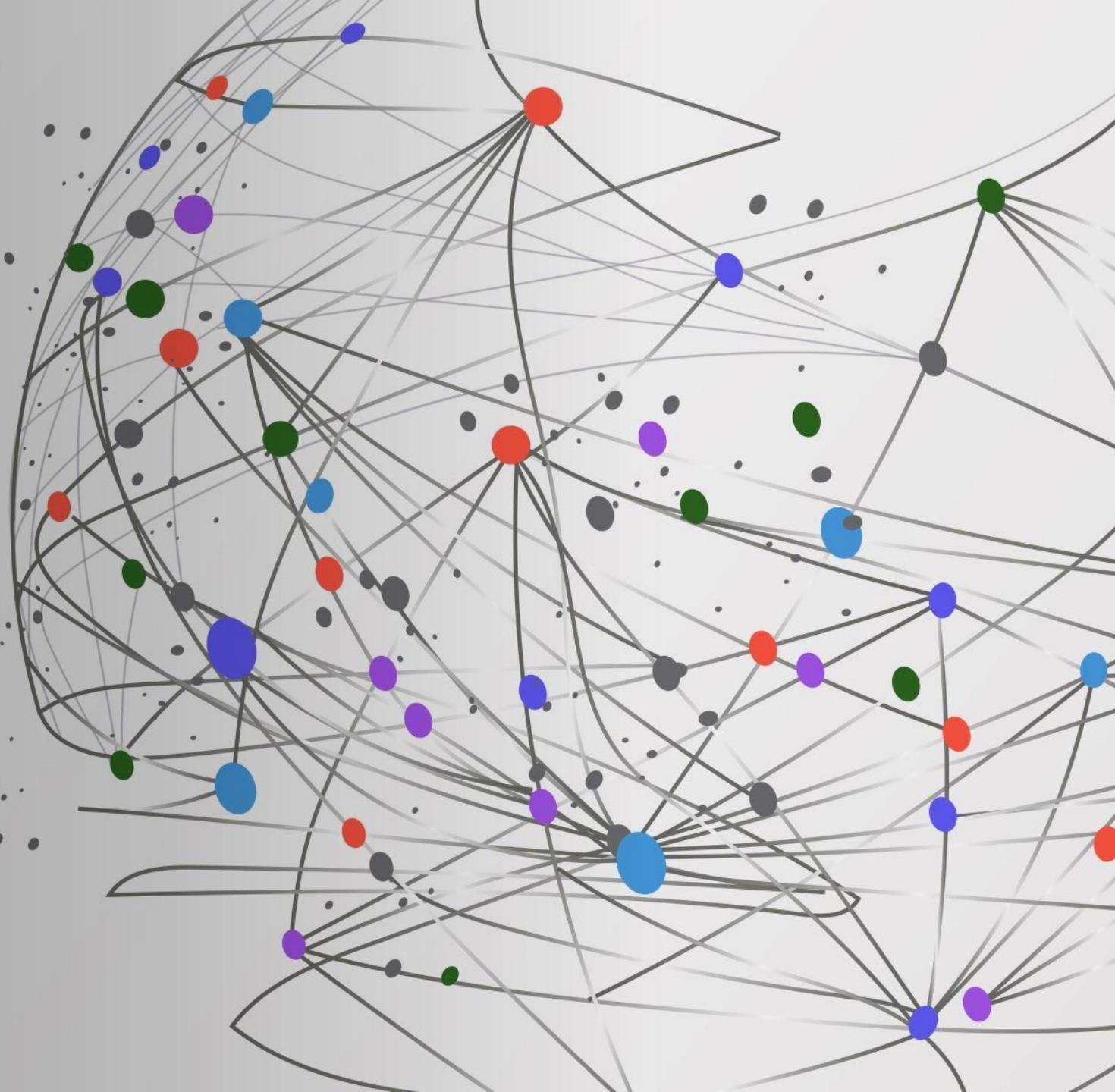
