

Unit title	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	Assessment tasks	ATL skills	Content
Unit 1 <u>The scientific method</u> September, October 2026	Perspective	Evidence Patterns	Scientific and technical innovation	Scientific and technological advances enable societies to understand (or at least, to try to understand) the universe	B C D	Discussion about the scientific method(D) Practical works: analysis of results(C) Examples of design (B)	Finding, interpreting, judging and creating information Analysing and evaluating issues and ideas	Elements of the scientific method Experimental approach How to design an experiment Variables in experiment How to understand graphs and tables Data analysis
Unit 2 <u>Evolution</u> November 2026	Change	Environment Consequences Balance	Fairness and development	Evolution is a consequence of the unbalanced opportunities provided by natural selection	A C D	End-of-unit or chapter tests (A) Analysis of similarities between various bones: collection and interpretation of data (C) The social impact of evolution (discussion and written piece of work)(D)	Working effectively with others Analysing and evaluating issues and ideas	Definition of evolution Evidence for evolution (fossil record, homologous structures, breeding) Overproduction, variation, natural selection and inheritance Evolution and sexual reproduction Evolution in response to environmental change
Unit 3 <u>The chemistry of life</u> December 2026 January, February, March 2027	Relationships	Function	Identities and relationships	There is a strong relationship between the structure and function of biologically important compounds	A B C	Practical work on biologically important compounds and enzymes (B, C) End-of-unit or chapter test	Reading, writing and using language to gather and communicate information Finding, interpreting, judging and creating information	Biologically important compounds Proteins and enzymes Carbohydrates Lipids Nutrition (proteins, carbohydrates and lipids in our diet) Conscious eating and healthy diet

Unit 4 <u>Cells</u> April, May, June 2027	Connections	Interaction Form	Identities and relationships	Life is the product of numerous interactions	A D	End-of-unit or chapter tests(A) The impact of knowledge about the cells for medicine and society (D)	(Re-)considering the process of learning; choosing and using ATL skills Finding, interpreting, judging and creating information	Cells, organelles Cell membrane Cell to cell communication Transport through the membrane Diffusion Osmosis
--	-------------	------------------	------------------------------	--	--------	---	--	--

Unit title	Key concept	Related concepts	Global context	Statement inquiry	Objectives	Assessment tasks	ATL skills	Content
Unit 1 <u>The human reproductive system</u> September, October 2026	Development	Consequences	Personal and cultural expression	Sexual development and its consequences for personal and cultural expression	A D	Discussion about methods of contraception and social issue (D) End-of-unit or chapter tests(A)	Managing state of mind Finding, interpreting, judging and creating information	The basic anatomy of human reproductive system Sexual development The menstrual cycle Pregnancy and birth Contraception Personal aspects of sex Sexually transmitted diseases Responsible sexual behaviour
Unit 2 <u>The nervous system and drugs</u> November, December 2026	Systems	Balance Function	Orientation in time and space	Orientation in time and space depends on healthy and balanced nervous system	A B C D	End-of-unit or chapter tests(A) Design scientific investigation about learning in humans (B) Learning in humans, data analysis (C) Application of science: pills, drugs or help, written piece of work (D)	Managing state of mind Develop new skills, techniques and strategies for effective learning Consider personal learning strategies	General plan of the nervous system Nerve cells Nerve impulse The brain and behaviour The brain and learning The brain and sleep Drugs and mental illness
Unit 3 <u>Water</u> January 2027	Change	Transformation	Identities and relationship	How and why are transformations of liquid water, ice and vapour crucial for life and the relationship between life and environment?	A B C	Practical work on properties of water important for living beings(B,C) End-of-unit or chapter tests(A)	Generating novel ideas and considering new perspectives	Water: the structure Hydrogen bonds Properties of water The relationship between the properties of water and life as we know it

Unit 4 <u>Basic ecology</u> February, March, April, May, June 2027	Systems	Environment Interaction Energy	Globalization and sustainability	Organisms interact with the natural environment by transferring matter and energy	A D	Discussion about fossil fuels and our future (D) End-of-unit or chapter tests(A)	Exchanging thoughts, messages and information effectively through interaction Reading, writing and using language to gather and communicate information Managing state of mind (Re-)considering the process of learning; choosing and using ATL skills	Communities and ecosystems Food chains Pyramids of energy The role of bacteria The greenhouse effect and the precautionary principle Consequences of a global temperature rise on ecosystems Populations Population growth curve Binomial system of nomenclature Natural classification
---	---------	--------------------------------------	--	---	------------	--	--	--

DIFFERENTIATION

For students with:

