

Trick or Treating Candy Totals

Part One

Last year for Halloween my friends and I predicted how many pieces of candy we would get trick-or-treating. After we went out trick-or-treating, we each counted the number of pieces of candy that we received. Our predictions and our actual totals are below.

Name	Prediction	Actual
Me	100	135
Max	40	62
Jen	50	44
Sofia	25	35

- Who do you think did the best at predicting their total? Explain your reasoning.

Part Two

There are two ways we can look at this.

- We can look at **measurement error**, which is the actual number of candies we were off by.
- Or we can look at **percent error**, which is the percent that our prediction was off by.

Even though I was 35 candies off on my prediction (= **measurement error**), the ratio of my prediction, $\frac{35 \text{ off}}{100 \text{ prediction}} = 35\%$, was a smaller percent error than Max's prediction. Max's prediction was 22 candies off but a whopping $\frac{22 \text{ off}}{40 \text{ prediction}} = 55\%$ percent error.

To find percent errors find the *positive* difference between your actual number of candies and your prediction. In my case this is $135 - 100 = 35$. Use that difference to calculate the percentage off by dividing 35 by your prediction estimate, $= \frac{35}{100} = 35\%$.

Find the percent error for each of my friends and rank us from first to worst.

Name	Prediction	Actual	Percent Error
Me	100	135	
Max	40	62	
Jen	50	44	
Sofia	25	35	

Part Three

Your turn! Your teacher will have everyone in the class make predictions as to the number of candies that they will get trick-or-treating (if you aren't trick-or-treating, you could predict this for a younger sibling, relative or family friend).

Next record the predictions for several students in the class. Use the table below to record your predictions.

Name	Prediction	Actual	Percent Error

After trick or treating is over go back and fill out the actual amounts of candy that each person in your group received. Find the percent error for each of you. Who came the closest using percent error? Who came the closest using measurement error?

In your opinion, which value, percent error or measurement error, tells us who was the better guesser?

