



Use Random Numbers

A calculator can be used to model an experiment that would be difficult or inconvenient to perform. To do this, you will use random numbers.

Use with Lesson 10-5

Activity

You can use a calculator to explore the experimental probability that at least 2 people in a group of 6 people were born in the same month. Assume that all months are equally likely to be a person's birth month.

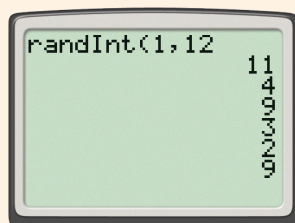
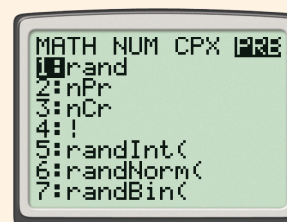
- 1 Represent each month with an integer. Since there are 12 months, use the numbers 1–12.

To set your calculator up to generate random numbers, press **MATH**. Then use the arrow keys to highlight **PRB**. Select **5: randInt(**.

- 2 Now give the start number, 1, press **,**, and give the end number, 12.

Each time you press **ENTER** the calculator will return an integer from 1 to 12.

- 3 You are considering a group of 6 people. This means you need 6 random numbers.



	Person					
	1	2	3	4	5	6
Trial 1	11	4	9	3	2	9
Trial 2	3	8	10	12	6	2

In the first trial, the number 9 appears twice. This means that two people have a birth day in the ninth month, September.

In the second trial, no number appears more than once. This means that none of the people were born in the same month.

Try This

- 1 Repeat the experiment until you have 10 trials of the experiment. Count the number of trials in which a number appears more than once. Divide this number by the number of trials, 10, to find the experimental probability that at least 2 people in a group of 6 people will have the same birth month.
- 2 Gather the results from at least 100 trials of the experiment. (Either perform all of the trials yourself or combine data with your classmates.) Using your results, what is the experimental probability that at least 2 people in a group of 6 people will have the same birth month? Compare the results from 100 trials to the results of 10 trials.
- 3 How could you set up the experiment to find the experimental probability that at least 2 people in a group of 6 people will have the same birthday (same month and same date)?