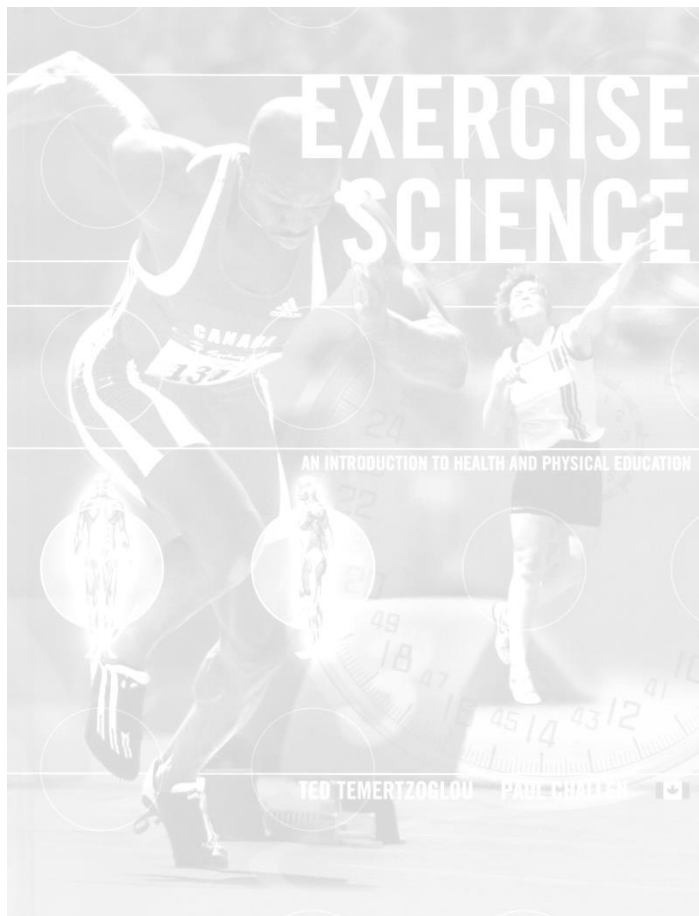

Regina Public Schools
Exercise Science 30L
Spring 2016



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Course Description

Exercise Science 30L focuses on the study of human movement and of systems, factors, and principles involved in human development, and interdisciplinary connections between the study of science and physical education. Exercise Science 30L is intended to support science, and physical education programs, link what is happening in the classroom across multiple curricula, and build upon and deepen kinesiology and exercise science understandings with a lens on physical education. This ensures that students are focused on what they are to know and what they are capable of doing. Clustering the overall and specific learning expectations into key learnings provides students with a framework and context for their learning.

The Exercise Science course is divided into five major units, as follows:

- Unit One: Introduction to Anatomy and Physiology
- Unit Two: Human Performance and Biomechanics
- Unit Three: Motor Learning and Skills Development
- Unit Four: The Evolution of Physical Activity and Sport
- Unit Five: Social Issues in Physical Activity and Sport

Note: It is recommended that Unit 4 and 5 are used to provide context for Unit 1, 2, and 3 rather than be taught in isolation. As Unit 4 and 5 are key to project completion and portfolio development it is essential that they be referenced throughout Units 1, 2 and 3.

Rationale

Exercise Science 30L is designed to pique intellectual curiosity, student engagement, and to apply analytical and creative thought to concepts related to human movement and wellbeing. In addition, this course aims to foster enthusiasm for an active lifestyle and well-being to emphasize the importance of effective lifestyle practices. Students will learn about and have opportunity to explore physical movement, the effects of physical activity on well-being and performance, the evolution of physical activity and sports, the factors that influence an individual's participation in physical activity, and current sports issues and related topics. The course prepares and provides smooth transition into the world of work and leisure. Students considering post-secondary programs or having an interest in physical education, kinesiology, recreation, sports administration, nutritionist, and related professions would benefit from this course. This course will also promote life-long personal, family, and community leadership and well-being.

Student Target Group

Exercise Science 30L target grade 11 and 12 students considering post-secondary programs or having an interest in physical education, kinesiology, recreation, sports administration, nutritionist, and related professions/occupations. This course would also meet the learning interests of students who plan to or are providing service to their community via coaching or

other volunteer activities. The course will provide the opportunity for students to learn in large and small groups as well as individually. Learning will involve the development of both teacher and student directed projects related to well-being and nutrition through inquiry. Each project will build upon previous projects and will culminate with the development of an individual portfolio of learning. Due to the group nature of the course an ability to work with others would be helpful but it is hoped that the projects themselves will help students to develop these skills.

Broad Areas of Learning

There are three Broad Areas of Learning that reflect Saskatchewan's Goals of Education. Exercise Science 30L contributes to the Goals of Education through helping students achieve knowledge, skills, and attitudes related to the following (Renewed Curricula: Understanding Outcomes, 2010):

- **Lifelong Learners:** Students who are engaged in constructing and applying their knowledge naturally build a positive disposition towards learning. Throughout their studies, students gain understandings, skills, and strategies to become more competent and confident learners.
- **Sense of Self, Community, and Place:** To learn, students need to interact with each other. Throughout their studies, students learn about themselves, others, and the world. The students use this knowledge to define who they are and to explore who they might become, to respond effectively with others, and to build community.
- **Engaged Citizens:** Throughout their studies, students are enabled to make a difference in their personal, peer, family, and community lives having developed a sense of agency and an ability to make a difference in their community and the world in which they live.

Cross Curricular Competencies

The Cross-curricular Competencies are four interrelated areas containing understandings, values, skills, and processes which are considered important for learning in all areas of study. These competencies are reflective of the Common Essential Learnings and are intended to be addressed in Exercise Science 30L and include the following (Renewed Curricula: Understanding Outcomes, 2010):

- **Developing Thinking:** Learners construct knowledge to make sense of the world around them. They develop understanding by building on what is already known. This key competency concerns the ability to make sense of information, experiences, and ideas through thinking contextually, critically, and creatively. The philosophy of learning across curricula is inquiry-based, and students are expected to use their thinking skills to explore a range of topics, issues, and themes.
- **Developing Identity and Interdependence:** The ability to act autonomously in an interdependent world requires an awareness of the natural environment, of social and cultural expectations, and of the possibilities for individual and group accomplishments.

It assumes the possession of a positive self-concept and the ability to live in harmony with others and with the natural and constructed worlds. Achieving this competency requires understanding, valuing, and caring for oneself; understanding, valuing, and respecting human diversity and human rights and responsibilities; and understanding and valuing social and environmental interdependence and sustainability. In turn, students to explore ideas and issues of identity, social responsibility, diversity, sustainability, and personal agency.

- **Developing Literacies:** Literacies provide many ways, including the use of various language systems and media, to interpret the world and express understanding of it. Literacies involve the evolution of interrelated skills, strategies, and understandings that facilitate an individual's ability to participate fully and equitably in a variety of roles and contexts – school, home, and local and global communities. To achieve this competency requires developing skills, strategies, and understandings related to various literacies in order to explore and interpret the world and communicate meaning. All curricula require students to use different literacies effectively and contextually to represent ideas and understanding in multiple, flexible ways.
- **Developing Social Responsibility:** Social responsibility is how people positively contribute to their physical, social, and cultural environments. It requires the ability to participate with others in accomplishing shared or common goals. This competency is achieved through using moral reasoning processes, engaging in communitarian thinking and dialogue, and taking action to contribute to learners' physical, social, and cultural environments. In all curricula, students explore their social responsibility and work toward common goals to improve the lives of others and the natural and constructed worlds.

Aims and Goals

The aims of Exercise Science 30L are as follows:

- Instill lifelong participation and achievement of physical potential.
- Develop positive attitudes toward a lifetime commitment to physical activity in a safe and healthy way.

The goals of Exercise Science 30L are as follows:

- Develop attitudes that support Scientific and Active Living Habits of Mind
- Develop and understanding the Nature of Science and the relationship between Human Physiology and Movement
- Constructing Scientific Knowledge related to the Human Body.

