

```
library("ggplot2")
```

```
quadPlot <- ggplot(bluegill_fish, aes(x = age, y=length)) + geom_point() + stat_smooth(method  
= "lm", formula = y ~ x + I(x^2), size = 1)  
quadPlot
```

```
Agesq <- bluegill_fish$age^2
```

```
quadModel <- lm(bluegill_fish$length~bluegill_fish$age+Agesq)  
summary(quadModel)
```

#Looking at the overall F-statistic shown on the bottom and associated p-value, this quadratic model is significant! This means that age is a significant quadratic predictor of bluegill fish length.

#F-statistic: 320.9 on 2 and 75 DF, p-value: < 2.2e-16

```
exMod <- lm(log(bluegill_fish$age)~bluegill_fish$length)  
summary(exMod)
```

is significant, however, fits quadratic relationships graph better