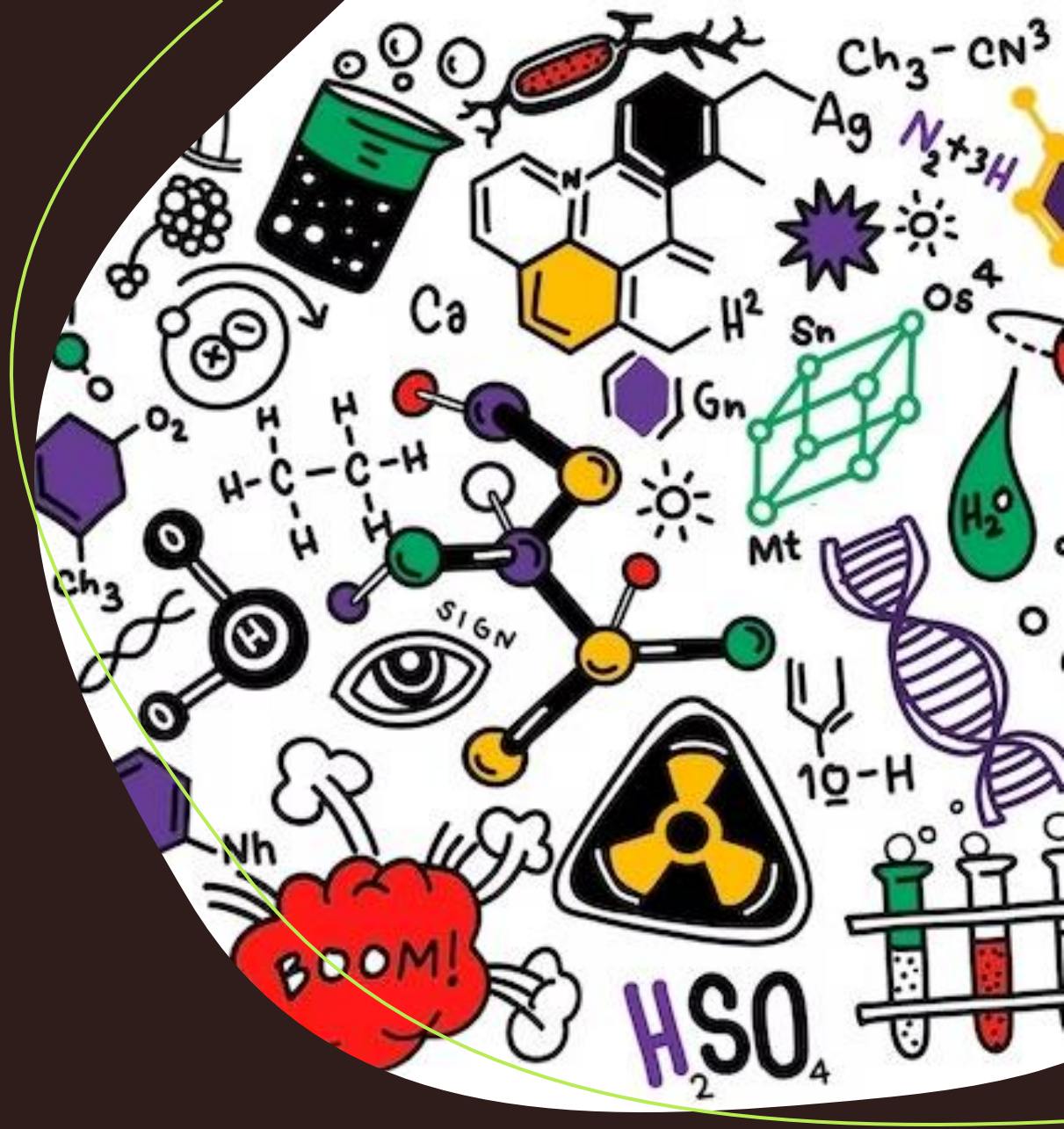
