

Name: _____ Date: _____ Class: _____

Alloy Advantage Summary Assessment

Part A: On the lines below, define *alloy* in your own words.

Part B: Review the table below. Answer the questions that follow.

	Description	Properties	Uses
Iron (Fe)	<ul style="list-style-type: none">● Element (pure substance)● Atomic number 26● Fourth most abundant element of Earth's crust	<ul style="list-style-type: none">● Density: 7.8 g/cm³● Melting point: 1538 °C● Very reactive● Rapidly corrodes● Hard● Brittle	<ul style="list-style-type: none">● Make alloys● Vital to plant and animal life; carries oxygen
A709 Steel	<ul style="list-style-type: none">● Alloy (mixture)● Composed of mostly iron, magnesium, silicon and carbon	<ul style="list-style-type: none">● Density: 7.9 g/cm³● Melting point: 1510 °C● Non-corrosive in most environments● High strength● Non-brittle	<ul style="list-style-type: none">● Bridges● Buildings (skyscrapers)

1. How do the properties of iron change once an alloy is created?

2. Why might a materials engineer recommend the use of steel over pure iron in the design of bridges?