Dyslexia and dysgraphia

- Bigger font, bigger space between rows
- Dividing text in tests, practice sheets and instruction papers, Internet resources
- More time for reading, checking if the text/questions are understood
- Tolerating writing mistakes
- Allowing longer time for finishing a task if needed
- Working in a pair or a team with peers
- Check the ability of students to read primary and secondary sources and act according to results (more practice, allowing more time for group work)

ADHD

- Bigger font and space between rows
- Shorter paragraphs
- Additional explanation of tables, graphs if needed
- Check which type of graphs/diagrams are suitable for the student
- Fewer questions on tests
- Frequent checking if a student is concentrated on the work
- Questions and enough space for answers should be on the same page
- Work in pairs or small teams (up to four)
- Creating summary sheets when needed
- Encourage students to participate in class discussions
- Commend student on progress
- Regularly make notes about progress in e-dnevnik

Unit title	Key concept	Related concepts	Global context	Statement inquiry	Objectives	Assessment tasks	ATL skills	Content
Unit 1 <u>Evolution of atomic structure and periodic table</u> October- November – December	Systems	Evidence Model Patterns	Scientific and technical innovation	Scientists discern patterns and use them to construct systems with rules and conventions that help to explain how the world works. Pattern of change	A i,ii,iii C i,ii,iii,iv,v D i,ii,iii,iv	C- practical work on physical and chemical properties of matter; <i>determination of melting point of unknown compound</i> <i>Investigating chemical properties of metals and non-metals</i> D- essay on radioisotopes A- End-of-unit or chapter tests	Research; information literacy Thinking: critical thinking, transfer	This unit explores how scientific understanding of the atom has evolved through evidence, experimentation, and changing models. Students investigate key atomic models, the discovery of subatomic particles, and the development of the modern periodic table. They examine how patterns in atomic structure relate to the arrangement and properties of elements, while developing skills in analysing evidence, identifying patterns, and evaluating scientific models.
Unit 2 <u>How much, how many? (Calculations in chemistry)</u> January- February- March- April- May	Relationships	Patterns and transfer	Identities and relationship	Mathematical relationships are one of the fundamental parts of chemistry	A i,ii,iii B i,ii,iii,iv C i,ii,iii,iv,v D i,ii,iii,iv	C- practical work on determination of molar mass of CO ₂ B- design of an investigation of determination of percentage of water in hydrated salt B- design of an investigation on determination of molar mass of chosen material D- written piece of work on Contact process A- End-of-unit or chapter tests	Thinking: critical thinking, transfer Self-management; organization Communication: Research; information literacy Social; collaboration	This unit develops students' understanding of quantitative relationships in chemistry. Students explore concepts such as relative atomic mass, the mole, molar mass, chemical equations, and stoichiometric calculations. They apply mathematical skills to determine quantities of substances, interpret experimental data, and solve real-world chemistry problems accurately.

Unit title	Key concept	Related concepts	Global context	Statement inquiry	Objectives	Assessment tasks	ATL skills	Content
Unit 1 <u>May the force be with you (Bonding)</u> September-October-November	Relationship	Interactions Nature Models	Globalization and sustainability	Scientist use bonding models to explain the nature of interactions between different types of particles	A i,ii,iii B i,ii,iii,iv C i,ii,iii,iv,v D i,ii,iii,iv	B- design an investigation on solubility of different compounds in water C- practical work on conductivity of different solutions D- written piece of work on physical and chemical properties of water A- End-of-unit or chapter tests CAS- investigating quality of tap water	Thinking: critical thinking, creative thinking Research; information literacy Communication:	This unit explores how and why atoms bond to form substances with different structures and properties. Students investigate ionic, covalent, and metallic bonding, linking the movement and sharing of electrons to the formation and properties of compounds. They use models and evidence to explain chemical structures and apply their understanding of bonding to predict material properties.
Unit 2 <u>Fast and furious (chemical kinetics and equilibrium)</u> December-January-February	Change	Consequences	personal and cultural expression	What are consequences of changing factors affecting the rate and equilibrium on our life	A i,ii,iii B i,ii,iii,iv C i,ii,iii,iv,v	C- practical work on measuring the value of reaction rate B- investigation of the factors that affect the rate of an reaction or the position of equilibrium A- End-of-unit or chapter tests	Communication: Research; information literacy	This unit explores the factors that affect the rate of chemical reactions and how chemical systems reach equilibrium. Students investigate collision theory, reaction rates, catalysts, and the influence of temperature and concentration. They explore dynamic equilibrium and apply scientific models and data analysis to predict and explain how changes in conditions affect chemical systems.