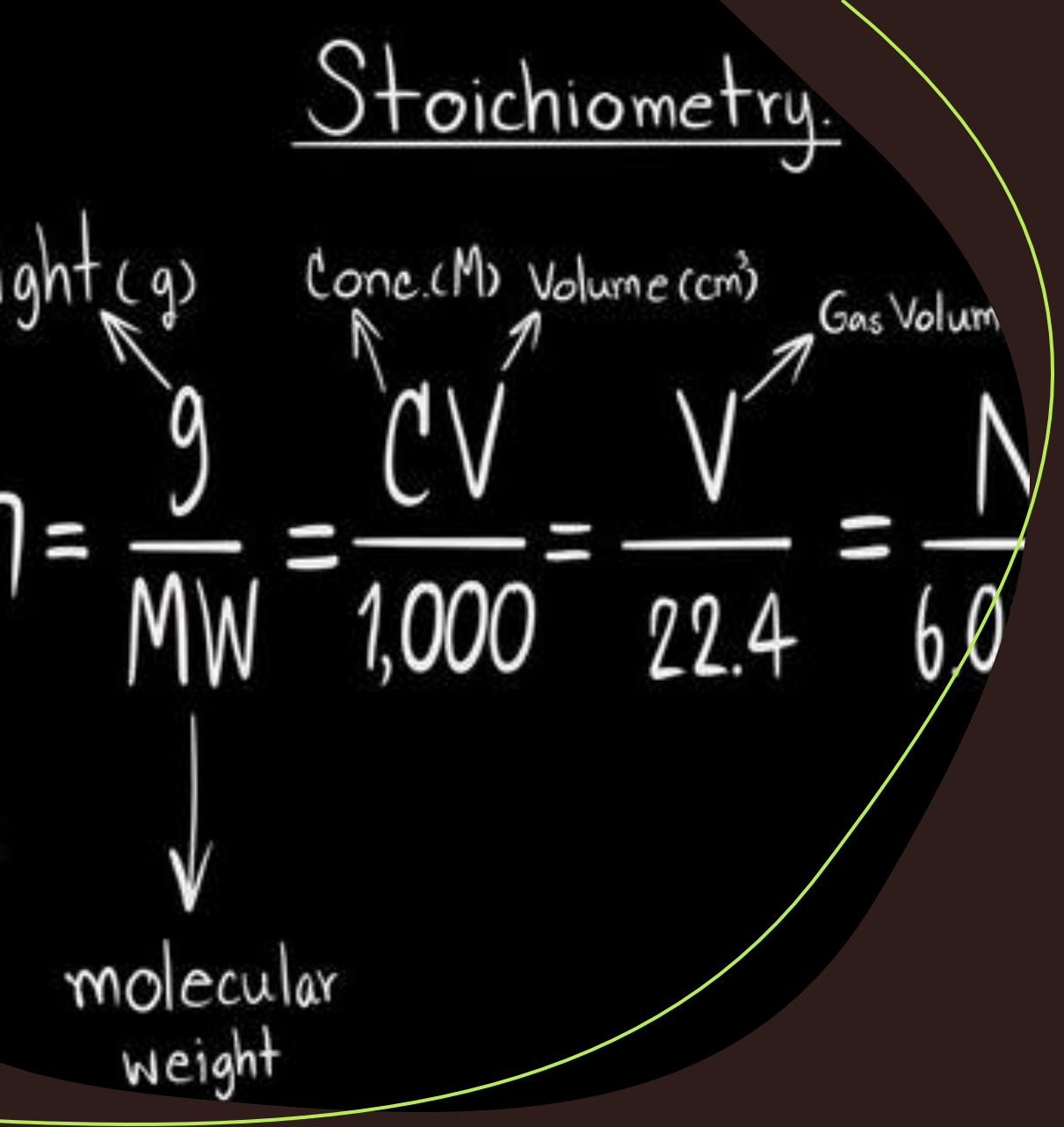
Maths in Chemistry



