**THE GAME:**

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| Three blocks are placed in a container. Two are the same colour and one is different (e.g 2 red and 1 green). Each player draws a block from the container without looking.  Player A wins a point if the colours are the SAME.  Player B wins a point if the colours are DIFFERENT |

**Activity 1♣**

Choose a partner and decide who is to be Player A and Player B

Play 50 games, keeping a record whether Player A or Player B wins

1. How many times did Player A win? \_\_\_\_\_\_\_\_\_
2. How many times die Player B win? \_\_\_\_\_\_\_\_\_
3. Do you think this (2, 1) game is fair? Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. If you had one of block of each colour who would win? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Add another block to the container, so you now have two of each colour.

1. Predict whether or not this will be a fair game \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Play another 50 games.

1. How many times did Player A win? \_\_\_\_\_\_\_\_\_
2. How many times die Player B win? \_\_\_\_\_\_\_\_\_
3. Explain why this (2, 2) is/isn’t fair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Activity 2♣**

You are now going to use the Maths 300 software to see if you can find a “fair” combination of blocks. Try a variety of combinations ranging from (1, 1) to (6, 6)

**Extension♣**

Draw tree diagrams for each of the fair combinations to demonstrate that they are fair.