

INTRODUCTION

Welcome to **Understanding Fractions Book 4**. This book has been designed for Year 4 students, although it may also be helpful in reinforcing basic fractional concepts for children who are experiencing some difficulties or providing more challenging activities and understandings for Year 3 students.

The activities in this book allow students to explore and play with fractional relationships and to come to their own understandings. Students are encouraged to analyse shapes, relationships and numbers. They are also encouraged to develop their skills in communicating, reasoning and problem solving.

Book 4 continues to apply students' fractional understandings to new situations. These include relating fractions to measurement, converting decimals and common fractions and dividing whole numbers and fractions. Some students may still prefer to utilise aids and materials in order to visually represent or construct the fractional concepts.

Your organisation of students may vary as you continue to use this resource. The tasks have been designed to be completed in small groups or pairs as the student exchange of ideas increases the power of learning as it uncovers a variety of problem solving strategies. You may, however, prefer that some tasks be completed individually. When this is the case, bring the students back together on completion of the task and share understandings and experiences. This will help you identify students who require further assistance and will also reinforce the skills that have been taught. Other students will be ready to expand on the concepts they have understood.

Each activity in **Understanding Fractions Book 4**, focusses on at least one of the curriculum strands of **Space, Number, Measurement** and **Reasoning** strategies. The lessons have been designed to be exploratory and sequentially connected.

Assessment is multifaceted and this resource encourages a range of strategies for assessing students. Each lesson is part of this process. You can gather valuable information by listening to student's explanations, observing their thinking and examining their writing and reflections. These assessment tools are some methods of exploring student progress and modifying instruction to suit the needs of your students.

HAWKER BROWNLOW
E D U C A T I O N

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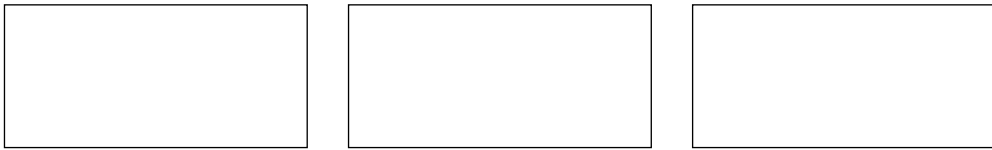
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LESSON
1

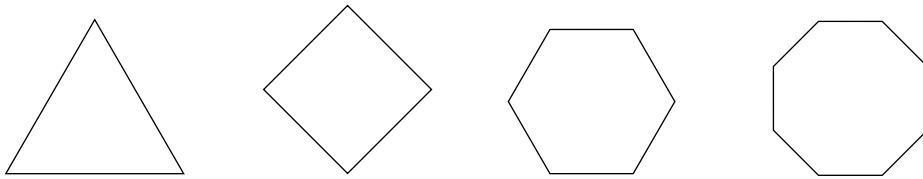
FOCUS: Review halves, thirds, and quarters

MATERIALS: Ruler; red, blue, green, and yellow crayons or textas

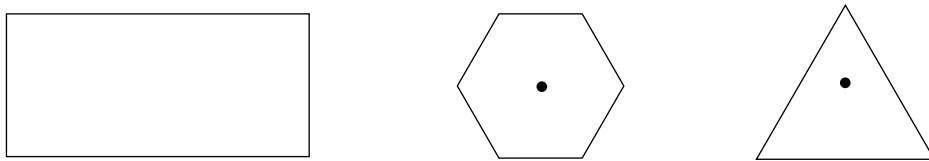
1. Use three different ways to divide each **rectangle** into halves. For each rectangle, colour $\frac{1}{2}$ red and $\frac{1}{2}$ blue.



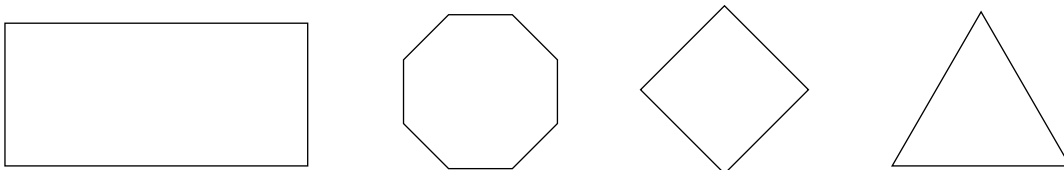
2. Divide each figure into halves. For each figure, colour $\frac{1}{2}$ red and $\frac{1}{2}$ blue.
NOTE: Begin at a **vertex** to divide the figures.



3. Divide each figure into thirds. For each figure, colour $\frac{1}{3}$ red, $\frac{1}{3}$ blue, and $\frac{1}{3}$ green.
NOTE: Use the centre points to help you.