Introduction

- Chemistry heavily relies on mathematics.
- Accurate predictions, data analysis, and problem-solving are essential in chemistry.
- This presentation explores key mathematical concepts in chemistry.





Stoichiometry:

- Stoichiometry: Determines quantities in chemical reactions.
- Molar mass: Key for stoichiometric calculations.
- Example: Solving a stoichiometry problem.

Percent Composition:

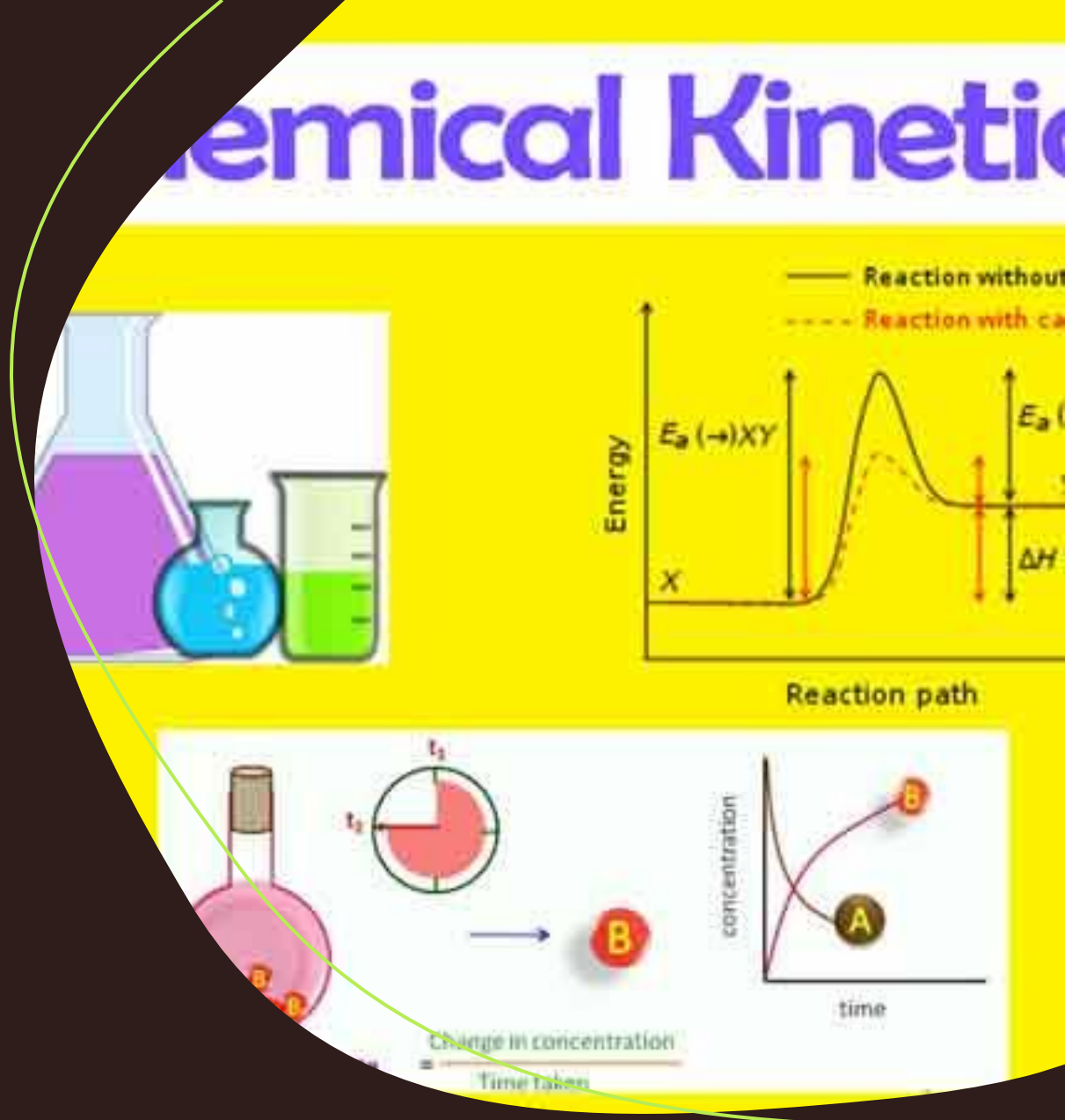
- Calculates element percentages in compounds.
- Importance in identifying substances.
- Example: Calculating percent composition.

