DINTHILL TECHNICAL HIGH SCHOOL

SYLLABUS OUTLINE

GRADE 9

DEPARTMENT: NATURAL SCIENCE **YEAR:** 2026 – 2027

COURSE OF STUDY: CHEMISTRY

PRE-REQUISITE: GENERAL SCIENCE

COURSE DESCRIPTION: This course equips students with foundation knowledge of chemistry. It is proposed to help develop the student's scientific skills and foster understanding/application of core concepts in chemistry.

TERM ONE

DURATION	TOPIC	OBJECTIVES	ACTIVITY/ASSESSMENT
2 WEEKS (Sept 7 – 18, 2026)	**INTRODUCTION TO CHEMISTRY** 1. What is Chemistry? 2. Lab Rules 3. The Bunsen Burner	• Explain what Chemistry entails; • Outline at least three advantages and three disadvantages of the discoveries made by scientists. • State and discuss at least three laboratory rules. • Give the functions of the different parts of the Bunsen Burner. • Distinguish between the luminous and non-luminous flames.	Research Homework Class Work Lighting the Bunsen Burner (Graded Activity) Unit Test

3 WEEKS (Sept 21 – Oct 9, 2026)	**MATTER** 1. States of Matter 2. Inter-conversion of the different states of matter 3. The particulate nature of matter.	• Recall that matter is anything that has mass and occupy space. • Describe the states of matter in terms of energy and arrangement of particles. • Explain the conditions under which matter can be change from one form or state to the next; • Cite evidence in support of the particulate nature of matter.	Research Homework Class Work Sheet Solid, Liquid, and Gas (Week 1) Unit Test
4 WEEKS (Oct 12 – Nov 6, 2026)	**ELEMENTS AND COMPOUNDS**	• Define the terms elements and compounds. • Classify elements as metallic or non-metallic. • Give the names and symbols for the first 20 elements in the Periodic Table. • Complete word equations to show the formation of compounds. • Describe the physical and chemical properties of metals and non-metals. • List at least FIVE uses of metals and non-metals.	Class Work Homework **Six Weeks Test (Nov 2 - 6, 2026)*****
4 WEEKS (Nov 9 – Dec 4, 2026)	**MIXTURES AND THEIR SEPARATION** 1. Pure and impure substances 2. Classification of mixtures 3. Types of solution 4. Solubility of solids 5. Separation techniques 6. Extraction of sugar cane	• Distinguish between pure substances and mixtures. • Distinguish among solutions, suspensions and colloids. • Identify different types of solutions. • Investigate the effect of the temperature on the solubility of solids in water. • Apply suitable separation techniques based on differences of the components. • Describe the extraction of sucrose from sugar cane.	Class Work Sheet Solubility Homework Unit Test Group Project (Week 1) Quiz

END OF TERM TEST – DECEMBER 2026

TERM 2

3 WEEKS (Jan 4 – 22, 2027)	**ATOMIC STRUCTURE** 1. Properties of sub-atomic particles. 2. Structure of the atom 3. Symbolic notation	• Describe with illustration the structures of atoms of atomic number 1 to 20. • State properties of electrons and protons and neutrons. • Define the atomic number and mass number. • Define relative atomic mass • Interpret notations of the form $^{a}_{b}X^{c}_{d}$	Atom Model (Group Work) Homework Worksheet
1 WEEK (Jan 25 – 29, 2027)	**ISOTOPY** 1. Definition of isotope and isotopy 2. Radioactive isotopes and their uses.	• Define Isotopy • List the uses of Radioactive isotopes.	Class Work Unit Test
4 WEEKS (Feb 1 – 26, 2027)	**PERIODIC TABLE AND PERIODICITY**	• Explain the basis for the arrangement of elements in the periodic table. • Explain trends in Group II. • Explain trends in Group VII. • Identify trends in period 3. • Predict properties of unknown elements based on the position in periodic table.	Classwork group (WKB pg 17 Q 1) Homework (WkB pg18 Q 2) **Six Weeks Test (Feb 22 – 26, 2027)*****

5 WEEKS (Mar 1 – 24, 2027 & Apr 5 – 9, 2027)	**ACIDS, BASES / ALKALIS** 1. Common acids and their sources 2. Definition of terms 3. Indicators and the pH scale. 4. Strength of acids and alkali 5. Concentration of acids. 6. Properties of acid and alkali	• Define acid, acid anhydride, base, alkali, salt, acidic, basic, amphoteric and neutral oxides. • Relate acidity and alkalinity to the pH scale. • Discuss the strength of acids and alkalis based on their completeness of ionization. • Investigate the reactions of non-oxidizing acids. • List examples of acids in living systems.	Vocabulary Homework Classwork WKB pg. 35 B Unit Test
3 WEEKS (Apr 12 – 30, 2027	**FORMULAE AND EQUATIONS**	• State that a chemical formulae is a symbolic representation of a chemical compound; • Derive the chemical formulae for simple compounds. • Given the worded equation, rewrite same using chemical formulae; • Recall that a chemical formula is neutral – has no charge. • Write balanced equations including state symbols for chemical reactions.	Class Work Homework Unit Test **Six Weeks Test (Apr 26 – 30, 2027)*****
May 2027			
2 WEEKS (May 31 – Jun 11, 2027)	**REVISION ACTIVITIES**		Class activities, quizzes, etc.

***Subject to Change.