Infusion of First Nations, Metis, and Inuit Ways of Knowing

First Nations, Metis, and Inuit content, perspectives, and ways of knowing are to be integrated into all curricula and embedded within the outcomes and indicators for each curriculum

respectively. All students benefit from knowledge about the First Nations, Métis, and Inuit peoples and it is through such knowledge that misconceptions and bias can be eliminated. To that end, when completing various assignments, projects, portfolio components, etc., students are encouraged to address First Nations, Métis, and Inuit content and perspectives into their work. For further information, see *Diverse Voices: Selecting Equitable Resources for Indian and Métis Education* (Saskatchewan Education, 1992)

Content in Exercise Science 30L and resources and material will endeavor to present positive images of Aboriginal people and will complement the beliefs and values of First Nations, Métis and Inuit peoples. Students will recognize the connection between physical, mental and spiritual health and the importance of well-being, specifically, within the first nation's community (i.e. ways to combat the high incidents of diabetes within First Nations community). And, In providing information about First Nations games and sporting activities, a connection to aboriginal ways of knowing and perspectives will be highlighted. The integral role of activities within a holistic framework for life and spirituality will be examined.

Big Ideas and Questions for Deeper Understanding

It is important that teachers and students learn within meaningful contexts that relate to their lives, communities, and world. Teachers and students need to identify big ideas and questions for deeper understanding central to the area of study.

Big ideas are at the core of the subject; they need to be uncovered. The big ideas at the core of a subject are arrived at, sometimes surprisingly slowly, via teacher-led inquiries and reflective work by students. Big ideas encompass concepts, broad or overarching themes, skills, attitudes, and habits of mind which help students make sense of and apply what they learn. A big idea can be thought of as providing a focusing conceptual 'lens' for study; breadth of meaning by connecting and organizing many facts, skills, and experiences; serving as the linchpin of understanding; ideas at the heart of expert understanding; great transfer value and applying to many other inquiries and issues across subject areas and over time and both in the curriculum and out of school (*Renewed Curricula: Understanding Outcomes*, 2010).

Questions for deeper understanding are used to initiate and guide the inquiry and give students direction for developing deep understandings about a topic or issue under study. It is essential to develop questions that are evoked by student interests, have potential for rich and deep learning, are compelling and able to assist students to grasp important disciplinary or transdisciplinary ideas that are situated at the core of a particular curricular focus. These broad questions will lead to more specific questions that can provide a framework, purpose, and direction for the learning activities in a lesson, or series of lessons, and help students connect what they are learning to their experiences and life beyond school (*Renewed Curricula: Understanding Outcomes*, 2010).

*Refer to Course Overview for big ideas and questions for deeper understanding specific to Exercise Science 30L.

Outcomes and Indicators

The learning expected of students in Saskatchewan is defined by curriculum outcomes for each grade. As Saskatchewan students achieve the grade-specific outcomes identified in curricula, they will deepen their understanding of each area of study as a living field of knowledge. Outcomes define what a student is expected to know and be able to do at the end of the grade or secondary level course. Outcomes require that students develop a combination of factual, conceptual, procedural, and metacognitive knowledge and are developed based on current research to ensure coherence and rigor. Therefore, all curriculum outcomes are required. Indicators clarify the breadth and depth of each outcome and are examples of ways that students might be asked to demonstrate achievement of an outcome. They serve as examples of the type of evidence that teachers would accept to determine the extent to which students have achieved the desired learning results. When teachers are planning for instruction, they must be aware of the set of indicators to understand fully the breadth and depth of the outcome. Based on this understanding of the outcome, teachers may develop their own indicators that are responsive to their students' interests, lives, and prior learning. These teacher-developed indicators must maintain the intent of the outcome.

*Refer to Course Overviews for outcomes and indicators specific to Exercise Science 30L.

Incorporation and Explanation of Various Core Curriculum Components and Initiatives

Common Essential Learnings

The Common Essential Learnings can be integrated into all aspects of planning and instruction. It is through using these learnings that students can translate thoughts into actions. Refer to *Understanding the Common Essential Learnings: A Handbook for teachers* (Saskatchewan Education, 1988). Some suggestions within this curriculum are:

Communication

Students will enhance their speaking skills by giving presentations on various topics within the Exercise Science course, by speaking openly and clearly with fellow students during collaborative tasks and through a variety of other group-based labs. In addition students will read various literatures, study a collection of work in a personal portfolio and complete written exercises all of which will enhance expand their vocabulary. The exploration of the effects of the mass media in Unit 5 will build media literacy in students.

Numeracy

The basic principles of sport's relationship to the world of business are clearly outlined in the unit: *Social Issues in Activity and Sport*. It identifies a number of economical issues pertaining to amateur and professional sport including (i.e. the fundamentals of the sports-as-entertainment industry, including broadcasting rights, player endorsements, the role of sports marketing and promotion, and the overall contribution of local sport to local economies). In

addition physiological information included in unit two Human Performance and Biomechanics also contains essential learnings in numeracy. The calculation of BMI and caloric values provides a link between numeracy skills and everyday life uses of arithmetic and mathematics.

Critical and Creative Thinking

An ongoing goal of the course is for students to become autonomous independent thinkers. Through each unit students will develop a foundation of knowledge providing them the opportunity to analyze a variety of course material. By utilizing the principles involved in biomechanics and motor learning, students will be able to analyze and improve movement. Also, through an investigation of the evolution of sport students can analyze the relationship of society and culture to sports and physical activity. Critical examination of media's on sports and other aspects of ethical, cultural and social awareness assist students to build critical thinking skills. Their ability to reflect and express insight toward their understanding utilizes critical and creative thinking skills.

Technological Literacy

Many of the lessons in Exercise Science will help students develop an understanding of technological uses within physiological principles relating to human performance. This will be evident in labs which focus on training principles and the physiological impact on our body. Students will also learn and apply technological skills through presentations and varied teacher-led presentations. Use of on-line resources also builds skills at retrieving electronic information and evaluating its currency, veracity and significance.

Personal and Social Values and Skills

In addition to the development of academic knowledge surrounding Exercise Science, the course will also promote social responsibility through presentations, activities and lessons. Student interaction will be a focus of the class. Interaction within the professional community will also develop student awareness in this area.

Independent Learning

Many of the learning expectations in this course focus on students' ability to communicate their understanding of concepts/principles and their use of higher-thinking skills. Indirect and interactive instruction strategies have been used widely throughout the Course Profile to provide students with multiple opportunities to learn and practice before they are required to demonstrate the learning. Learning contracts and independent projects will also enhance these student expectations.

Adaptive Dimension

It is a teachers' responsibility to make adjustments in approved educational programs to accommodate diversity in student learning needs. Meeting the needs of all students includes those practices the teacher undertakes to ensure curriculum, instruction and the learning environment are meaningful and appropriate for each student. (The Adaptive Dimension in Core Curriculum, Saskatchewan Education, Training and Employment, 1992.)The teacher should consult individual student PPP (Personal Program Plans) for specific direction on accommodation for individuals.

The resources included in Exercise Science will allow teachers the opportunity to do the following accommodations, when appropriate, to address the needs of students.

- Provide a visual outline of lessons on the board, overhead, or handout.
- Provide key visuals or graphic organizers for assignments as an alternative.
- Partner students to work with appropriate people or resources.
- Provide key vocabulary or reference notes.
- Assist students to recall prior knowledge before introducing new information.
- Use appropriate visual materials rather than print material to convey information.

