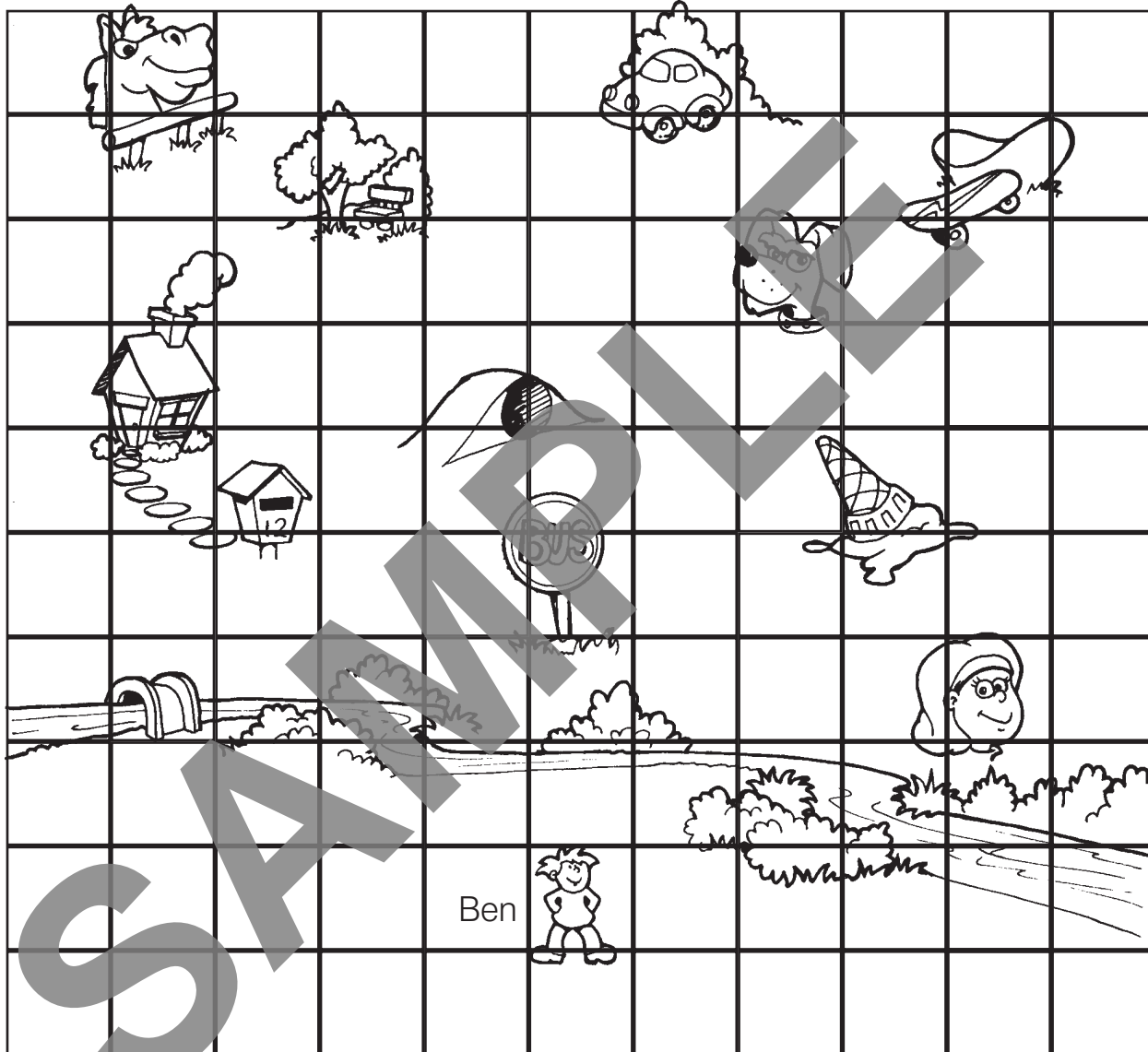
Develop children's spatial language by encouraging them to describe their models and constructions to other children in the class.

Encourage children to evaluate their model making efforts by explaining how and why they constructed their model and if it was a success.

Standard: Use instructions to follow a pathway where movements are in order.

# Pathways 1

☐ Follow the pathways to find out where Ben stopped on each different day. Use the points of the compass to help you follow the pathways accurately.



