Calgary Board of Education

Nelson Mandela High School
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Grade 10 Science

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Course Description:

Over the course of the 2023-2024 school year, Nelson Mandela High School teachers will maintain an online course presence containing materials, resources, assignments and supports through our D2L environment. It is important for students to take an active role in their learning and stay current in their schoolwork if away for any reason.

Grade 10 Science is a **detracked** course where students can achieve credit in one of Science 10, Science 14 or Science 10-4 courses based upon their demonstration of the curricular outcomes. For more detailed information about specific curricular outcomes, please refer to the appropriate Program of Studies. Students will be encouraged to enthusiastically develop attitudes that support active inquiry, problem solving and decision making within a scientific framework. NMHS uses the CBE proficiency scale (shown below) for all science courses.

Assessment Scheme

Students will be assessed using the High School Proficiency Scale. More information about the scale can be found on the following link: High School Proficiency Scale

Beginning		Developing		Proficient		Exemplary	
1	2	1	2	1	2	1	2
The student demonstrates a level of understanding and/or skill that is **not yet meeting** expectations of the course outcomes. ▪ The quality of work may be **vague** and/or **undeveloped**. ▪ Targeted adjustments to planning and instruction will be necessary for further learning in this area.		The student demonstrates a **basic level** of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **adequate** and/or **concrete**. ▪ Adjustments to planning and instruction may be necessary for further learning in this area.		The student demonstrates a **well-developed** level of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **clear** and/or **well-reasoned**. ▪ The student can be confident of being prepared for further learning in this area.		The student demonstrates a **mastery** level of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **perceptive** and/or **insightful**. ▪ The student can be confident of being prepared for further learning in this area.	
20%	40%	55%	65%	75%	85%	95%	100%

Science 10 Outcomes

	Outcome		Description
Chemistry	A1	Structure of Matter	Describe the basic particles that make up the underlying structure of matter, and investigate related technologies
	A2	Compounds	Explain, using the periodic table, how elements combine to form compounds, and follow IUPAC guidelines for naming ionic compounds and simple molecular compounds
	A3	Chemical Reactions	Identify and classify chemical changes, and write word and balanced equations for significant chemical reactions, as applications of Lavoisier's law of conservation of mass
Physics	B1	Thermodynamics	Analyze and illustrate how technologies based on thermodynamic principles were developed before the laws of thermodynamics were formulated
	B2	Mechanical Systems	Explain and apply concepts used in theoretical and practical measures of energy in mechanical systems
	B3	Efficiency	Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems
Biology	C1	History of the Cell	Explain the relationship between developments in imagining technology and the current understanding of the cell
	C2	Cellular Function	Describe the function of cell organelles and structures in a cell, in terms of life processes, and use models to explain these processes and their applications
	C3	Plants	Analyze plants as an example of a multicellular organism with specialized structures at the cellular, tissue and systems levels
Climate	D1	Biosphere and Energy	Describe how the relationships among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species.
	D2	Energy Transfers	Analyze the relationships among net solar energy, global energy transfer processes – primarily radiation, convection and hydrologic cycle – and climate
	D3	Biomes	Relate climate to the characteristics of the world's major biomes, and compare biomes in different regions of the world
	D4	Climate Change	Investigate and interpret the role of environmental factors on global energy transfer and climate change
Skills	SK1/SK4	Initialize and Plan	Ask questions about observed relationships, and plan investigations of questions, ideas, problems and issues Work as members of a team in addressing problems, and apply the skills and conventions of science in communicating information and ideas and in assessing results
	SK2/SK4	Perform and Record	Conduct investigations into relationships between and among observable variables, and use a broad range of tools and techniques to gather and record data and information Work as members of a team in addressing problems, and apply the skills and conventions of science in communicating information and ideas and in assessing results
	SK3/SK4	Analyze and Interpret	Analyze data and apply mathematical and conceptual models to develop and assess possible solutions Work as members of a team in addressing problems, and apply the skills and conventions of science in communicating information and ideas and in assessing results

For a more detailed list of curricular outcomes, please see the:

Science 10 Program of Studies:
http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=302812#

Science 14 Program of Studies:
http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=134127#

Science 10-4 Program of Studies:
http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=604687#

Also please see:

- NMHS Code of Conduct
- Digital Citizenship
- Academic Integrity
- Assessment Rules