NAME DATE CLASS

Chapter 11

ENRICHMENT

Use with Section 1

• Ocean Water

Composition of Ocean Water

An average ocean water sample with the mass of one kilogram contains about 35 grams of dissolved salts. Four kinds of ions make up 97 percent of the dissolved salts. Of those four kinds, ions of sodium and chlorine ions (called chloride ions) make up the largest percentage of the 35 grams. The relative amounts of the four kinds of ions are shown in the table below. Each value represents the percentage of the ions present. Use the table to answer the questions.

Ion	Percent (%) of total salts
Chloride (Cl)	55.0
Sodium (Na)	30.6
Sulfate (SO_4)	7.7
Magnesium (Mg)	3.7

1. Calculate how many grams of chloride ions are present in 50 grams of ocean salts. Show your work. _____

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2. How many grams of magnesium ions are present in 50 grams of ocean salts? _____

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3. Suppose you collect 1000 kilograms of sea salt by evaporating ocean water. How much of the 1000 kilograms is sulfate? _____

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4. If you wanted to collect 245 grams of sea salt, how many kilograms of ocean water would you need? _____

5. Suppose the ice cap at the north pole melted. How might this change the salt content in a kilogram in mass of ocean water? _____

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