Unit 3 <u>Neutralize me!</u> (Acids and bases) March- April- May	Systems	Environment	Globalization and sustainability	Human interactions with nature have significant consequences on the environments which can be seen in everyday life .	A i,ii,iii B i,ii,iii,iv C i,ii,iii,iv,v D i,ii,iii,iv	D- Written piece of work on Acid deposition B- design an investigation on acidity of different solutions C- practical work on obtaining the pH curve A- End-of-unit or chapter tests CAS- investigating the level of acidity of rain water	Thinking: critical thinking, creative thinking, transfer Research; information literacy	This unit explores the properties and behaviour of acids and bases and their importance in chemical reactions and everyday life. Students investigate the pH scale, indicators, neutralization, and acid–base reactions. They develop skills in using experimental evidence and chemical equations to explain reactions and apply their understanding to real-world situations such as environmental processes, industry, and household products.
Unit 4 <u>Energize me</u> (Electrochemistry) May-June	Change	Transformation	Scientific and technical innovation	How chemical energy is converted into electrical energy?	C i,ii,iii,iv,v D i,ii,iii,iv	C- Practical work on galvanic cells D- written piece of work on Batteries CAS- battery recycle	Thinking: critical thinking Self-management; organization Communication: Research; information literacy	This unit explores the relationship between chemical reactions and electrical energy. Students investigate oxidation–reduction reactions, electrochemical cells, batteries, and electrolysis. They develop an understanding of electron transfer and apply chemical principles to explain how electrical energy can be generated or stored, connecting electrochemistry to everyday technologies and real-world applications.

DIFFERENTIATION

For Students with Dyslexia & Dysgraphia

- **Text Formatting:** Print all materials in larger sans-serif fonts (Calibri/Arial) with generous 1.5 times line spacing.
- **Layout Structure:** Ensure questions, circuit diagrams, and answer spaces remain on the exact same page. Break multi-step redox balancing steps into numbered chunks.
- **Assessment Accommodations:** Provide extra reading/writing time; tolerate minor non-critical spelling errors in chemical terminology.
- **Collaborative Support:** Facilitate structured pair work during galvanic cell lab construction and research tasks.

For Students with ADHD

- **Page Layout:** Ensure clean, uncluttered visual formatting with larger fonts, short paragraphs, isolated question prompts, and avoid complex tabular layouts where possible.
- **Focus & Workflow:** Keep questions and response spaces on the same page; provide summary/formula cards for cell components and oxidation rules.
- **Active Engagement:** Conduct regular progress check-ins; allow brief planned movement breaks outside the classroom during long lab periods.
- **Team Structure:** Encourage active participation in lab pairs and record regular progress notes in *e-dnevnik*.

For Students with Hearing Disabilities

- **Direct Communication:** Position the teacher to directly face the student during all verbal explanations and demonstrations.
- **Visual Delivery:** Consistently pair all lab steps, circuit diagrams, and theoretical content with clear visual slides and written handouts.
- **Acoustics & Monitoring:** Maintain a controlled, low-noise environment during lab work; inspect student notebooks directly to visually verify understanding.
- **Peer Learning:** Utilize strong peer-partner arrangements during lab setups.

MYP 4&5 Course overview 2026/2027

PHYSICS

Unit title	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
<p>THE SCIENCE OF PHYSICS</p> <p>Sep – Nov</p> <p>Special: CERN - community</p>	Communication	Form Evidence	Personal and cultural expression	Because of the necessary communication between individuals and institutions, scientific expression should have specific forms which show clear evidence of the method applied and the way of drawing conclusions.	<p>A ii</p> <p>B i, ii, iii, iv</p> <p>C i, ii, iii, iv, v</p> <p>D i, ii, iii, iv</p>	<p><u>Communication</u> Understand and use mathematical notation Structure information in reports Take effective notes in class Give and receive meaningful feedback</p> <p><u>Self-management</u> Keep an organized notebook Meet deadlines Consider ethical, cultural and environmental implications</p> <p><u>Thinking</u> Interpret data Draw reasonable conclusions and generalizations</p> <p><u>Research</u> Collect, record and verify data Process data and report results</p>	<p><u>Disciplinary knowledge</u> Physical quantities and measuring units and their symbols Measuring Power of ten shorthand and scientific notation Significant figures Applying statistics to data processing Scientific method</p> <p><u>Disciplinary skills</u> Converting units Applying scientific method Data processing Writing scientific report</p> <p><u>Attitudes</u> Performance in experiment</p>
<p>FORCES</p> <p>Nov - Feb</p> <p>Special: Black holes</p>	Relationships	Interaction Patterns	Scientific and technical innovation	Scientific and technical innovation is based on understanding patterns describing interactions and relationships.	<p>A i, ii, iii</p> <p>B i, ii, iii, iv</p> <p>C i, ii, iii, iv, v</p> <p>D iii</p>	<p><u>Communication</u> Understand and use mathematical notation Organize and depict information logically</p> <p><u>Thinking</u> Interpret data Draw reasonable conclusions and generalizations Apply skills and knowledge in unfamiliar situations</p> <p><u>Research</u> Collect, record and verify data Process data and report results</p> <p><u>Social</u></p>	<p><u>Disciplinary knowledge</u> Concept of force 1st and 3rd Newton's law Examples of forces and their properties (gravity, weight, friction, elastic force) Adding and resolving forces</p> <p><u>Disciplinary skills</u> Drawing and interpreting graphs and diagrams Applying knowledge on numerical and practical problems</p> <p><u>Attitudes</u> Performance in experiment Connecting knowledge with everyday life</p>