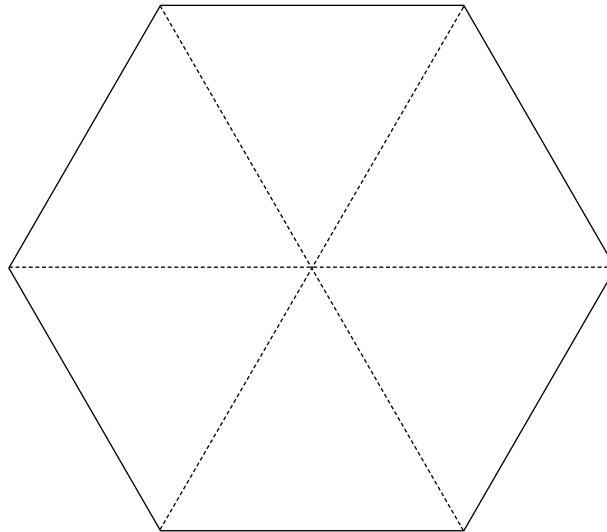


4. Divide each figure into quarters. For each figure, colour $\frac{1}{4}$ red, $\frac{1}{4}$ blue, $\frac{1}{4}$ green, and $\frac{1}{4}$ yellow.



LESSON
2

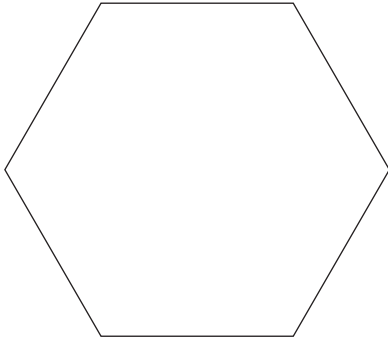
FOCUS: Review and compare halves, thirds, and sixths
MATERIALS: Ruler; red, blue, and green crayons or textas



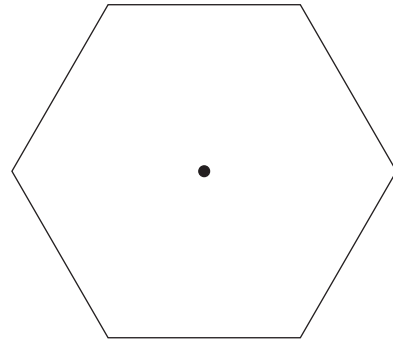
1. Colour $\frac{1}{2}$ of the **hexagon** red. Colour $\frac{1}{3}$ of the hexagon blue. Colour $\frac{1}{6}$ of the hexagon green.
2. Circle the letter of the sentence that is true.
 - a. The red part is largest.
 - b. The blue part is largest.
 - c. The green part is largest.
3. Use the hexagon to answer the questions.
 - a. What figure names $\frac{1}{6}$ of the hexagon? _____
 - b. What figure names $\frac{1}{3}$ of the hexagon? _____
 - c. How many sixths are in the blue third of the hexagon? _____
One third is the same as how many sixths? _____
 - d. How many sixths are in the whole hexagon? _____
 - e. How many thirds are in the whole hexagon? _____
 - f. How many halves are in the whole hexagon? _____
 - g. How many sixths are in the red half of the hexagon? _____
One half is the same as how many sixths? _____
 - h. Which is larger, a half or a sixth of the hexagon? _____
 - i. Which is larger, a sixth or a third of the hexagon? _____
 - j. Which is larger, a third or a half of the hexagon? _____

LESSON
3

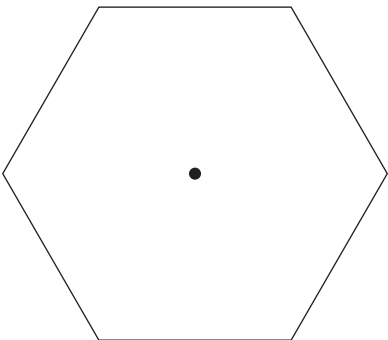
FOCUS: Explore equivalent fractions
MATERIALS: Ruler, pattern blocks



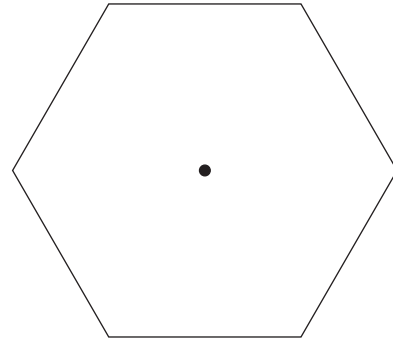
A



B



C



D

1. Divide hexagon *B* into 2 equal parts. Divide hexagon *C* into 3 equal parts. Divide hexagon *D* into 6 equal parts.
2.
 - a. How many parts are in hexagon *B*? _____
Each part is one half of the hexagon. Write one half as a **common fraction**. _____
 - b. How many parts are in hexagon *C*? _____
Each part is one third of the hexagon. Write one third as a common fraction. _____
 - c. How many parts are in hexagon *D*? _____
Each part is one sixth of the hexagon. Write one sixth as a common fraction. _____
3.
 - a. Which is greater, $\frac{1}{3}$ or $\frac{1}{6}$? _____
 - b. Which is greater, $\frac{1}{6}$ or $\frac{1}{2}$? _____
 - c. Which is greater, $\frac{1}{2}$ or $\frac{1}{3}$? _____
4.
 - a. How many halves are in hexagon *B*? _____
 - b. How many thirds are in hexagon *C*? _____
 - c. How many sixths are in hexagon *D*? _____