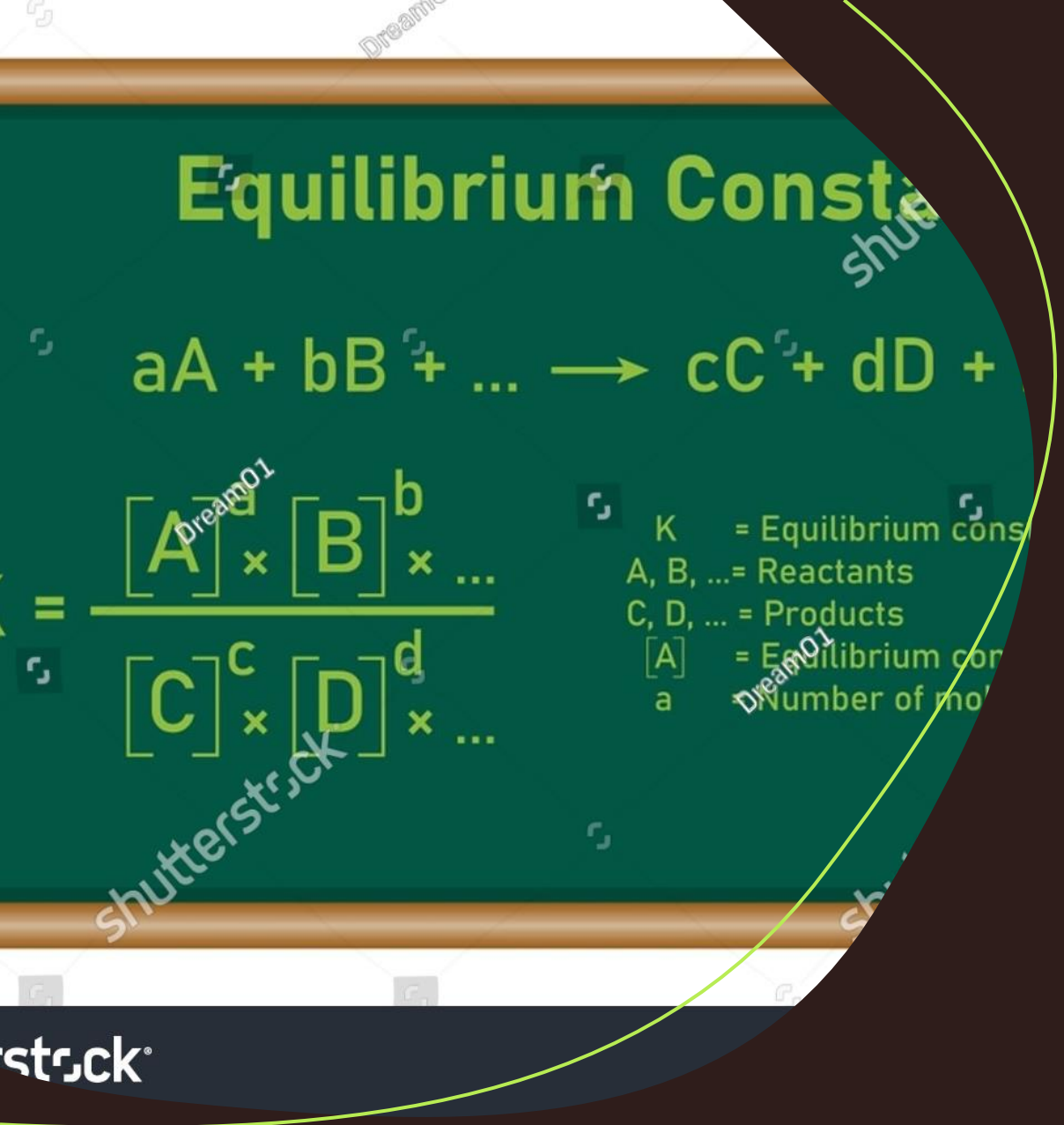
The Ideal Gas Law:

- Ideal Gas Law (PV = nRT) describes gas behavior.
- Predicts pressure, volume, or quantity of gas.
- Example: Using the ideal gas law in a scenario.

Chemical Kinetics:

- Mathematical aspects of reaction rates.
- Reaction order and rate constants.
- Modeling reaction rates.