When addressing the adaptive dimension to meet student learning and behavioural needs, teachers are encouraged to refer to Regina Public Schools Intervention First documentation and processes with a focus on the provision and documentation of Tier 1 Universal /School-wide/Classroom-wide Support

Multicultural Education

Multicultural education, as integrated into Exercise Science is an interdisciplinary educational process which fosters a broad and comprehensive understanding and acceptance of one's own and others' culture and ethnicity in addition to fostering empathy, and constructive and harmonious relations among peoples of diverse cultures. It encourages learners of all ages to view different cultures as a source of learning and enrichment and stresses the acquisition of skills in analysis, communication and inter-group relations, which enables one to function effectively in varying cultural environments. Multiculturalism recognizes the diversity of the cultural differences which exist in society. It endorses a society in which individuals of all cultures are accepted and accorded respect. It encourages a positive acceptance of races, religions and cultures, and recognizes such diversity as healthy. For further information, see Multicultural Education (Saskatchewan Education, 1994).

Treaty Education

The Saskatchewan Ministry of Education is committed to providing the appropriate supports and programs that reflect and affirm the unique status of First Nations and Métis people – Treaty Education. Four Treaty Education goals have been identified as the basis for building understanding and nurturing appreciation. These goals are based upon the Treaty Essential Learnings and are intended to be addressed through various subject areas, including Exercise Science 30L as able and appropriate, and include:

- Treaty Relationships: By the end of grade 12, students will understand that Treaty relationships are based on a deep understanding of peoples' identity which encompasses: languages, ceremonies, worldviews, and relationship to place and the land.
- Spirit and Intent of Treaties; By the end of grade 12, students will recognize that there is interconnectedness between thoughts and actions which is based on the implied and

explicit intention of those actions. The spirit and intent of Treaties serve as guiding principles for all that we do, say, think, and feel.

- **Historical Context of Treaties:** By the end of grade 12, students will acknowledge that the social, cultural, economic, and political conditions of the past played and continue to play a significant role in both the Treaty reality of the present and the reality they have yet to shape.
- **Treat Promises and Provisions:** By the end of grade 12, students will appreciate that Treaties are sacred covenants between sovereign nations and are the foundational basis for meaningful relationships that perpetually foster the well-being of all people

While each of four Treaty Education goals are presented separately, these goals can only be understood when considered as parts of a whole. The outcomes and indicators at each grade level are designed to engage learners on a journey of inquiry and discovery. When meaningfully and thoughtfully incorporated into subject areas, Treaty Education moves beyond an idea to become actualized as a belief that benefits all learners. Treaty Education outcomes are best met in Exercise Science 30L when addressing the influence of and interaction between society and culture and the world of sport and physical activity. For further information, see Treaty Education Outcomes and Indicators (Saskatchewan Ministry of Education, 2013).

Saskatchewan and Canadian Content and Perspectives

Exercise Science 30L encourages students to explore identity in this province and in Canada. It is important that students become familiar with their own heritage and surroundings. If they study Saskatchewan and Canadian culture students will recognize themselves, their environment, their concerns and their feelings expressed in many different ways. They will learn that both similarities and differences between various identities in Saskatchewan and Canada are cause for celebration.

Gender Equity

All course material for Exercise Science 30L has been created with the concept of gender equity as a guiding principle. In all units efforts have been made to balance content and acknowledge the role of both genders as both participants as well as leaders. As well occupations related to the field of Exercise Science reach out to both men and woman. (see Incorporating Career Development Competencies)

Resource-Based Learning

Exercise Science 30L utilizes many resources in order to accomplish student learning. Specifically the course operates with a textbook/ workbook combination. The publisher has also created a valuable online resource students can access 24 hours a day (www.thompsonbooks.com/teacher support.com). The website offers students the flexibility to take responsibility for their own learning. On the site students can receive recent information pertaining to the course as well as various tools to help them demonstrate an

understanding of the course material. This includes: unit summaries, chapter quizzes, test builders, reading lists, sample exams, quizzes, bell ringers and answers to summative bell ringers. The ability to incorporate resource based learning by using up to date articles and techniques is very important. There are volumes of research being done in this area, such as youth obesity, cardiovascular disease, type II diabetes, asthma, hypertension and several other chronic conditions.

“The way to reduce the incidence of these conditions in our youth is for physicians, families, and communities to work together. We have a responsibility to ensure they are equipped with the knowledge, opportunities, and facilities they need to stay healthy and active throughout their lives”

-Dr. LeBlanc (Chair of the CPS Advisory Committee on Healthy Active Living for Children and Youth)

*Refer to Instructional Materials for full list of resources for Exercise Science 30L.

Career Development and Exploration

The material presented in Exercise Science 30L is relevant to current trends in physical activity, health, and sport. As well, the key resource contains profiles and photographs of both well-known and not-so-well-known athletes, coaches, and events. Although the emphasis is on Canadian figures, exercise science is an international field, and one filled with inspiring people and events from around the globe. The course prepares and provides smooth transition into the world of work and leisure. And, although extensive focus is given to possible careers in Physical Education, Kinesiology, Recreation, Sports Administration and related professions/occupations, this course aims to foster enthusiasm for an active and healthy lifestyle and to emphasize the importance of effective lifestyle practices and promotes life-long personal, family, and community leadership, well being, and health.

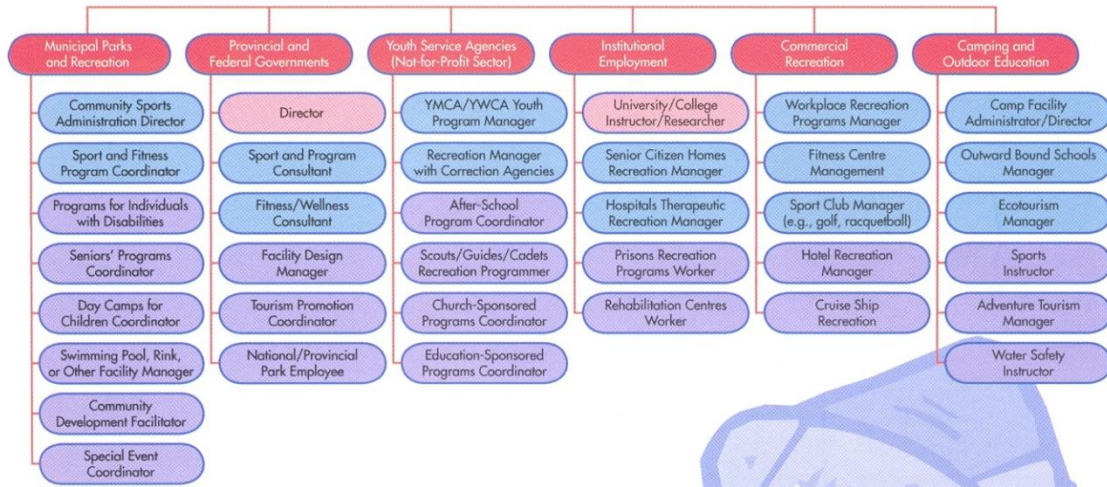
The web site Blueprint for Life/Work Designs can help youth and adults design, build and manage their careers. Regina Public Schools wants students to understand how interest in this area can lead to career opportunities.

<http://206.191.51.163/blueprint/home.cfm>

The web site, Career Cruising, is an online career guidance and planning system. This web site can be used to find a variety of careers, explore education and training options, and help students build their own portfolio to guide them in possible career choices.

