**Is the shortcut actually shorter? Day 2**

OVER

Home

UP

SHORTCUT

Start

Reese and her dad are on a very long walk. Her dad says they should go up 3 miles and over 4 miles. Reese says they should take a “shortcut” to get home faster. Today we discover a pattern that will help us find the distance of the shortcut.

1. Use spaghetti pieces to find the distance of the shortcut for a walk on each day.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | UP |  | OVER  |  | SHORTCUT |
| Day 1 | 3 |   | 4 |   |   |
|  |  |  |  |  |  |
| Day 2 | 6 |   | 8 |   |   |
|  |  |  |  |  |  |
| Day 3 | 5 |   | 12 |   |   |

1. Now take each number in the table above and multiply it by itself.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | UP x UP |  | OVER x OVER |  | SHORTCUT x SHORTCUT |
| Day 1 |   |   |   |   |   |
|  |  |  |  |  |  |
| Day 2 |   |   |   |   |   |
|  |  |  |  |  |  |
| Day 3 |   |   |   |   |   |

1. What pattern do you notice with the numbers in this table?
2. Describe the pattern in words.
3. Write an equation that goes with the pattern.