

Looking at this T-shape drawn on a 9 by 9 number grid

The total of the numbers inside the T-shape is  $1 + 2 + 3 + 11 + 20 = 37$ .

This is called the **T-total**.

The number at the bottom of the T-shape is called the T-number.

The T-number for this T-shape is 20.

|    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
| 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |
| 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |

Translate the T-shape to different positions on the grid.

- 1) Investigate the relationship between the T-total and the T-number.
- 2) Use grids of different sizes. Translate the T-shape to different positions. Investigate relationships between the T-total, the T-numbers and the grid size.
- 3) Use grids of different sizes again. Try other transformations and combinations of transformations. Investigate relationships between the T-total, the T-numbers, the grid size and the transformations.