# Create a plot in ggplot2

Suppose you want to plot the relationship between body mass and flipper length in the three penguin species. You can choose a specific geom that fits the type of data you have. Points show the relationship between two quantitative variables. A scatterplot of points would be an effective way to display the relationship between the two variables. You can put flipper length on the x-axis and body mass on the y-axis.

Type the following code to create the plot. But before you run it, review the code piece by piece:

**ggplot(data = penguins) + geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g))**

**ggplot(data = penguins):** In ggplot2, you begin a plot with the ggplot() function. The ggplot() function creates a coordinate system that you can add layers to. The first argument of the ggplot() function is the dataset to use in the plot. In this case, it's "penguins."

**+**: Then, you add a "+" symbol to add a new layer to your plot. You complete your plot by adding one or more layers to ggplot().

**geom_point()**: Next, you choose a geom by adding a geom function. The geom_point() function uses points to create scatterplots, the geom_bar function uses bars to create bar charts, and so on. In this case, choose the geom_point function to create a scatter plot of points. The ggplot2 package comes with many different geom functions. You'll learn more about geoms later in this course.

**(mapping = aes(x = flipper_length_mm, y = body_mass_g))**: Each geom function in ggplot2 takes a mapping argument. This defines how variables in your dataset are mapped to visual properties. The mapping argument is always paired with the aes() function. The x and y arguments of the aes() function specify which variables to map to the x-axis and the y-axis of the coordinate system. In this case, you want to map the variable "flipper_length_mm" to the x-axis, and the variable "body_mass_g" to the y-axis.

Now go ahead and run the code. When you do, you get the following plot:

The plot shows a positive relationship between the two variables. In other words, the larger the penguin, the longer the flipper.

# Create your own plot

To create your own plot using code, follow these three steps:

1. Start with the ggplot() function and choose a dataset to work with.

2. Add a geom_ function to display your data.

3. Map the variables you want to plot in the arguments of the aes() function.

Try plotting with different datasets using different geoms and mapping arguments. Coming up in this course, you'll learn even more about the process of creating a plot. You'll also get a chance to work with the Penguins dataset to create lots of different plots in ggplot2.

**Pro-Tip:** You can write the same section of code above using a different syntax with the mapping argument inside the ggplot() call: **ggplot(data = penguins, mapping = aes(x = flipper_length_mm, y = body_mass_g)) +  geom_point()**

---