Name: _____   Date: _____

Identifying Substances

Properties of Metals

Metal	Color	Density	Other properties
aluminum	silvery-white	2.7 grams/cm^3	
brass (mixture of copper and zinc)	gold	8.4 grams/cm^3	
copper	reddish-orange	9.0 grams/cm^3	
gold	gold	19.3 grams/cm^3	
iron	silvery-white	7.9 grams/cm^3	attracted to magnets
lead	gray	11.3 grams/cm^3	
magnesium	gray-white	1.7 grams/cm^3	
mercury	silver	13.4 grams/cm^3	liquid at room temperature
silver	silver	10.5 grams/cm^3	
steel (mixture of iron and carbon)	silver	7.5 grams/cm^3	most types attracted to magnets
titanium	silver	4.5 grams/cm^3	
zinc	dark gray	7.1 grams/cm^3	

Name: _____   Date: _____

Identifying Substances (continued)

Part 1: Initial Claims of Metal Cubes

Record your initial claims for what each cube is made of:

Cube A: _____

Cube B: _____

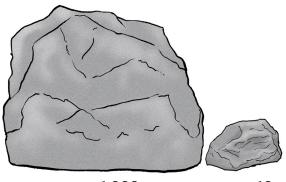Cube C: _____

Cube D: _____

Cube E: _____

Name: _____ Date: _____

Identifying Substances (continued)

Part 2: Identifying Metal Cubes

Revise your claim for the identity of each cube below and write an argument to support your claim. In your argument, use evidence from your observations and the data you gathered.

Cube A:

_____

_____

_____

Cube B:

_____

_____

_____

Cube C:

_____

_____

_____

Cube D:

_____

_____

_____

Cube E:

_____

_____

_____

Name: _____ Date: _____

Identifying Substances (continued)

Part 3: Mystery Substances Scenario

Spacecraft bring back samples from two asteroids. One brings back a small sample, and the other brings back a large sample. Back on Earth, scientists observe that the samples have similar color and hardness. Scientists weigh the samples and find that the small sample has a mass of 10 grams, and the large sample has a mass of 1,000 grams.

mass: 1,000 g   mass: 10 g

Describe an investigation plan that would help the scientists gather more evidence about whether the two samples are likely to be the same substance.

_____

_____

_____

_____

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