Investigation 2
Dynamic dominoes

Dominoes is a really old game that dates back to 12th century China.

Domino tiles were traditionally carved from ivory or bone and the dots were made of ebony.

Can you design a set of 28 modern, workable domino tiles to entertain your classmates and help them learn about percentages and fractions?

You will have to think of clever ways to show matching fractions and percentages on the tile ends.

Can you make a game of dynamic dominoes?

✓ Topics

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

Understanding the Investigation

1 Read and plan.

Make sure you understand the meanings of: *workable, dominoes, logical sequence, traditionally, ivory, ebony, criteria, feedback* and *modify*.

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 BLM and Investigation plan for this Investigation can be downloaded from www.imathsteachers.com.au.

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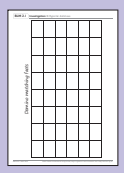
Materials


Internet access


BLM 2.1


Cardboard


Domino sets


Craft materials

2 How does the game of dominoes work?

Look at a set of traditional domino tiles. Each of the numbers on the tiles are represented by dots.

Arrange the domino tiles in a logical sequence. Count how many times each number is represented, and look at where it is placed. Count the number of blank ends too.

Discuss the rules and play a game.

Using maths

3 Plan your domino tiles.

In your game of dominoes you must represent fractions and percentages in different ways on the tile ends.

Use the table on BLM 2.1 to plan your game.

Write 2 whole numbers, 2 fractions and 2 percentages in the first column on BLM 2.1. Then, complete each row using words, diagrams, percentages, equivalent fractions, and addition or subtraction of fractions to match what is in the first column.

4 Make your tiles and play the game.

Use your plan to produce a set of 28 tiles (don't forget blanks). Use all the facts from BLM 2.1 and position them in the same combinations as a traditional set. See the example on the right.

Play your game and modify it, if necessary.

5 Test the games.

As a class, design a feedback sheet that will help you assess whether the dominoes games meet all the criteria.

Swap your game of dominoes with other groups. Play their games and complete the feedback sheets.

Reasoning and reporting

6 Have you produced a set of workable domino tiles?

Arrange your 28 domino tiles in a logical sequence and present these to the class. Explain the pattern.

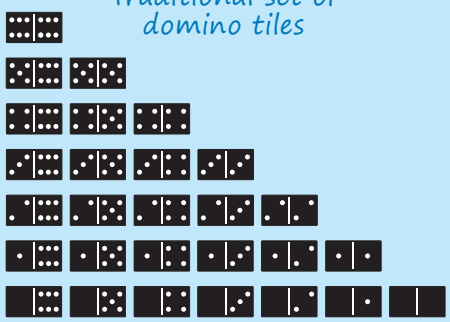
Explain how you represented the values on your domino tiles.

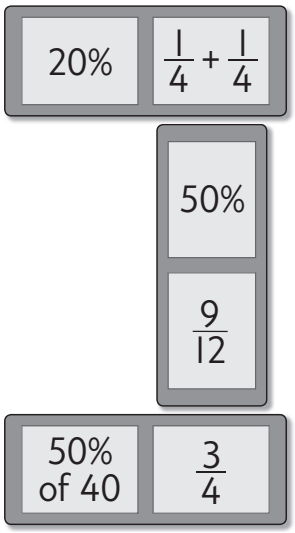
Use the feedback sheets to evaluate your game. Suggest ways to make your game even better.

imathskids.com.au

Go to **imathskids.com.au** – The Investigation 2 area contains the Investigation plan, websites and BLM that you need to complete this Investigation.

Traditional set of domino tiles





Inquiry

If you were to replace every value on your domino tiles with addition and subtraction of fractions, would your game be more challenging?

To find out, create a new set of domino tiles with each value represented by addition or subtraction of fractions only.

Play your new game. How did it compare to your original game?

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