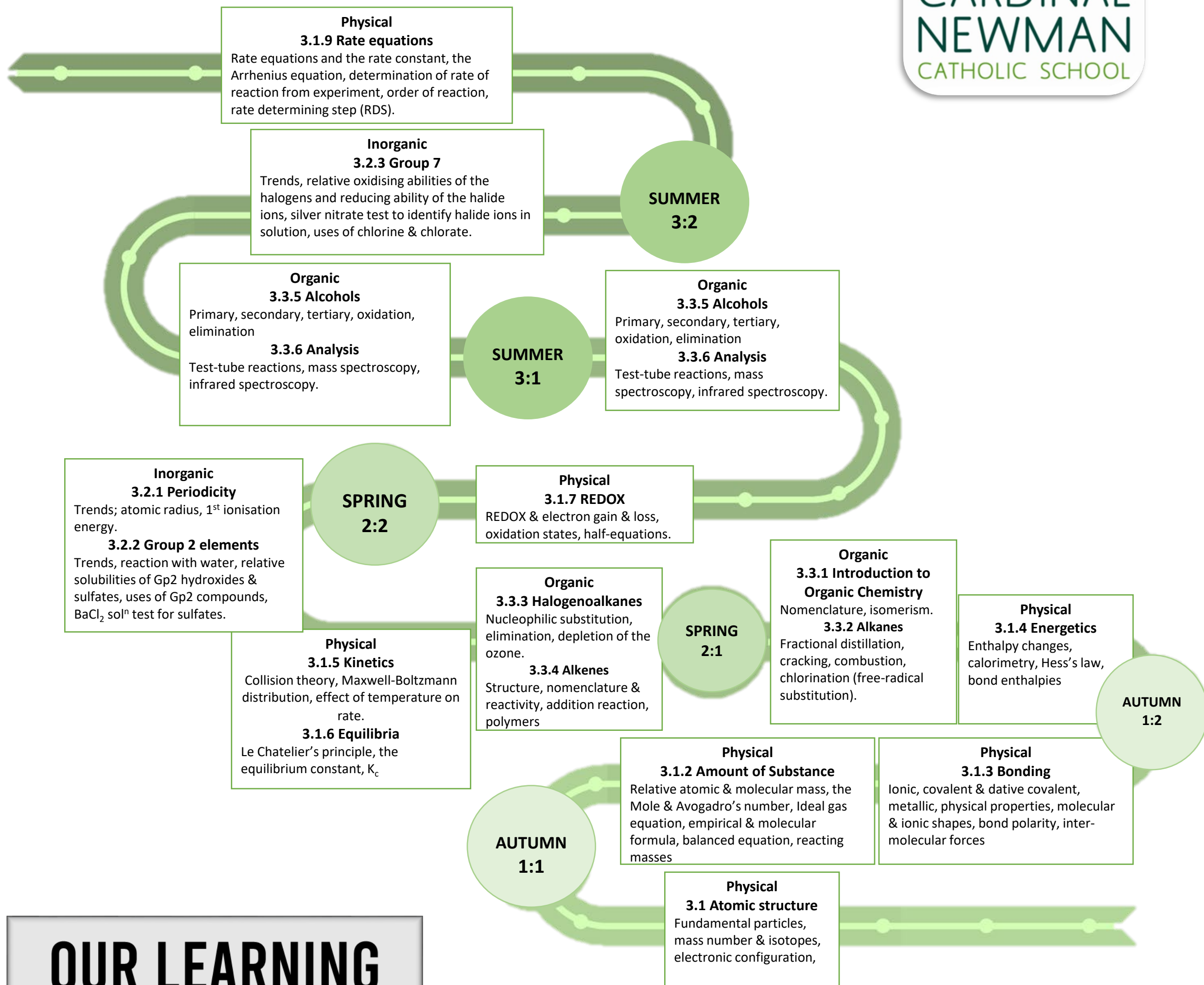


# Chemistry KS5: Year 12



**OUR LEARNING  
JOURNEY**

# Chemistry KS5: Year 13



CARDINAL  
NEWMAN  
CATHOLIC SCHOOL

Revision & Review

SUMMER  
3:2

**Organic**  
**3.3.15 NMR spectroscopy**  
<sup>13</sup>C and <sup>1</sup>H NMR spectroscopy.  
**3.3.16 Chromatography**  
As a method of separating and identifying components in a mixture, TLC

SUMMER  
3:1

**Organic**  
**3.3.13 Amino acids & DNA**  
Acidic & basic properties, zwitterions, protein structure, enzymes, DNA, action of anti-cancer drugs.  
**3.3.14 Synthesis**  
Steps involved in synthesis of organic compounds.

**Inorganic**  
**3.2.4 Periodicity**  
Properties of Period 3 elements & their oxides.

SPRING  
2:2

**Inorganic**  
**3.2.5 Transition metals**  
General properties, substitution reactions, shapes of complex ions, coloured ions, variable oxidation states, catalysis.  
**3.2.6 Reactions of aqueous ions**  
Reactions of Fe, Cu, Al ions in solution.

**Physical**  
**3.1.1 Electrochemical cells**  
Electrode potentials, simple cells, EMF, commercial applications

**Organic**  
**3.3.11 Amines**  
Preparation, base properties, as nucleophiles  
**3.3.12 Polymerisation**  
Condensation polymers, biodegradability

SPRING  
2:1

**Organic**  
**3.3.9 Carboxylic acid derivatives.**  
Esters, lipids, acylation, acyl chlorides, acid anhydrides, amides, nucleophilic addition-elimination.  
**3.3.10 Aromatic**  
Structure, electrophilic substitution, nitration, Friedel-Crafts acylation

**Physical**  
**3.1.12 Acids & Bases**  
Bronsted-Lowry definition, pH,  $K_w$ , weak acids, titration curves & indicators, buffer Solutions.

AUTUMN  
1:2

AUTUMN  
1:1

**Physical**  
**3.1.8 Thermodynamics**  
Enthalpy changes, the Born-Haber cycle, entropy and Gibb's free energy change.

**Organic**  
**3.3.7 Optical isomerism**  
Ionic, covalent & dative covalent, metallic, physical properties, molecular & ionic shapes, bond polarity, intermolecular forces  
**3.3.8 Aldehydes & ketones**  
Chemical tests, reduction, nucleophilic addition

**Physical**  
**3.1.10 Equilibrium constant,  $K_p$**   
Mole fraction, partial pressures, calculating  $K_p$ .

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