Paper Airplane Fractions

1. Design and create several different paper airplanes
2. Give each plane a name or assign it a number
3. Find a space where you can throw your planes without crashing into anything, and it's easy to get a good measurement for the distance traveled.
4. From the same spot, with the same "throw" (thrust) for each plane, throw and measure the distance for each.
5. Record your measurements in the table below:

Plane	Distance Traveled (units?)

What is the average distance traveled by all of your airplanes?

(Add up the distances for all of the planes, and divide by the number of planes you tested in the table above. If you only filled out five rows in the table, then you would divide your total distance by 5.)

What fraction of the planes traveled further than the average?

Find your best plane and put it next to the plane that traveled the shortest distance. What differences do you notice about these two airplanes?
Can you explain why one went further?

What can you do to improve the short distance plane?
Go ahead and do it now, and re-run your distance test for just this one plane.

What is the new distance that it traveled? (If it traveled even shorter, then something different. We want this plane to improve, even if it's just a little bit.)

How much did your new design help improve your short distance plane's performance?

Here's how to figure this out:

If your plane initially flew 10 feet, and after you changed a few things, it now flies 12 feet. That is a 2-feet improvement!

Divide the "improvement" (for this example, it's 2 feet) by the original performance (10 feet) to get the fractional increase of 2/10 or 1/5. Your plane is now flying 1/5 further than it was originally going with your first design. (That's a 20% increase in performance, and we'll learn how to calculate percentage soon!) That's amazing!

Here's another example. If someone wants to lose weigh, and originally they weigh 200 pound;, after eating well and exercising every day they are now at 150 pounds. They have lost 50 pounds (that's the difference).

We divide this difference (50) by this original weight (200) to get 50/200 = ¼. So he's lost a quarter of his original weight!