Equilibrium Constants:

- Equilibrium concept and constants (Kc, Kp).
- Predicting reaction direction.
- Example: Calculating equilibrium constants.
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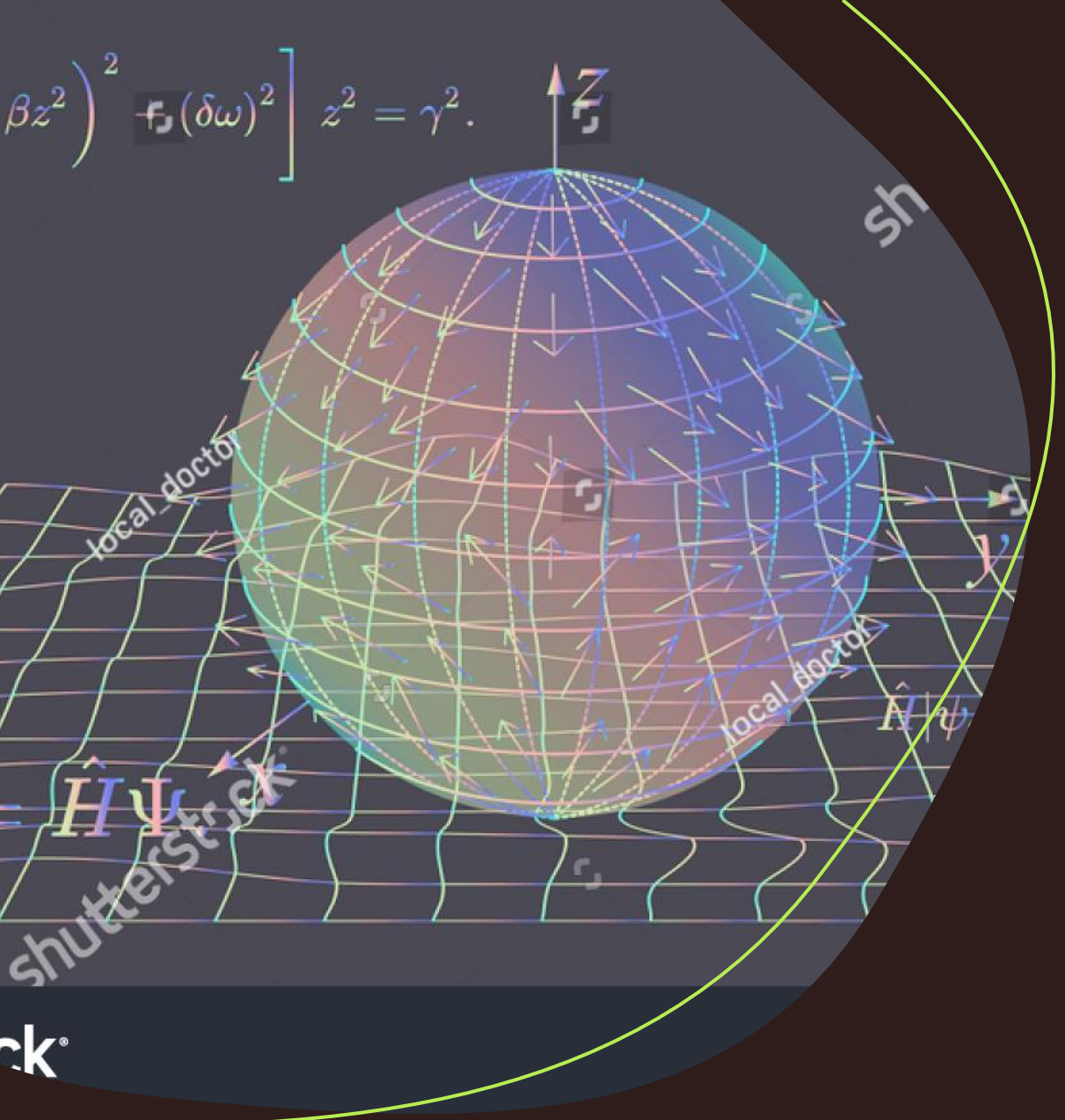
pH and Acid-Base Equilibria:

- pH relates to hydrogen ion concentration.
- Acid-base titration calculations.
- Examples: pH calculations and titration curves.

