Hot Tub Design
Lab A

Perry is designing a hot tub that he will locate behind his house. He has 36 square designer tiles that he will use to build a surface in his yard where he will place his hot tub. He wants to use all of the tiles, but he does not yet know how he will arrange them to form the base of the hot tub. If his hot tub will be rectangular, how many different rectangles with an area of 36 square tiles does he have to choose from?

Use the square tiles provided by your teacher to find as many rectangular configurations as you can. Remember to record the length and the width of each rectangle you find. Assume that Perry’s yard is big enough to accommodate any rectangular design you create and that it matters which dimension is the width and which is the length.
Flu Epidemic
Lab B

Health officials in Parsnipville are concerned about the recent outbreak of the flu. While scientists are working hard to find a vaccine, the town leaders are turning to you to predict how many people will be sick over time. They hope to find a vaccine in a week. Here are the facts: The epidemic started on Day 0 when Velma and Stanley returned from their exotic vacation with symptoms of the flu. Each day, a sick person infects two additional people. The town of Parsnipville has 3800 citizens.

Use the beans (or other materials) provided by your teacher to represent, day by day, the total number of people in Parsnipville infected with the flu. Start with two beans to represent Velma and Stanley. Then carefully add two beans to each existing bean to represent the growth of the disease. Collect (and record) data for the total number of people in Parsnipville that are sick each day for several days, starting with Day 0.
Sign on the Dotted Line
Lab C

Certain legal documents, such as those used when buying property, sometimes require up to 50 signatures! How long do you think it might take to sign all of the documents? To find out, collect data as one person on your team signs his or her first name. Have another team member use a stopwatch to time how long (in seconds) it takes to neatly sign his or her first name 2, 3, 5, 7, and 10 times. Be sure to record the time it takes for each number of signatures. In order to collect good data, be sure to have your team member practice signing his or her first name a few times before you start. This is not a speed competition, but rather a way to collect typical data for one person’s signature.