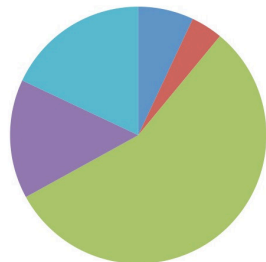


Student Name:

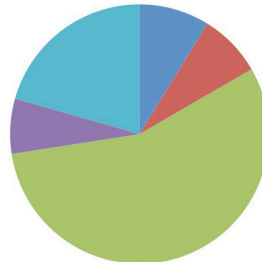
Period:

1980s



- Plastic
- Aluminum
- Steel
- Iron
- Other

2008



- Plastic
- Aluminum
- Steel
- Iron
- Other

Complete the table below by calculating the mass of each of the materials used in a car in 1980 and a car of the same size in 2008.

Material found in a 567 kg car	Percentage in a 1980 car	Percentage in a 2008 car	Mass (kg) of Material in a 1980 car	Mass (kg) of Material in a 2008 car
Plastic	7	9		
Aluminum	4	8		
Steel	56	55		
Iron	15	7		
Other	18	21		

- On average, iron and steel weigh three times as much as the most common alloy of aluminum that would be used in auto construction. If you assume that the iron and steel components have been replaced by aluminum, how much mass has been saved?
- Could more steel be replaced by aluminum? Engineers look at not only the mass of the product but its strength. One common component is called "6061" It can approach the strength of steel, but you may need more aluminum (as much as three times) to create as strong a vehicle. What other properties might engineers need to consider as they replace iron and steel with aluminum?
- About 73 aluminum cans weigh a kilogram. How many recycled cans would be needed to provide the aluminum for a modern small car?