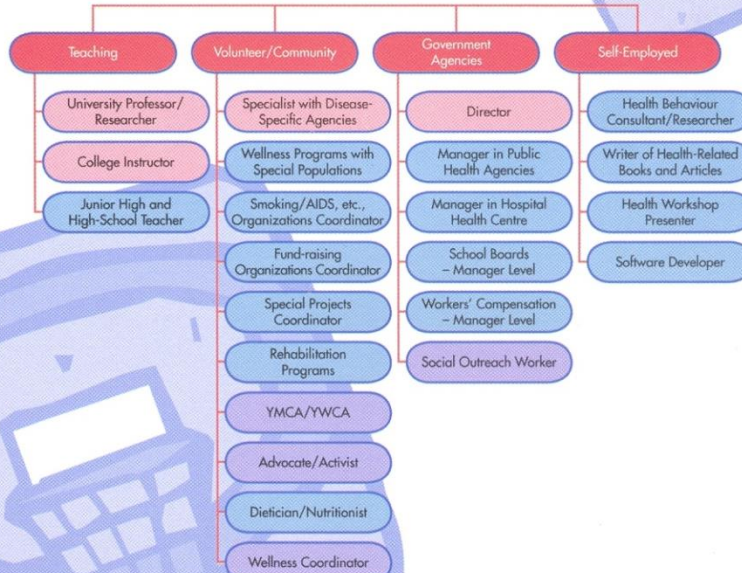
<http://www.careercruising.com>

OCCUPATIONS IN
RECREATION AND LEISURE



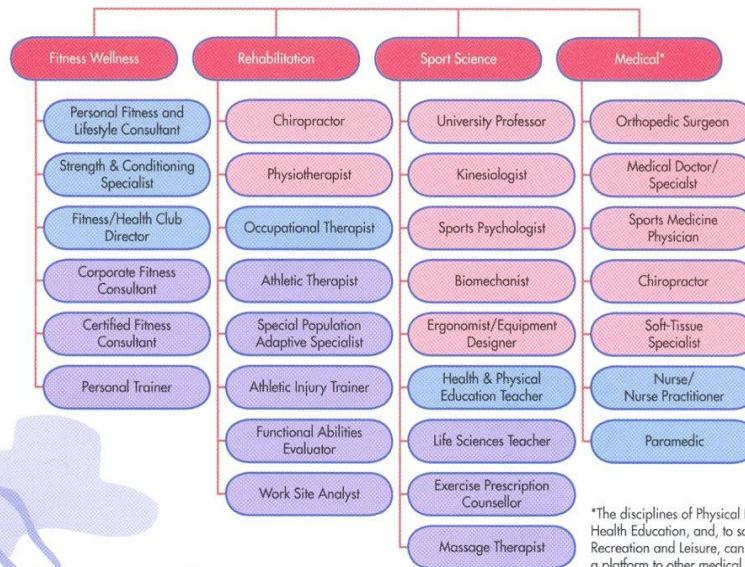
OCCUPATIONS IN
HEALTH EDUCATION

(NON-MEDICAL)



OCCUPATIONS IN

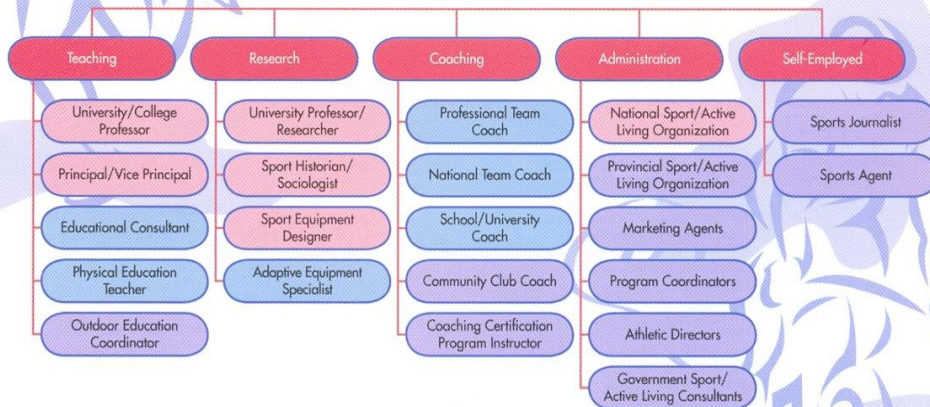
KINESIOLOGY



*The disciplines of Physical Education, Health Education, and, to some degree, Recreation and Leisure, can also serve as a platform to other medical training.

OCCUPATIONS IN

PHYSICAL EDUCATION



MINIMUM EDUCATIONAL REQUIREMENTS



Examples of Instructional Approaches

Students learn best when they are active, exploring, questioning/searching for meaning, investigating/ experimenting, looking for connections/relationships/patterns, sharing/discussing with others and reflecting. Considering how students learn, the optimal conditions for learning and the learning skills needed to develop an effective program that focuses on improved student learning. In addition, by beginning with a topic of deep interest to students, they are more willing to engage in activities which reinforce and build their skills.

1. Improved student learning is enhanced when we understand how students learn. Take into consideration developmental stages, learning preferences, learning styles, and learning environment.
2. Create conditions for optimal learning by considering the full range of teaching and learning strategies. Teaching and learning strategies are instructional practices that:
 - involve a sequence of steps or a number of related concepts;
 - determine the approach a teacher may take to achieve learning objectives and meet diverse learner needs;
 - should be selected based on an understanding of how students learn.

Direct Instruction

Lecture: an oral presentation of facts or principles during which the learner is responsible for taking appropriate notes

Demonstrations/modelling: performing a skill or activity in order to show how to do it

Didactic Questions: guiding students to predetermined learning through the use of lower order questions

Drill and Practice: repetition of fundamental skills to enhance speed and accuracy of performance

Guides for Reading, Listening, and Viewing: Structured formats intended to direct students to appropriate learning expectations in reading, listening, or viewing

Indirect Instruction

Problem Solving: an organized process for solving a problem

Research: gathering and interpreting data on a specific topic

Case Studies: investigation of a specific event, situation, or person to develop an understanding of factors that can be generalized to other situations

Concept Formation: an inductive thinking strategy in which students sort, classify, and/or group items, ideas, opinions, into categories to draw inferences, make generalizations, and develop concepts

- Concept Attainment: Clarifying a concept by providing positive and negative examples of that concept
- Reflection: process of thinking about and connecting ideas, experiences, and learning
- Debate: the presentation of opposing sides of an issue by two teams/individuals before an audience or judge

Interactive Instruction

- Cooperative Learning: a variety of interdependent learning structures where students learn in small heterogeneous groups
- Jigsaw: Students are divided into “home” groups. Each student in the group moves into a different expert group to gather information (provided by the teacher or through research) and then goes back to the home group to share that information
- Think/Pair/Share: Students begin thinking about a concept on their own, then work with a partner to share and discuss ideas
- Snowballing: pairs of students begin sharing ideas. After a few minutes, the pairs join with another pair to form a group of four to share ideas. The groups continue to combine to form groups of eight, then 16. New ideas are added and discussed
- Numbered Heads: Numbered heads is a structure whereby students number off, e.g., four in a group, and the teacher poses a problem and sets a time limit for each group to investigate. The teacher calls a number and the student with that number in each group responds.
- Learning Circles: small groups of students who discuss a common text, topic, or problem in order to deepen understanding
- Brainstorming: a group activity in which participants are encouraged to think uncritically about all possible ideas, approaches, or solutions
- Role Playing: assuming the role of another and acting out a situation to develop understanding and insights
- Peer Coaching: a structured situation where students teach and learn from each other
- Experiential Learning: A situation requiring a high level of active involvement in his/her own learning that is inductive, learner centred and activity oriented. These activities may include field trips, simulations, model building, analysing, drawing inferences or conclusions, providing reasons and evidence for conclusions, or reflecting on experiences in analysing, inferring, decision-making, and conclusions.

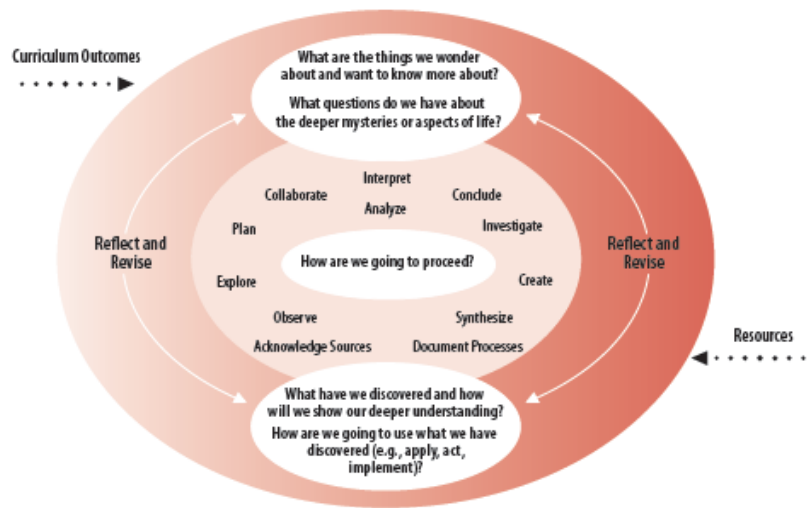
Independent Instruction

- Independent Project: A formal assignment on a topic related to the curriculum
- Learning Centres: A specially organized space containing specific resources and/or equipment
- Learning Contracts: A plan of instruction allowing students to proceed at their own rate in learning specified material.

