

You have seven dots with one green side and one pink side.

Start with all the dots on the pink side. Your goal is to ***flip*** all the dots over to be green. But you can only flip 3 dots at a time! What’s the smallest number of moves you can do this.

We will try this game with different numbers of dots. Let’s start with **7.** Keep track of different methods you use.

In the move box, you can write things like, flipped: 2 pink, 1 green or flipped 3g

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attempt | Move 1 | Move 2 | Move 3 | Move 4 | Move 5 | Move 6 |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

In the move box, you can write things like, flipped: 2 pink, 1 green or flipped 3g

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attempt | Move 1 | Move 2 | Move 3 | Move 4 | Move 5 | Move 6 |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attempt | Move 1 | Move 2 | Move 3 | Move 4 | Move 5 | Move 6 |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- |
| Attempt | Move 1 | Move 2 | Move 3 | Move 4 | Move 5 | Move 6 |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

|  |  |
| --- | --- |
| # of dots | Minimum # of moves to flip them all over |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |
| 13 |  |
| 14 |  |
| 15 |  |

Do you notice any pattern between the number of dots, and the minimum number of moves to flip them all over?