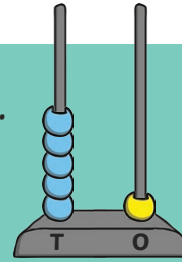


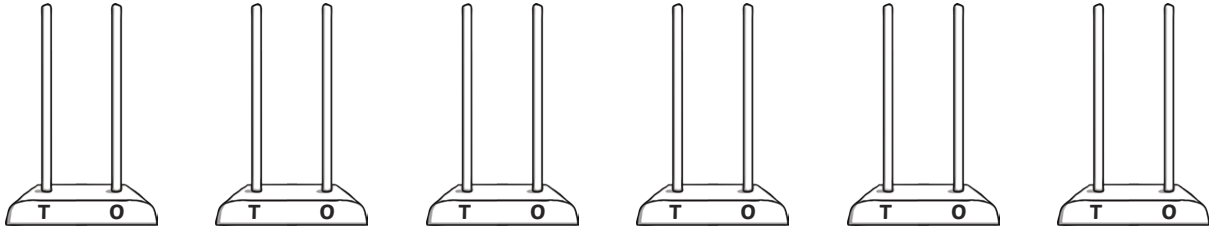
Abacus Investigation

Here is an abacus showing tens and ones.

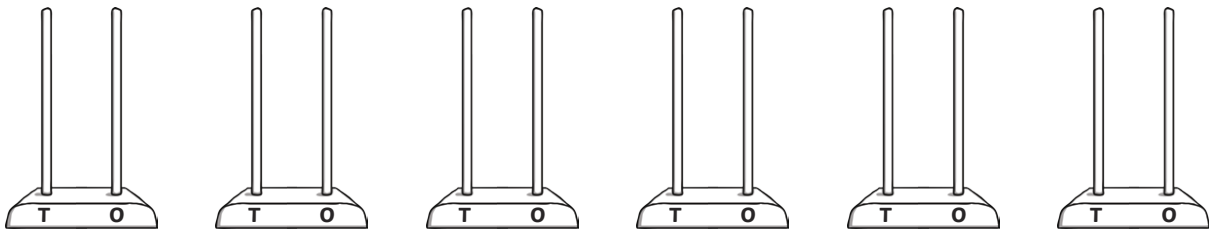
6 beads are used to make the number **51**.



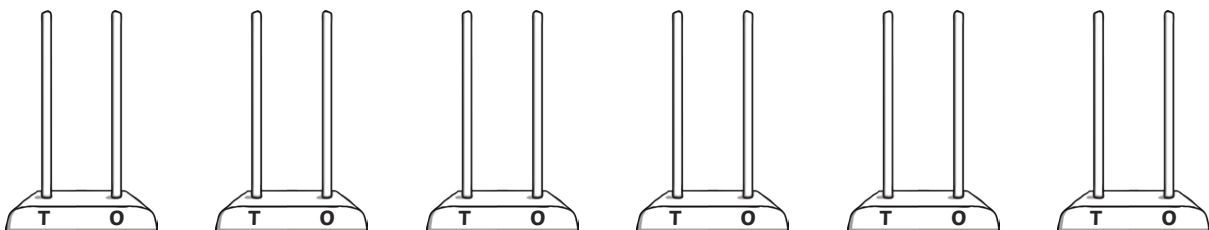
What numbers can be made with **3** beads?



What numbers can be made with **4** beads?



What numbers can be made with **5** beads?



Abacus Investigation

Challenge

Look at how many different numbers can be made with 3, 4 and 5 beads. How can you use this to predict how many numbers will be made with 6 and 7 beads? How many numbers can be made with 6 and 7 beads?

6 beads: _____ numbers _____

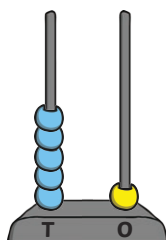
7 beads: _____ numbers _____

How many numbers can be made with 8 and 9 beads?

8 beads: _____ numbers _____

9 beads: _____ numbers _____

What happens with 10 beads that might make it different?



Abacus Investigation **Answers**

3 beads: **(4 numbers) 3, 12, 21, 30**

4 beads: **(5 numbers) 4, 13, 22, 31, 40**

5 beads: **(6 numbers) 5, 14, 23, 32, 41, 50**

6 beads: **(7 numbers) 6, 15, 24, 33, 42, 51, 60**

7 beads: **(8 numbers) 7, 16, 25, 34, 43, 52, 61, 70**

8 beads: **(9 numbers) 8, 17, 26, 35, 44, 53, 62, 71, 80**

9 beads: **(10 numbers) 9, 18, 27, 36, 45, 54, 63, 72, 81, 90**

10 beads: **You cannot have 10 beads on a stick, so there would not be 11 numbers. The possible numbers are 19, 28, 37, 46, 55, 64, 73, 82, 91.**