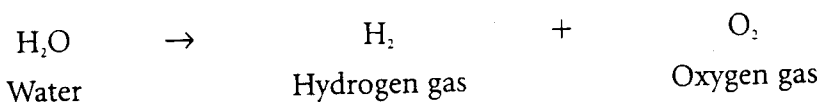


SECTION 17-2

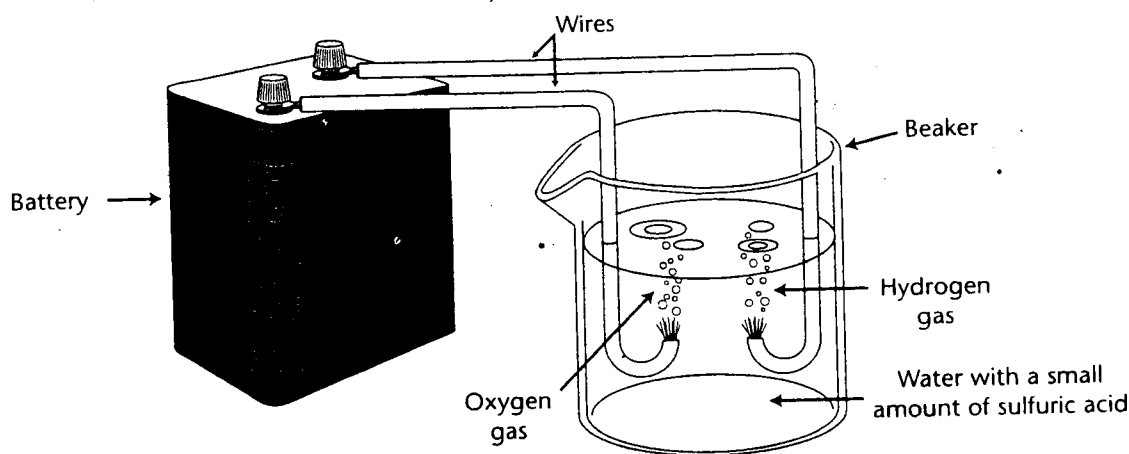
ENRICH

The Decomposition of Water

You learned in Section 2 that hydrogen gas and oxygen gas can react to produce water. The reverse of this reaction can also occur. In other words, water can be broken down to make hydrogen gas and oxygen gas. The breakdown of water is a decomposition reaction. The unbalanced equation for this reaction is shown below.

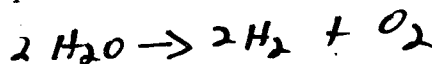


For this reaction to occur, electricity must pass through the water as shown in the figure below. Two wires are connected to a battery, and the free ends of the wires are put into a beaker of water that contains a small amount of sulfuric acid. The sulfuric acid helps to increase the flow of electricity through the water.



Answer the following questions on the back of this sheet or on a separate sheet of paper.

- Write a balanced equation for the decomposition of water:
- How many atoms of hydrogen are on the left side of the balanced equation? How many oxygen atoms? How many hydrogen atoms are on the right side of the balanced equation? How many oxygen atoms?
- The water in a beaker has a mass of 18 g. Electricity is passed through the water for two hours. Afterward the water has a mass of only 16 g. What happened to the missing mass?
- Water decomposes to make 4 g of hydrogen gas and 32 g of oxygen gas. What mass of water decomposed? How do you know?
- Look at the figure above. How can you tell that a reaction is occurring?



4 H's 2 O's on each side

Gas that has escaped from the beaker

mass of products must equal mass of reactants

Gas bubbles are being produced

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