Inquiry Instruction

- Mini Inquiry: Spontaneous inquiry for which students are provided the opportunity to ask questions, search for and find information relatively quickly, and satisfy curiosity
- Curricular Inquiry: Inquiry for which content and concepts are determined by provincial or locally developed outcomes.
- Open Inquiry: Inquiry for which students are provided the opportunity to select a topic of inquiry with teacher guidance
- Project/Problem/Design-Based Learning (PBL/PBL/DBL):
Inquiry that results in the completion of an product, event, or presentation to an audience (project-based learning); define a problem and identify solutions (problem-based learning); or design and create an artifact that requires application and understanding (design-based learning)
- Inquiry Continuum: ← Teacher Directed --- Collaborative --- Student Directed →
← Large Group --- Small Group --- Individual →
← Intra-disciplinary --- Inter-disciplinary →
← Mini --- Curricular --- Open (PBL/PBL/DBL) →

Constructing Understanding Through Inquiry



3. Help students develop effective learning skills.

Consider:

- The skills and knowledge required to participate in learning, e.g., working independently, self-assessment, setting goals and monitoring progress, adapting to change, inquiry skills;
- The self-knowledge, personal and interpersonal skills to interact positively with others, e.g., self-management, getting along with others, social responsibility;
- The skills and knowledge required to plan their present and future lives and to determine the learning required to implement the plan, e.g., self-assessment, exploring and obtaining information, awareness of opportunities.

Note: It is recommended that Unit 4 and 5 are used to provide context for Unit 1, 2, and 3 rather than be taught in isolation. As Unit 4 and 5 are key to project completion and portfolio development it is essential that they be referenced throughout Units 1, 2 and 3. Therefore, it is further recommended that project-based learning and student learning portfolios be considered when planning for the instruction of Exercise 30L learning outcomes.

Note: It is also recommended that when selecting instructional strategies that a four-staged approach has been incorporated in an effort to help students develop a solid knowledge base and understanding of the theories/concepts/principles, expand their perceptions and perspectives, and connect their learning to things that are relevant, authentic and of interest to them.

- Stage One: The Experience
Focuses on the question, “Why?” The teacher creates an experience that will encourage students to want to learn more. The experience relies on learners’ existing knowledge.
- Stage Two: The Theory

Focuses on the question, "What?" The teacher provides information to link the experience with students' existing knowledge base.

- Stage Three: The Practice

Focuses on the question, "How?" Students practise the application of the theory in a personal situation or activity. Students practise and apply the defined givens.

- Stage Four: The Extension Application

Focuses on the question, "If?" Students apply the theory to a new context. He/she extends the learning by divulging deeper and wider to consider new possibilities.

Many of the outcomes in this course focus on students' ability to communicate their understanding of concepts/principles and their use of higher-thinking skills. Indirect and interactive instruction strategies have been used widely throughout the curriculum to provide students with multiple opportunities to learn and practice before they are required to demonstrate the learning.

Examples of Assessment and Evaluation Techniques

Assessment and evaluation are ongoing and serve different purposes at different times.

	Diagnostic Assessment	Formative		Summative Evaluation
		Assessment	Evaluation	
What?	- assessing what students know and are able to demonstrate prior to instruction	- assessing what students know and are able to do as they progress through the learning and practice opportunities	- evaluating what students know and are able to do at certain points during the process of learning and practising	- evaluating students' demonstration of what they know and are able to do at the end of the instruction
When?	- occurs before instruction begins	- is ongoing as students learn and practise	- occurs at one or more checkpoints throughout the process of learning and practising	- occurs at the end of the instructional unit, e.g., unit, course, and will not be judged again in the course
Why?	- helps determine starting points and helps the teacher program appropriately for individual students	- provides ongoing meaningful feedback to help students improve as the learning/ practice builds, becomes more complex and connects with other learning	- provides a snapshot of students' achievement, e.g., mark, level at specific points in the course before the final demonstration (summative evaluation)	- provides students with the opportunity to synthesize knowledge and skills and demonstrate their achievement

	Diagnostic	Formative		Summative Evaluation
How?	- assessment strategies to provide a holistic picture of the learning students have acquired in the past	- assessment strategies to provide opportunities for students to learn and practise	- strategies that are relevant to: a) the expected learning; b) the point students have progressed to in the learning process; c) The summative evaluation (demonstration) planned for the end of the instructional unit.	- strategies that: a) require students to synthesize and apply the key learnings; b) require students to demonstrate learning in new or unfamiliar context (but not new learning); c) present students with engaging, challenging problems; d) allow for individual student accountability.
Note	- information from diagnostic assessments must not count towards the final grade	- formative assessment may be taken into consideration in determining students' final grades	- formative evaluation may count towards students' final grades	- summative evaluation will always count towards students' final grades

Under each of these categories, there are various types of assessment strategies. Some examples have been listed above beside each assessment method.

One of the critical professional judgments teachers must make is to appropriately match the assessment strategy (ies) to the type(s) of learning being assessed. There are a wide variety of assessment strategies available to teachers. Assessment strategies are what the teacher will have the students doing to demonstrate their learning.

It is recommended that student learning portfolios be emphasized and incorporated into the assessment and evaluation of Exercise Science 30L with the understanding that a student learning portfolio is a collection of student work which serves to demonstrate the depth and breadth of student understanding regarding the learning outcomes. The student learning portfolio may also be used as the foundation of evidence for a student-led conference or written reflection/response to demonstrate the learning outcomes.

Note: It is recommended that Unit 4 and 5 are used to provide context for Unit 1, 2, and 3 rather than be taught in isolation. As Unit 4 and 5 are key to project completion and portfolio

development it is essential that they be referenced throughout Units 1, 2 and 3. Therefore, it is further recommended that project-based learning and student learning portfolios be considered when planning for the assessment and evaluation of Exercise 30L learning outcomes.

Specific Examples of Instructional Approaches and Corresponding Formative and Summative Assessment and Evaluation Techniques

EXAMPLE ONE: PORTFOLIO ASSIGNMENT

Outcomes

Inclusive of all outcomes, ongoing assignment throughout the course

OPTION A: EXERCISE SCIENCE PERSONAL PORTFOLIO ASSIGNMENT

As stated in the Portfolio Assignment, your portfolio is a collection of your work that reflects a higher level of thinking and understanding of many of the key learnings of the course. It is an opportunity for you to explore and learn more about areas of passion and interest in this course. The collection of work will focus on the following areas of study in Exercise Science:

For this project you must **create a 12 page magazine** containing information pertaining to your chosen areas of study from Exercise Science. The front cover, table of contents and back cover may be included as part of the 12 pages.

Your magazine must include:

- Cover Page
- Table of Contents
- At least 8 pages of the magazine must be articles personally researched and written on your own.
- Back Cover
- The rest of the space should contain other info that demonstrates your knowledge and understanding of the course. This can include smoothie recipe's, advertisements, etc.

SPECIFIC EXPECTATIONS

1. You must write a one page article which demonstrates your understanding from each unit we studied in Exercise Science. They include:

Unit 1: Introduction to Anatomy and Physiology

Unit 2: Human Performance and Biomechanics

Unit 3: Motor learning and Skills Development

Unit 4: The Evolution of Physical Activity and Sport

Unit 5: Social Issues in Physical Activity and Sport

2. Research a career you are considering which requires skills you have learned in this class. Use this information to create a one page article for your magazine.