Pathways

1. Monday N4 E2 N4 W1
2. Tuesday S1 W5 N6 E4
3. Wednesday E4 N5 W5 N2 E5
4. Thursday N7 W2 N1 W2 S3
5. Friday W3 N5 E5 N2 W4
6. Saturday N8 W4 S1 E8
7. Sunday N2 E3 N2 W7 S2

Ben stopped at the

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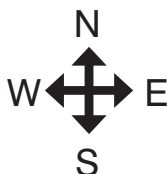
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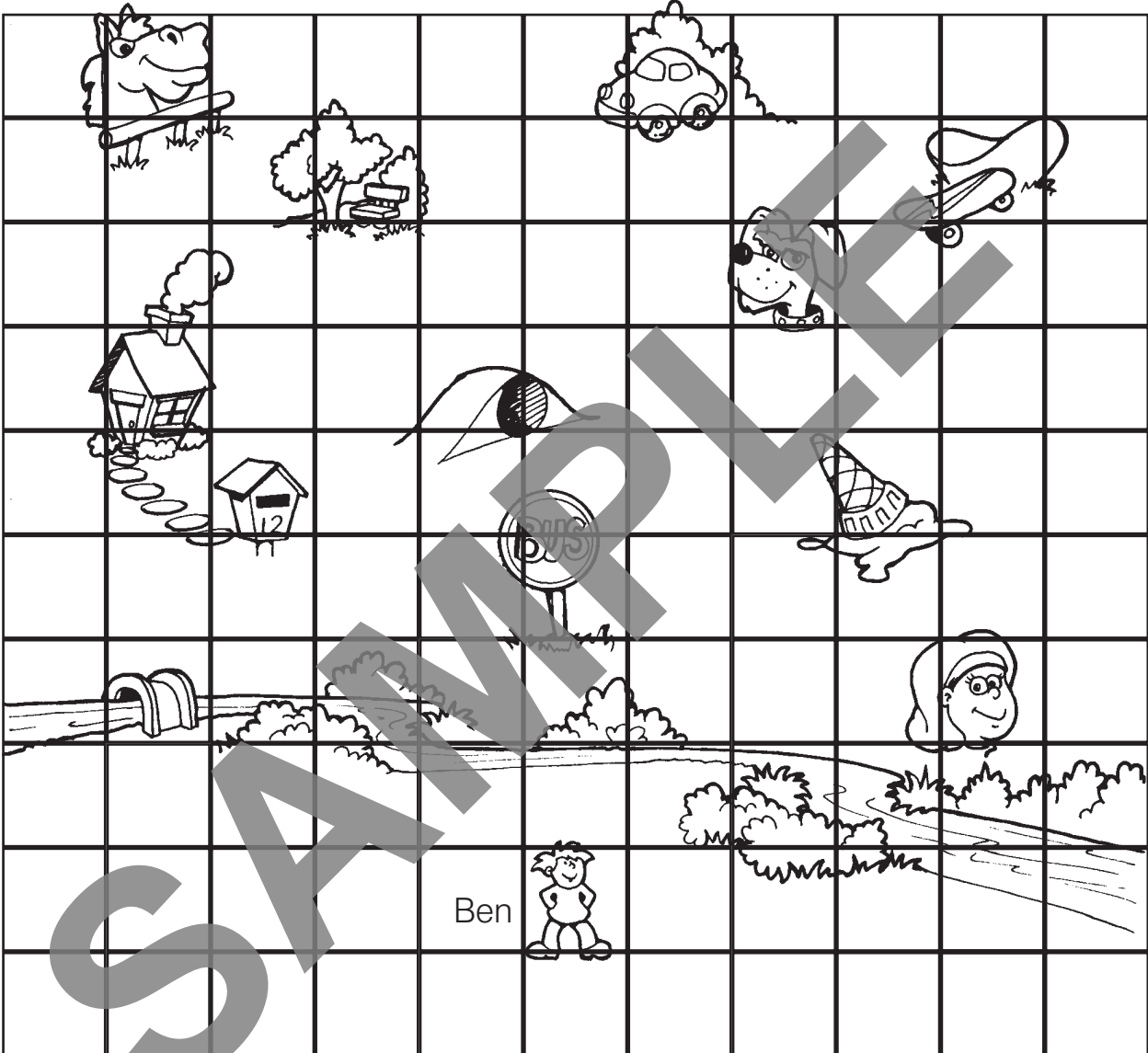
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Standard: Give instructions for creating a pathway which requires movement to be done in order.

# Pathways 2

☐ Use the points of the compass to find out the pathways Ben took to visit the different places on the grid.



Record the pathways here.

<u>Place visited</u>	<u>Pathway</u>	<u>Place visited</u>	<u>Pathway</u>
e.g. Skate park	N7 E4	Tunnel	.....
Horse	.....	Bus stop	.....
Park	.....	Dog	.....
Car	.....	Bridge	.....