						<i>Listen actively to other perspectives and ideas</i>	
MOTION Feb - Apr Special: Motion in time	Time, place and space	Movement Patterns	Orientation in space and time	Orientation in space and time implies understanding of movement, hence understanding of patterns in which position and rate of change of position change in time.	A i, ii, iii D i, ii, iv	<u>Communication</u> <i>Understand and use mathematical notation</i> <i>Use and interpret a range of discipline-specific terms and symbols</i> <u>Self-management</u> <i>Consider ethical, cultural and environmental implications</i> <u>Thinking</u> <i>Apply skills and knowledge in unfamiliar situations</i> <i>Interpret data</i> <i>Draw reasonable conclusions and generalizations</i> <i>Analyse complex concepts and projects into their constituent parts and synthesise them to create new understanding</i>	<u>Disciplinary knowledge</u> <i>Newton's laws</i> <i>Speed, velocity and acceleration</i> <i>Motion graphs</i> <i>Equations of motion</i> <i>2D motion</i> <u>Disciplinary skills</u> <i>Drawing and transforming motion graphs from one to another</i> <i>Applying different communication modes (text, graphs, formulae)</i> <i>Applying knowledge on numerical and practical problems</i> <u>Attitudes</u> <i>Connecting knowledge with everyday life</i> <i>Appreciating academic honesty</i>
WORK, ENERGY AND POWER May – Jun Sep - Oct Special: Mass and energy Dark energy	Change	Energy Form	Globalization and sustainability	The total amount of energy in a closed system is conserved, though limited - it can only be a subject of change of form, so we have to seriously consider sustainability at the global level.	A i, ii, iii, iv D i, ii, iii, iv	<u>Communication</u> <i>Understand and use mathematical language</i> <i>Structure information in essays</i> <i>Make inferences and draw conclusions</i> <u>Thinking</u> <i>Propose and evaluate a variety of solution</i> <i>Apply skills and knowledge in unfamiliar situations</i> <u>Research</u> <i>Seek a range of perspectives from multiple and varied sources</i> <i>Create references and citations, use footnotes/endnotes and construct a bibliography</i>	<u>Disciplinary knowledge</u> <i>Energy in different systems</i> <i>Conservation laws</i> <i>Power and efficiency</i> <u>Disciplinary skills</u> <i>Applying knowledge on numerical and practical problems</i> <u>Attitudes</u> <i>Connecting knowledge with everyday life</i> <i>Responsibility and integrity</i>

