ST. JOSEPH'S SCHOOL, MAHARAJGANJ
Summer Vacation Holiday Homework
CLASS 12 BIOLOGY

SUBJECTS	TOPIC / PORTION
ENGLISH	As part of your summer vacation homework, you are instructed to maintain a daily diary for 30 days. The purpose of this activity is to improve your grammar, writing skills, creativity, and expression in English. **Instructions:** • Each entry should be between 120–150 words. • Use the following tenses in your writing: Simple Present Tense Simple Past Tense Past Perfect Tense Simple Future Tense (using "would")
PHYSICS	**Chapter 1: Electric Charges and Fields** Focus: Deep dive into Coulomb's Law, Electric Field Lines, and Gauss's Law. **Assignment: Board-Level Concept & Derivation Portfolio** **Task 1 (Core Derivations): Practice and write down the complete, step-by-step mathematical derivations for:** The Electric Field Intensity at any point on the axial line of an electric dipole. The Electric Field Intensity at any point on the equatorial line of an electric dipole. The Electric Field Intensity due to an infinitely long straight uniformly charged wire using Gauss's Law. **Task 2 (Conceptual Mapping): Draw the electric field line patterns for:** An isolated positive charge ($q > 0$). An isolated negative charge ($q < 0$). An electric dipole (equal and opposite charges). Two identical positive charges placed close to each other. **Task 3 (Numerical Practice): Solve 10 high-level numerical problems from your textbook or past board exams strictly based on Coulomb's Law (including the superposition principle) and Electric Flux.** Deliverable: A formal assignment folder containing the 3 major derivations, 4 neat field-line sketches, and 10 solved numericals.
PHYSICAL EDUCATION	**Summer Holiday Homework (Practical-1)** *Topic: Khelo India Fitness* Assessment *** Instructions to Students** • Write all the work neatly in your Lab Manual. • Include proper headings, diagrams (figures), and labeling. • Maintain clean handwriting and proper presentation. • Practice all fitness tests daily in the early morning at home. ****Submission**** • Submit the completed Lab Manual after summer vacation. • Marks will be awarded based on: Neatness Diagrams Completeness Practical performance.

BIOLOGY	1. To write the experiment of Pollen grain germination on a slide in lab manual. (AIM , MATERIAL REQUIRED, PROCEDURE, OBSERVATION TABLE (With diagram) RESULT AND PRECAUTIONS. 2. Draw the well labeled diagram of following structure on A4 sheet - a. Diagrammatic view of sectional view of seminiferous tubules. b. Diagram of Replication fork c. Diagram of transcription in bacteria d. Structure of Operon model 3. To learn and write Nucleoside , Nucleotide , Polynucleotide , Structure of DNA From Class 11 notes. 4. To solve example mcqs of chapter 1 , 2 and 3 from Ashoka book.
CHEMISTRY	Q.1. Write experiment number 1 in lab manual note book. Q.2. Solve 10 PYQs from Chapter 1 and 2 (only numericals). Q.3. Make a chart of Periodic Table (mention s, p, d, f block). Q.4. Learn and write all the important definitions given below: a) Henry's Law b) Raoult's Law c) Ideal & Non-Ideal Solution d) Osmosis and Osmotic Pressure e) Reverse Osmosis and Plasmolysis f) Kohlrausch's Law g) Molar Conductivity h) Nernst Equation i) Primary and Secondary Cell j) Electrochemical Series