## Counting In Binary

Activity 1: Using the table below, count in binary. Check your answers occasionally to make sure you're still on the right track. Keep counting until you are confident you have it down.

Activity 2: Look at the sequence of numbers and identify patterns in the 1's and 0's. Try to create statements that help describe the patterns that exist.

| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 | DEC |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | 0 |
|  |  |  |  |  |  |  |  | 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 |

## Counting In Binary

| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 | DEC |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | 0 | 0 |
|  |  |  |  |  |  |  | 1 | 1 |
|  |  |  |  |  |  | 1 | 0 | 2 |
|  |  |  |  |  |  | 1 | 1 | 3 |
|  |  |  |  |  | 1 | 0 | 0 | 4 |
|  |  |  |  |  | 1 | 0 | 1 | 5 |
|  |  |  |  |  | 1 | 1 | 0 | 6 |
|  |  |  |  |  | 1 | 1 | 1 | 7 |
|  |  |  |  | 1 | 0 | 0 | 0 | 8 |
|  |  |  |  | 1 | 0 | 0 | 1 | 9 |
|  |  |  |  | 1 | 0 | 1 | 0 | 10 |
|  |  |  |  | 1 | 0 | 1 | 1 | 11 |
|  |  |  |  | 1 | 1 | 0 | 0 | 12 |
|  |  |  |  | 1 | 1 | 0 | 1 | 13 |
|  |  |  |  | 1 | 1 | 1 | 0 | 14 |
|  |  |  |  | 1 | 1 | 1 | 1 | 15 |
|  |  |  | 1 | 0 | 0 | 0 | 0 | 16 |
|  |  |  | 1 | 0 | 0 | 0 | 1 | 17 |
|  |  |  | 1 | 0 | 0 | 1 | 0 | 18 |
|  |  |  | 1 | 0 | 0 | 1 | 1 | 19 |
|  |  |  | 1 | 0 | 1 | 0 | 0 | 20 |
|  |  |  | 1 | 0 | 1 | 0 | 1 | 21 |
|  |  |  | 1 | 0 | 1 | 1 | 0 | 22 |
|  |  |  | 1 | 0 | 1 | 1 | 1 | 23 |
|  |  |  | 1 | 1 | 0 | 0 | 0 | 24 |
|  |  |  | 1 | 1 | 0 | 0 | 1 | 25 |
|  |  |  | 1 | 1 | 0 | 1 | 0 | 26 |
|  |  |  | 1 | 1 | 0 | 1 | 1 | 27 |
|  |  |  | 1 | 1 | 1 | 0 | 0 | 28 |
|  |  |  | 1 | 1 | 1 | 0 | 1 | 29 |
|  |  |  | 1 | 1 | 1 | 1 | 0 | 30 |
|  |  |  | 1 | 1 | 1 | 1 | 1 | 31 |
|  |  | 1 | 0 | 0 | 0 | 0 | 0 | 32 |
|  |  | 1 | 0 | 0 | 0 | 0 | 1 | 33 |
|  |  | 1 | 0 | 0 | 0 | 1 | 0 | 34 |
|  |  | 1 | 0 | 0 | 0 | 1 | 1 | 35 |
|  |  | 1 | 0 | 0 | 1 | 0 | 0 | 36 |
|  |  | 1 | 0 | 0 | 1 | 0 | 1 | 37 |
|  |  | 1 | 0 | 0 | 1 | 1 | 0 | 38 |
|  |  | 1 | 0 | 0 | 1 | 1 | 1 | 39 |
|  |  | 1 | 0 | 1 | 0 | 0 | 0 | 40 |
|  |  | 1 | 0 | 1 | 0 | 0 | 1 | 41 |
|  |  | 1 | 0 | 1 | 0 | 1 | 0 | 42 |