3. Motor Learning and Skills Development

Case study of your experience in working with youth and athletic movements. Refer to the research you acquire from your workbook and the time you spend with a young student.

4. Research and create an article discussing an injury and injury common to people in our society.

ALL ARTICLES MUST FOLLOW THE FOLLOWING GUIDELINE:

- all magazines must be typed.
- font must be no larger than size 12.
- margins must be 1.5 left, 1 right, 1 bottom, 1 top
- font must be Arial, Helevicta, or Times New Roman
- your page layout must reflect a professional image and can contain small photos or diagrams complete with a caption.
- articles must be between 500 – 800 words.
- spacing must be set to 1.5

ASSESSMENT AND EVALUATION

Each article must demonstrate your level of understanding pertaining to the topic being discussed. Your approach to the article may be in the format of any type of essay (persuasive, editorial, etc). Below is the rubric used for evaluation.

Essay Rubric

CATEGORY	4	3	2	1	Score
Introduction and Thesis	First paragraph is catchy. Thesis is evident and point to be argued well stated.	First paragraph has a weak "grabber." Thesis is mixed among many sentences and hard to piece together.	A catchy beginning was attempted but was confusing rather than catchy. Thesis is not entirely apparent although topic is evident.	No attempt was made to catch the reader's attention in the first paragraph. Thesis is not apparent nor is the topic of the essay.	A1 ___ A5 ___ A2 ___ A6 ___ A3 ___ A7 ___ A4 ___ A8 ___
Accuracy of Facts	All facts presented in the essay are accurate and relate back to the thesis.	Almost all facts presented in the essay are accurate and occasionally relate back to the thesis.	Most facts presented in the story are accurate (at least 70%). Evidence is sputtered about rather than used to prove your thesis.	There are several factual errors in the essay. There is no real effort to make the piece cohesive.	A1 ___ A5 ___ A2 ___ A6 ___ A3 ___ A7 ___ A4 ___ A8 ___
Organization	The essay is very well organized. Three paragraphs evident. One idea or scene follows another in a logical sequence with clear transitions.	The essay is pretty well organized. Three paragraphs evident. One idea may seem out of place. Clear transitions are used.	The essay is a little hard to follow. Paragraphs are unclear. The transitions are sometimes not clear.	Ideas seem to be randomly arranged. No effort at paragraph organization.	A1 ___ A5 ___ A2 ___ A6 ___ A3 ___ A7 ___ A4 ___ A8 ___
Focus on Assigned Topic	The entire essay is related to the assigned topic and allows the reader to understand much more about the topic.	Most of the essay is related to the assigned topic. The essay wanders off at one point, but the reader can still learn something about the topic.	Some of the essay is related to the assigned topic, but a reader does not learn much about the topic.	No attempt has been made to relate the essay to the assigned topic.	A1 ___ A5 ___ A2 ___ A6 ___ A3 ___ A7 ___ A4 ___ A8 ___
Mechanics	The essay has few, if any, spelling, punctuation, capitalization, grammar, or usage errors.	The essay has two or three mechanics errors.	The essay has four or five mechanics errors.	The essay has more than five mechanics errors.	A1 ___ A5 ___ A2 ___ A6 ___ A3 ___ A7 ___ A4 ___ A8 ___

Student _____

Final Mark _____ / 200

Cover Page - attractive, organized, reflects higher level thinking, promotes health, attracts target audience _____ / 10

Article 1 _____ / 20

Article 2 _____ / 20

Article 3 _____ / 20

Article 4 _____ / 20

Article 5 _____ / 20

Article 6 _____ / 20

Article 7 _____ / 20

Article 8 _____ / 20

Advertisements, etc - attractive, organized, promotes health, attracts target consumer, accurate information _____ / 10

Back Cover - attractive, organized, reflects higher level thinking, promotes health, attracts target audience _____ / 10

Magazine meets all outlined guidelines _____ / 10

OPTION B: EXERCISE SCIENCE PERSONAL PORTFOLIO ASSIGNMENT

Depending on the choice made from the student, it may include outcomes from all 5 units of study

OVERVIEW

Your portfolio is a collection of your work that reflects a higher level of thinking and understanding of many of the key learnings of the course.

It is an opportunity for you to explore and learn more about areas of passion and interest in this course. The collection of work should focus on two to three main areas of study in Exercise Science:

- Human Performance (e.g., nutrition, physiological principles, training principles, bio mechanics)
- Motor Development (e.g., growth and development and motor learning)
- Physical Activity and Sport in Society and Culture

INSTRUCTION AND ASSESSMENT

The collection of work can consist of any two or three of the following pieces, and each piece should be connected to one of the main focus areas:

- adapting equipment for the needs of special populations
- bulletin board
- case study analysis
- coaching
- computer animation designs
- ergonomic project
- research paper
- web page design
- other

At the end of the course, the portfolio will be used as the foundation of evidence for a student-led conference or written reflection/response to demonstrate learning and growth.

You are to submit the portfolio proposal detailing your choices of work and your respective focus areas. A sample proposal worksheet is provided below.

Student Proposal Worksheet

Student Name: _____

Main Focus Areas	Collection of Work
Human Performance (e.g., nutrition, physiological principles, training principles, bio mechanics)	
Motor Development (e.g., growth and development and motor learning)	
Physical Activity and Sport in Society and Culture	

Indicate which format you would prefer to demonstrate evidence of learning:

Student-led conference ____ or Written reflection/response ____

Portfolio Rubric & Scoring Tool

Points Earned Toward for the Project:

- A = 10 points Superior level of competence demonstrated in main focus areas.
- B = 8.5 points Commendable level of competence demonstrated in main focus areas.
- C = 7.5 points Satisfactory level of competence demonstrated in main focus areas.
- F = ____ points (0-6.9) Minimal level of competence demonstrated in main focus areas or portfolio not submitted.

Additional Material (5=Superior 1 = Minimal)

Quality of Content	5 4 3 2 1
Neatness	5 4 3 2 1
Completeness of Information	5 4 3 2 1
Organization	5 4 3 2 1
Evidence of Appropriate Effort	5 4 3 2 1
Demonstrated Use of Technology	5 4 3 2 1
Visual Appeal	5 4 3 2 1

EXAMPLE TWO: SMOOTHIE ASSIGNMENT

Outcomes

2.1 Understand nutritional guidelines and principles of training as required for a healthy lifestyle

5.4 Investigate the evolving role that various media play in sport at all levels and its impact on society

HUMAN PERFORMANCE AND BIOMECHANICS MAKING A NUTRITIONAL SMOOTHIE

Smoothies can be a nutritious and convenient meal replacement or a refreshing snack. With just a few ingredients, you'll be on your way to creating a light and healthy drink.

EXPECTATIONS:

This project is in three parts and is explained in detail below. By completing this task you will demonstrate an understanding of the nutritional values in food, how to create an effective Power Point, develop your presentation skills and of course create a tasty and nutritious smoothie.

INSTRUCTIONS:

With a partner or as an individual, you will complete a three-part assignment on "Making a Nutritional Smoothie." You will rely on the knowledge and understanding gained from section ten of the Human Performance and Biomechanics unit.

PART A: Power Point Presentation:

Your PPT must have 8 slides and reflect a professional image.

PPT Slide # 1	Name of Smoothie	/2
PPT Slide # 2	Marketing Strategy <ul style="list-style-type: none">◦ Identify your target age, gender, needs, etc.◦ Promote your rationale why you targeted these groups.	/5
PPT Slide # 3	Marketing Strategy <ul style="list-style-type: none">◦ What type of Smoothie are you creating? (ie breakfast, meal replacement, healthy snack, etc.)◦ Rationale why you chose this type,	/5
PPT Slide # 4	Create an Advertisement <ul style="list-style-type: none">◦ This should appear as an advertisement you would see in a	/10

grocery store or magazine. Make it “wow” the class!

