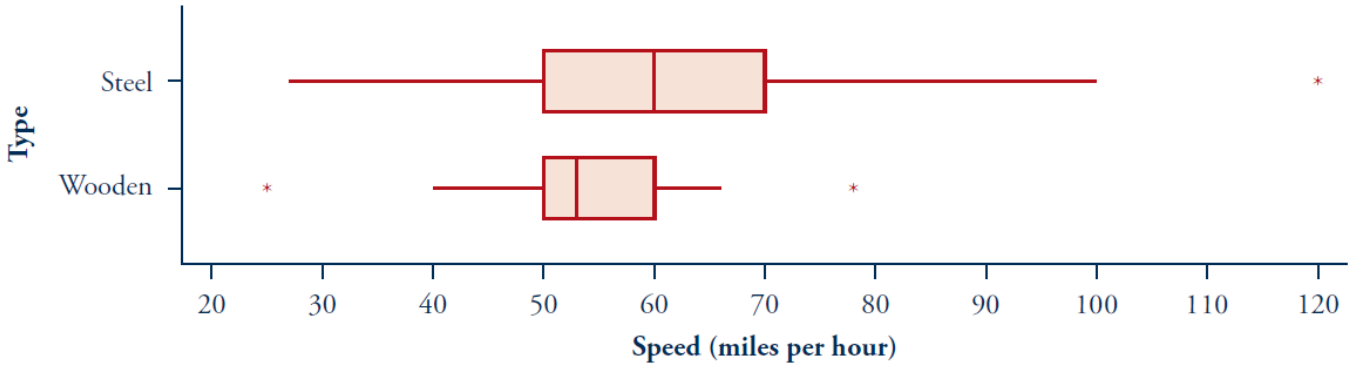
Introduction to Statistics
Activity 3.3a **NAME:**

Rollercoaster Boxplots

The following boxplots display the distributions of top speeds (in miles per hour) for roller coasters in the United States, classified by whether the coaster is wooden or steel:



Observational unit:

Explanatory variable: Type:

Response variable: Type:

a. What proportion of the steel coasters have a top speed of 60 miles per hour (mph) or greater? Explain how you can tell from the boxplots.

b. What proportion of the wooden coasters have a top speed of 60 mph or greater? Explain how you can tell from the boxplots.

c. Which type of coaster (steel or wooden) has a higher proportion of coasters with a top speed greater than 50 miles per hour, or are the two types of coasters the same, or is it impossible to determine from the boxplots? Explain how you can tell (or why you cannot tell) from the boxplots.

d. Which type of coaster (steel or wooden) has a higher proportion of coasters with a top speed greater than 45 miles per hour, or are the two types of coasters the same, or is it impossible to determine from the boxplots? Explain how you can tell (or why you cannot tell) from the boxplots.

e. Which type of coaster (steel or wooden) has more variability in its speeds, or is the variability in the two types of coasters the same, or is it impossible to determine from the boxplots? Explain how you can tell (or why you cannot tell) from the boxplots.

f. Which type of coaster (steel or wooden) is more prevalent, or are there equal numbers of both types, or is it impossible to tell from the boxplots? Explain how you can tell (or why you cannot tell) from the boxplots.

Build a boxplot for these five number summaries on the chart below (use a straight edge for your range):

	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Advanced Compact	63	69	70	73	78
Compact	62	65	71	73.5	76
Subcompact	53	61.75	65.5	69.25	75
Super-Zoom	66	72.25	75.5	79	81