

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Dice Difference

In this game, you will play against a partner. One player is the Low player, and the other is High. Each pair of players needs two dice.

You will throw two dice, and *subtract* the smaller number from the larger. The answer is called the 'Dice Difference'. The smallest difference is 0, if the two numbers are the same. The largest difference is 5, e.g. if the numbers are 1 and 6.

If the Dice Difference is 0, 1 or 2, the Low player wins. If the Dice Difference is 3, 4 or 5, the High player wins. For example, if the two dice are 5 and 2, then the Dice Difference is 3. The High player wins one point.

Play 36 rounds against your partner. Record who wins each round, and who wins overall. Does the game seem to be fair to both players?

### Investigation

A good game should be fair to both players.

1. Determine if the game Dice Difference is fair to both players. Clearly justify your answer.
2. If the game IS fair, explain how you could change the rules to make it unfair.  
If the game ISN'T fair, explain how you could change the rules to make it fair.