PPT Slide # 5	Complete “Recipe List” ◦ With proper ingredients and amounts required.	/5
PPT Slide # 6	Create an official “Food Label” outlining the Nutrition facts ◦ This should appear as an official food label.	/5
PPT Slide # 7	“Step by Step” Guide ◦ How to make your smoothie.	/5
PPT Slide # 8	“Top 5 Tips” ◦ The tips you learned for making the perfect smoothie.	/5

PART B: Complete Workbook Task

Exercise 10.5	Complete Exercise 10.5 in your workbook and hand it in immediately after your presentation.	/10
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PART C: THE SMOOTHIE

Note: On the day of your presentation, bring a “jug” of your smoothie to share with the class

a.	Appearance ◦ vibrant colour, tasty look, etc.	/5
b.	Texture ◦ smooth, not too thick, able to sip through a straw, etc.	/5
c.	Taste ◦ sweet (but not too sweet), healthy, not bland	/5
d.	Nutritional Value ◦ in accordance with your Nutrition Label	/5

ASSESSMENT AND EVALUATION:

Part A: Power Point Presentation:	/42
Part B: Complete Workbook Task:	/15

Part C: Smoothie: /20

Total: /77

Nutritional Label Maker:

<http://www.shopncook.com/nutritionFactsLabel.html>

EXAMPLE THREE: JOINT MODEL CONSTRUCTION ASSIGNMENT

Outcomes

- 1.1 Demonstrate an understanding of the anatomical planes and the axes of rotation, terms of position and joint movement.
- 1.3 Develop an awareness of the ten biological systems.
- 1.4 Understanding the muscular system including types, function and composition and the interrelatedness with other body systems to produce movement.
- 2.2 Analyze scientific models of biomechanics related to human performance.

INTRODUCTION TO ANATOMY AND PHYSIOLOGY CREATION OF A SYNOVIAL JOINT

EXPECTATIONS:

This is an opportunity to apply what you have learned about synovial joints, basic anatomy and physiology. You will need to:

- o Describe the structure and function of the body and of physiological principles relating to human performance;
- o Demonstrate an understanding of biomechanical principles related to improving movement;

SPECIFIC EXPECTATIONS:

- o Use correct anatomical terminology when describing human performance;
- o Describe the various parts of the skeletal and muscular systems, and the ways in which they relate to human performance (e.g., according to their location, structure, function, and characteristics); at least five muscles
- o Describe the biomechanical principles (e.g., stability, the relationship between force and movement, angular motion) and joint mechanics (e.g., types of joints, range of motion);

INSTRUCTIONS:

With partners or as an individual, you will complete a two-part assignment on the joint of your choice. You will rely on the knowledge and understanding gained from the Anatomy and Physiology unit; especially the following: *bones, ligaments, muscle names, joint types, and proper use of anatomical terminology* when describing body movements.

PART A: THE MODEL

Using various materials, you will construct a **3D model of a synovial joint of your choice**

(For example: *Ball and Socket Joint, Hinge Joint*).

Possible materials to be used include: for the muscles use nylon stockings (*filled with another material*) and elastics; for the bones use wood, plastic, etc.; for ligaments use strong elastics, deflated balloons, etc.

A good model will move as the joint would in the body.

Hint:

∅ Think of the movement your synovial joint requires when constructing the joint.

∅ Include ligaments, tendons and muscles to illustrate the intricacy of your synovial joint.

Assessment and Evaluation:

PART A: THE POWERPOINT PRESENTATION

Your PPT must: Have 8 slides that reflect a professional image.

Refer to your Synovial Joint Model throughout your presentation.

- | | |
|---------------|--|
| PPT Slide # 1 | Introduction of Project <ul style="list-style-type: none">• Name of your joint• Name of Presenter(s) |
| PPT Slide # 2 | Definition of the type of joint you studied. |
| PPT Slide # 3 | Include a photo/ illustration of the joint you studied.
Please label important landmarks on the photo.
Include important ligaments and tendons critical to the movement of the joint. <ul style="list-style-type: none">• Use your synovial joint to point these landmarks out during your presentation. |
| PPT Slide # 4 | List and explain the muscles that surround this joint. <ul style="list-style-type: none">• In addition to the PPT, you should also point these muscles out on your synovial joint during the presentation. |
| PPT Slide # 5 | List and explain the major tendons and ligaments that surround this joint. <ul style="list-style-type: none">• In addition to the PPT, you should also point these ligaments and tendons out on your synovial joint during the presentation. |
| PPT Slide # 6 | Explain how this joint functions and how it works. <ul style="list-style-type: none">• Please choose 3 sport/ life specific movements that best demonstrate how your joint functions. |
| PPT Slide # 7 | List and explain a common injury that can occur at this joint (include photos). <ul style="list-style-type: none">• Including video or photos may help demonstrate this. |
| PPT Slide # 8 | Include any “creative” information you wish. |

Rubric for Synovial Joint PPT

Criteria	1	2	3	4	5
Slide 1: Introduction	<ul style="list-style-type: none"> Student appears disorganized and lacks focus. 	<ul style="list-style-type: none"> Student is somewhat unorganized. 	<ul style="list-style-type: none"> Student appears nervous, but able to present a positive demeanor. 	<ul style="list-style-type: none"> Students material allows them to proceed in a professional manner. 	<ul style="list-style-type: none"> Student appears energetic and genuinely interested in presenting their project.
Slide 2: Definition of the Joint	<ul style="list-style-type: none"> Information is disorganized Gaps in content or repeated content Audience confused 	<ul style="list-style-type: none"> 2 or 3 problems with organization of information Audience must reread at times for clarity 	<ul style="list-style-type: none"> Information is generally organized with only 1 or 2 problems Audience finds content generally clear 	<ul style="list-style-type: none"> Information is organized Content flows nicely Audience finds content clear and easy to follow 	<ul style="list-style-type: none"> Information is very organized Audience finds content easy to follow, clear and logical
Slide 3: Photo, landmarks labeled, ligaments and tendons	<ul style="list-style-type: none"> Diagrams and illustrations, where present, are neither neat nor accurate They 	<ul style="list-style-type: none"> Diagrams and illustrations, where present, are neither neat nor entirely accurate They don't add much to the 	<ul style="list-style-type: none"> Diagrams and illustrations are mostly accurate and somewhat related to 	<ul style="list-style-type: none"> Diagrams and illustrations are accurate and clearly relate to the 	<ul style="list-style-type: none"> Diagrams and illustrations are neat, accurate and clearly relate to the

included.	<p>don't appear to relate to the questions posed</p> <ul style="list-style-type: none"> · They confuse the content 	content	<p>the questions posed in the introduction</p> <ul style="list-style-type: none"> · They reinforce the content 	<p>questions posed</p> <ul style="list-style-type: none"> · They add interest to the content 	<p>questions posed</p> <ul style="list-style-type: none"> · They provide additional insight to the content
<p>Slide 4 and 5</p> <p>List and explain muscles, tendons and ligaments that surround the joint.</p>	<ul style="list-style-type: none"> · Important points not identified 	<ul style="list-style-type: none"> · Both important and insignificant information are included · Some gaps in logic relating conclusions to the questions posed 	<ul style="list-style-type: none"> · Mentions some important information · Conclusions are generally reasonable and somewhat related to the questions posed 	<ul style="list-style-type: none"> · Highlights the most important information · Conclusions are reasonable and relate to the questions posed 	<ul style="list-style-type: none"> · Reinforces important information clearly · Conclusions are logical and reasonable and clearly relate to the questions posed
<p>Slide 6:</p> <p>Explain how the joint functions and how it works.</p>	<ul style="list-style-type: none"> · Information has little to do with the questions posed in the introduction · no supporting 	<ul style="list-style-type: none"> · Information is not entirely related to questions posed in introduction · Supporting detail(s) and/or example(s) not 	<ul style="list-style-type: none"> · Information relates generally to the questions posed in the introduction 	<ul style="list-style-type: none"> · Information clearly relates to questions posed in the introduction · 1 or 2 	<ul style="list-style-type: none"> · Information clearly and specifically relates to questions posed in the introduction

