CONCEPT: GAS EVOLUTION EQUATIONS (SIMPLIFIED)

- A **Gas Evolution Equation** is a molecular equation that involves the creation of CO_2 gas.
  - □ The gas is formed once *median products* lose a water molecule.
  - □ **Median Product:** The form a product holds before it fully converts into its final product form.
    - Final Product = Median Product – _____.

Gas-Evolution		
Reactant Ions	Median Product	Final Product
$H^+ + HCO_3^-$		
$H^+ + CO_3^{2-}$		

EXAMPLE: Predict whether a chemical reaction occurs and write the balanced molecular equation.

___ Na_2CO_3 (aq) + ___ HBr (aq) ⟶

STEP 1: Break up **Reactant 1** and **Reactant 2** into their ionic forms.

STEP 2: **Swap Ionic Partners** by remembering that opposite charges attract.

- □ Apply the rules for combining ions based on the numerical values of their charges.

STEP 3: Identify the *Median Product* or gas that forms from the gas evolution equation.

- □ Except for hydrogen sulfide, break it up into water and gas.

STEP 4: If necessary, balance your molecular equation by placing the correct coefficients in front of each molecule.

CONCEPT: GAS EVOLUTION EQUATIONS (SIMPLIFIED)

PRACTICE: Predict the products formed from the following gas evolution equation.

___ $KHCO_3$ (aq) + ___ HCl (aq) ⟶