

Percents

Why are percents useful?

Suppose you want to compare things and make decisions based upon that comparison. Sometimes, making the comparison is easy:

Example

Which computer chip is more reliable?

Brand A: 2 defects out of 1000 manufactured.

Brand B: 3 defects out of 1000 manufactured.

Since we tested 1000 from each manufacturer it is easy to tell that Brand A is more reliable based on this comparison.

When things are not as clear-cut, having the results stated in percent form makes life much easier:

Example

Suppose you are a coach and are trying to decide which of your guards is better at free throw shooting. Tim Dribble made 40 out of 50 attempts while Ray Foulter made 30 out of 40.

Since the players have attempted a different number of free throws it is difficult to compare the results.

What if we converted their current success rates to report how many free throws they would have made if they attempted 100 free throws?

For Tim Dribble:

40 baskets out of 50 attempts would be equivalent to 80 out of 100: $\frac{40}{50} = \frac{80}{100}$

80 out of 100 is the same thing as **80%**.

For Ray Foulter:

30 baskets out of 40 attempts would be equivalent to 75 out of 100: $\frac{30}{40} = \frac{75}{100}$

75 out of 100 is the same thing as **75%**.

Now you can tell that Tim is a better free throw shooter (80%) than Ray (75%).

In general, percents are useful in comparisons because you are creating a “level playing field”. By comparing everything against 100 you have created that level field.