



## Investigation 6 Never a cross word

Create a challenging crossword using only multiplication and division clues. Give it to a classmate to solve and evaluate.

They may use a pencil and paper to solve your crossword – but definitely no calculator!



### ✓ Topics

Before you start the Investigation you need to know...

- NA1** Factors and multiples to solve problems.....p32
- NA2** Factor trees .....p34
- NA6** Multiplication 4-digit x 1-digit.....p42
- NA7** Multiplication 3-digit x 2-digit.....p44
- NA8** Lattice method of multiplication.....p46

- NA9** Division 3-digit ÷ 1-digit.....p48
- NA10** Division with zeros.....p50
- NA11** Division with remainders.....p52
- NA25** Backtracking.....p80

## Understanding the Investigation

### I Read and plan.

Make sure you understand the meanings of: *systematically*, *evaluate*, *structure*, *challenging*, *degree of challenge* and *mathematical accuracy*.

Read and discuss the rubric.

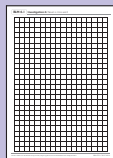
Download your Investigation plan. This will help you with the organisation and understanding of the Investigation.

### Teacher note

- Comprehensive lesson notes, suggestions and resources are available in *iMaths 5 Teacher Book*.
- The Tear-out, BLM and Investigation plan for this Investigation can be downloaded from [www.imathsteachers.com.au](http://www.imathsteachers.com.au).



Internet access



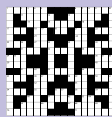
BLM 6.1



Tear-out 2



Calculator



Examples of crosswords

## 2 Look at crosswords.

Study the structure of a crossword. Note the position of the clues, answers and the blank squares. Note that the clue numbers match the numbers in the answer space.

Use **BLM 6.1** and decide on the size of your crossword. Rule it carefully on the grid paper.

## Using maths

### 3 Clues and answers.

You will be working with a grid (for the answers) and a separate sheet of paper (for the clues).

Write the first clue (down or across). Ensure each clue is written as a number sentence, for example  $234 \times 5 = ?$ . Remember, each clue must use multiplication or division.

Write the answer to the first clue in the top left hand corner of the grid.

Work systematically, writing clues and answers that intersect across and down, until the grid is complete.

Finally, number the answers on the grid and black out any unused squares. This will be your crossword answer sheet. Keep it safe.

### 4 Produce your crossword.

Rewrite your across and down clues, numbering them in the order they appear in the grid.

Use **Tear-out 2 Crossword grid paper** (p169), to make your final crossword (without answers). Number the clues and black out the unused squares.

## Reasoning and reporting

### 5 Evaluate your crossword.

Swap crosswords with a classmate. Solve each others crossword without using a calculator.

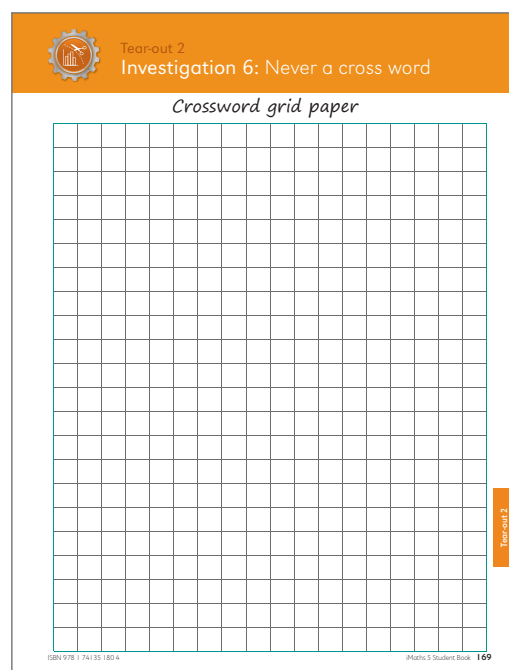
Rate your classmate's crossword and discuss:

- the setting out
- the degree of challenge and audience suitability
- the mathematical accuracy.

**imathskids.com.au**



Go to **imathskids.com.au** – The Investigation 6 area contains the Investigation plan, websites, Tear-out and BLM that you need to complete this Investigation.



## Inquiry

Find a cryptic crossword in a newspaper or magazine. Ask an adult who knows how to solve cryptic crosswords to explain the process to you.

You may be surprised how interesting they are!