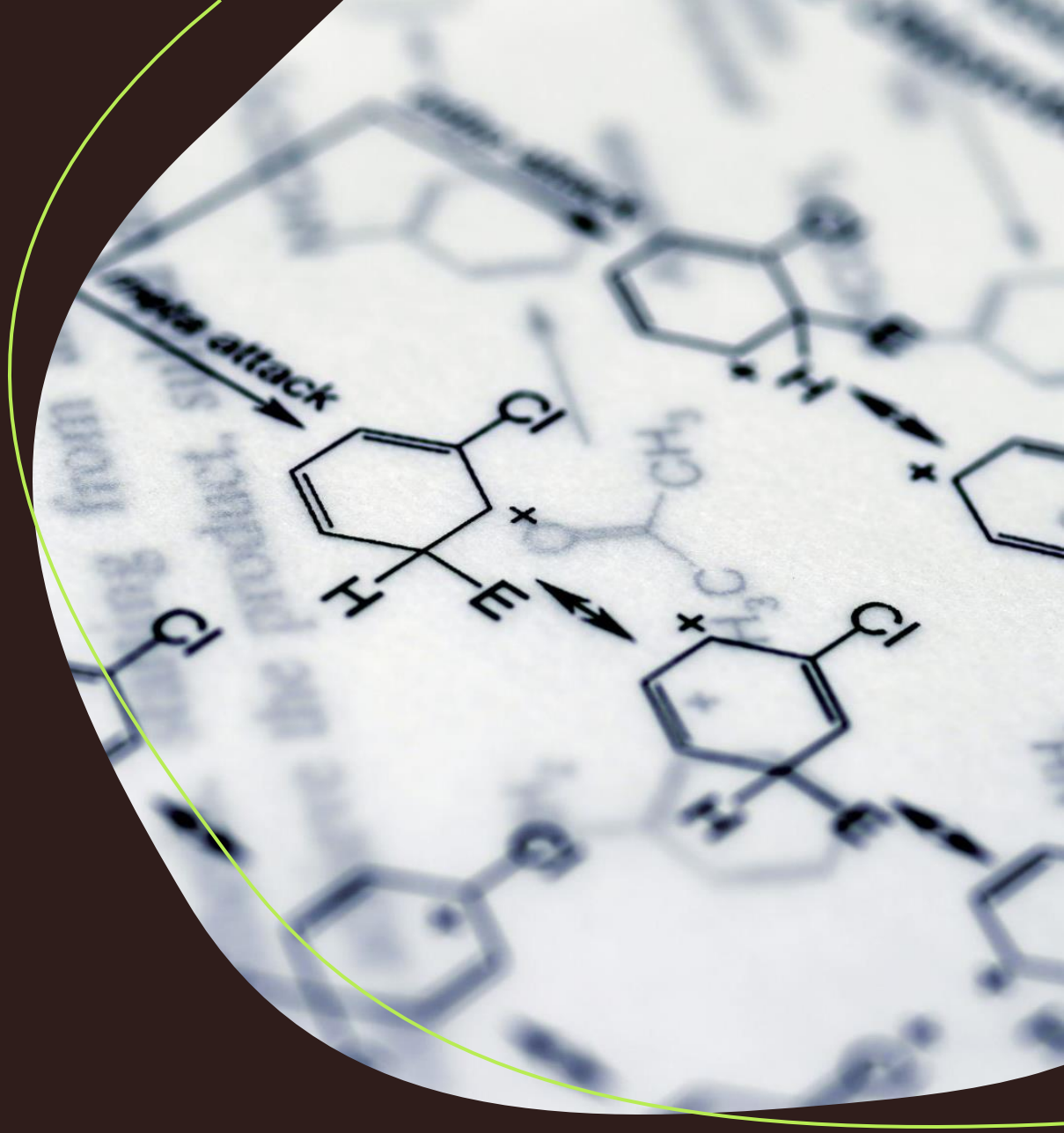


Quantum Mechanics:

- Quantum mechanics foundation in chemistry.
- Wave functions and energy levels.
- Predicting atomic and molecular behavior.

Conclusion:

- Mathematics integral in chemistry for precision.
- Enables precise measurements and modeling.
- Encourage exploration of the math-chemistry link.




Thank you