						<p>according to recognized conventions</p> <p><u>Social</u></p> <p>Consider ethical, cultural and environmental implications</p>	
<p>PRESSURE IN FLUIDS</p> <p>Nov – Jan</p> <p>Special: Antimatter</p>	Connections	Function Environment	Identities and relationships	Function of our organism and our general well-being is strongly connected to our environment and our relationship with it.	<p>A i, ii, iii</p> <p>B i, ii, iii, iv</p> <p>C i, ii, iii, iv, v</p> <p>D iii</p>	<p><u>Communication</u></p> <p>Understand and use mathematical notation</p> <p>Structure information in reports</p> <p><u>Thinking</u></p> <p>Analyse complex concepts and projects into their constituent parts and synthesise them to create new understanding</p> <p>Apply skills and knowledge in unfamiliar situations</p> <p><u>Research</u></p> <p>Collect, record and verify data</p> <p>Process data and report results</p>	<p><u>Disciplinary knowledge and understanding</u></p> <p>Pressure</p> <p>Atmospheric, hydrostatic and hydraulic pressure</p> <p>Buoyancy, floating and sinking</p> <p>Simple hydrodynamics (Equation of continuity, Bernoulli's Equation)</p> <p><u>Disciplinary skills</u></p> <p>Applying knowledge on numerical and practical problems</p> <p>Applying scientific method</p> <p><u>Attitudes</u></p> <p>Performance in experiment</p> <p>Connecting knowledge to everyday life</p>
<p>HEAT AND THERMAL EFFECTS</p> <p>Jan – Mar</p> <p>Special: Least energy, least action and least order – it is not our fault</p>	Relationships	Consequences Development	Scientific and technical innovation	Understanding of relationships among relevant variables may have huge consequences on modernization, industrialization and development of the whole world.	<p>A i, ii, iii</p> <p>B i, ii, iii, iv</p> <p>C i, ii, iii, iv, v</p> <p>D i, ii, iii, iv</p>	<p><u>Communication</u></p> <p>Organize and depict information logically</p> <p><u>Thinking</u></p> <p>Draw reasonable conclusions and generalizations</p> <p>Apply skills and knowledge in unfamiliar situations</p> <p><u>Research</u></p> <p>Collect and analyse data to identify solutions</p> <p>Process data and report results</p>	<p><u>Disciplinary knowledge and understanding</u></p> <p>Internal energy, temperature and heat</p> <p>Heat transfer</p> <p>The gas laws</p> <p>Laws of thermodynamics</p> <p>Cyclic processes and heat engine</p> <p><u>Disciplinary skills</u></p> <p>Transforming graphs</p> <p>Applying different communication modes (text, sketches, graphs, formulae)</p>

						<p><u>Social</u> Consider ethical, cultural and environmental implications</p>	<p>Applying knowledge on numerical and practical problems</p> <p><u>Attitudes</u> Connecting knowledge to everyday life Responsibility and integrity</p>
<p>WAVES</p> <p>Mar – May</p> <p>Special: Waves and quantum mechanics</p>	Perspective	Patterns Evidence	Scientific and technical innovations	<p>The innovative scientific idea that the same patterns of behaviour can be evident for apparently different phenomena has opened the new perspectives in science and allowed the same phenomenon to be looked at from different perspectives.</p>	<p>A i, ii, iii</p> <p>D i, ii, iii, iv</p>	<p><u>Communication</u> Understand and use mathematical language and various communication modes Find information for disciplinary and interdisciplinary inquiries, using a variety of media Structure information in essays</p> <p><u>Thinking</u> Practise observing carefully Draw reasonable conclusions and generalizations Make connections between subject groups and disciplines</p> <p><u>Research</u> Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media Create references and citations, use footnotes/endnotes and construct a bibliography according to recognised conventions</p>	<p><u>Disciplinary knowledge and understanding</u> Origin and propagation of waves Describing waves: wavelength and frequency Reflection and refraction Diffraction and interference Light as a wave The Magic of Sound: Properties of sound (light) waves Speed of sound (light) Level of intensity of sound (light) Acoustics (geometrical optics) Standing waves and resonance (wave optics) Musical instruments (optical instruments)</p> <p><u>Disciplinary skills</u> Visualisation of physical phenomena using mathematical techniques Applying knowledge on numerical and practical problems</p> <p><u>Attitudes</u> Connecting knowledge to everyday life Realizing the identity between mathematical and physical models</p>

<p>ELECTRICITY AND ELECTRO-MAGNETISM (optional)</p> <p>May – Jun</p> <p>Special: Positive and negative, left and right</p>	Development	Consequences Environment	Globalization and sustainability	Technical development has deeply changed our lives, having good and bad consequences on ourselves and our sustainable natural and social environment.	<p>D i, ii, iii, iv</p> <p><u>Communication</u> <i>Make inferences and draw conclusions</i> <i>Negotiate ideas and knowledge with peers and teachers</i></p> <p><u>Thinking</u> <i>Practise observing carefully</i> <i>Draw reasonable conclusions and generalizations</i> <i>Inquire in different contexts to gain a different perspective</i></p> <p><u>Research</u> <i>Locate, organize, analyse, evaluate, synthesize and ethically use information from a variety of sources and media</i> <i>Seek a range of perspectives from multiple and varied sources</i></p>	<p><u>Disciplinary knowledge and understanding</u> <i>Electric charge, potential and field</i> <i>Voltage, current and electric circuits</i> <i>Electric energy and power</i> <i>Magnets and magnetic fields</i> <i>Magnetic effect of a current and electromagnetic induction</i> <i>Electric motors and generators</i></p> <p><u>Disciplinary skills</u> <i>Applying knowledge on practical problems</i></p> <p><u>Attitudes</u> <i>Connecting knowledge with everyday life</i> <i>Responsibility and integrity</i></p>
---	-------------	--------------------------	----------------------------------	---	--	---