	<ul style="list-style-type: none"> · details and/or examples provided · Audience confused and annoyed 	<ul style="list-style-type: none"> · directly related · Audience finds little of interest 	<ul style="list-style-type: none"> · 1 supporting detail and/or example is provided · Audience generally enjoys piece 	<ul style="list-style-type: none"> · supporting details and/or examples are used · Audience finds some things of interest 	<ul style="list-style-type: none"> · 3 or 4 unique, creative supporting details and/or examples are used · Audience is very interested
Slide 7: Explain a common injury	<ul style="list-style-type: none"> · Information has little to do with the questions posed in the introduction · no supporting details and/or examples provided · Audience confused and annoyed 	<ul style="list-style-type: none"> · Information is not entirely related to questions posed in introduction · Supporting detail(s) and/or example(s) not directly related · Audience finds little of interest 	<ul style="list-style-type: none"> · Information relates generally to the questions posed in the introduction · 1 supporting detail and/or example is provided · Audience generally enjoys piece 	<ul style="list-style-type: none"> · Information clearly relates to questions posed in the introduction · 1 or 2 supporting details and/or examples are used · Audience finds some things of interest 	<ul style="list-style-type: none"> · Information clearly and specifically relates to questions posed in the introduction · 3 or 4 unique, creative supporting details and/or examples are used · Audience is very interested
Slide 8:	<ul style="list-style-type: none"> · No documentati 	<ul style="list-style-type: none"> · Sources used are not 	<ul style="list-style-type: none"> · All sources are 	<ul style="list-style-type: none"> · All sources are 	<ul style="list-style-type: none"> · All sources are

Additional Information	on of sources used, if any	<p>accurately documented</p> <ul style="list-style-type: none"> · Only 1 source was used 	<p>accurately documented</p> <ul style="list-style-type: none"> · Format used is not consistent · Only 1 was used 	<p>accurately documented</p> <ul style="list-style-type: none"> · Uses desired format · 2 or 3 sources were used 	<p>accurately documented</p> <ul style="list-style-type: none"> · Uses desired format · 4 or more sources were used
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Rubric for Synovial Joint Construction

	1	4	7	10
Bone Construction	Chosen materials are inappropriate to project, making presentation less clear or more difficult to interpret. Little apparent effort has been expended in producing project.	Chosen materials appear thrown together and quickly done, making project appear careless and unclear.	Chosen materials soundly represent the idea or image, if in a common way. Effort has been expended to produce an acceptable product.	Chosen materials contribute to an effective presentation of idea or image. Effort and attention to detail enhance project.
Muscle Construction	Chosen materials are inappropriate to project, making presentation less clear or more difficult to interpret. Little apparent effort has been expended in producing project.	Chosen materials appear thrown together and quickly done, making project appear careless and unclear.	Chosen materials soundly represent the idea or image, if in a common way. Effort has been expended to produce an acceptable product.	Chosen materials contribute to an effective presentation of idea or image. Effort and attention to detail enhance project.
Ligament/ Tendon Construction	Disordered picture plane or use of negative/positive space. Space appears cluttered or not resolved: elements obscure content/concept.	Immature or sketchy appearance. Negative/positive space not clearly related. Irrelevant elements contribute to haphazard	Adequate content informs image/project. Elements support concept/content.	Project is crisp and stimulating. Effective use of elements clearly support and enhance concept/content.

		appearance.		
Accurate Movement of Joint	Apparently purposeless: no intent can be seen beyond the need to have something.	Intent can be seen to be emerging, but apparent randomness makes this unclear.	Follows a common pattern, and delivers an adequate product whose intent is seen.	Clear, thoughtful exploration with clear intent/purpose.
Creativity/ Stability/ Durability	Viewer is confused or apathetic.	Viewer understands pretty much what the attempt is, but is disappointed in its execution.	Viewer accepts project and understands intent.	Viewer is engaged in project. Project is transformed by presentation.
Overall Project	Students has not met the expectations as outlined.	Students is close to meeting the expectations outlined.	Students has met the expectations outlined.	Student has met the expectations and exceeded them.

ADDITIONAL SUPPORT DOCUMENTS

#1 Summary of joints;

Joint Name	Joint Type	Between...
Head		
Atlanto-axial joint	Synovial, pivot.	<ul style="list-style-type: none"> ● Atlas (C1). ● Axis (C2).
Temporomandibular	Synovial, hinge.	<ul style="list-style-type: none"> ● Temporal bone. ● Mandible (condyle).
All sutures	Fibrous, suture.	<ul style="list-style-type: none"> ● Bones of the cranium.
Trunk		
Costochondral	Cartilaginous, synchondroses.	<ul style="list-style-type: none"> ● Ribs ● Costal cartilages.
Sternocostal	Cartilaginous, synchondroses.	<ul style="list-style-type: none"> ● Sternum. ● Costal cartilages
Costovertebral	Synovial, gliding.	<ul style="list-style-type: none"> ● Vertebrae (costal facets). ● Ribs (articular tubercles).
Intervertebral (1)	Cartilaginous, symphysis.	<ul style="list-style-type: none"> ● Adjacent vertebral bodies.
Intervertebral (2)	Synovial, gliding.	<ul style="list-style-type: none"> ● Adjacent vertebral facets.
Sacroiliac	Synovial, plane.	<ul style="list-style-type: none"> ● Sacrum. ● Coxal (ilium of hip) bone.
Symphysis pubis	Cartilaginous, symphysis.	<ul style="list-style-type: none"> ● Coxal (pubis of hip) bone.
Upper limb		
Sternoclavicular	Synovial, saddle.	<ul style="list-style-type: none"> ● Sternum (manubrium). ● Clavicle (sternal end). ● 1st costal cartilage.

Acromioclavicular	Synovial, gliding.	<ul style="list-style-type: none"> ● Scapula (acromion). ● Clavicle (acromial end).
Shoulder (glenohumeral)	Synovial, ball and socket.	<ul style="list-style-type: none"> ● Scapula (glenoid cavity). ● Humerus (head).
Elbow (1) (humeroulnar)	Synovial, hinge.	<ul style="list-style-type: none"> ● Humerus (trochlea). ● Ulna (trochlea notch).
Elbow (2) (proximal humeroradial)	Synovial, hinge.	<ul style="list-style-type: none"> ● Humerus (capitulum). ● Radius (head).
Elbow (3) (radioulnar)	Synovial, pivot.	<ul style="list-style-type: none"> ● Radius (proximal end). ● Ulna (proximal end).
Radioulnar	Synovial, pivot.	<ul style="list-style-type: none"> ● Radius (distal end). ● Ulna (distal end).
Wrist (radiocarpal)	Synovial, condyloid.	<ul style="list-style-type: none"> ● Radius (proximal end). ● Scaphoid. ● Lunate. ● Triquetral.
Intercarpal	Synovial, gliding.	<ul style="list-style-type: none"> ● Adjacent carpals.
Carpometacarpal	Synovial, gliding.	<ul style="list-style-type: none"> ● Carpals (hamate, capitate trapezoid). ● Metacarpals 2-5.
Trapeziometacarpal (base of thumb)	Synovial, saddle.	<ul style="list-style-type: none"> ● Trapezium. ● 1st metacarpal.
Intermetacarpal	Synovial, gliding.	<ul style="list-style-type: none"> ● Adjacent metacarpals.
Metacarpophalangeal	Synovial, condyloid.	<ul style="list-style-type: none"> ● Metacarpals 1-5. ● Proximal phalanges.
Interphalangeal	Synovial, hinge.	<ul style="list-style-type: none"> ● Distal phalanges. ● Middle phalanges. ● Proximal phalanges.
Lower Limb		
Coxal (Hip)	Synovial, ball and	<ul style="list-style-type: none"> ● Coxal bone (acetabulum of

	socket.	hip). ● Femur (head).
Knee (1)	Synovial, hinge.	● Femur (condyles). ● Tibial (condyles).
Knee (2)	Synovial, gliding.	● Femur (condyles). ● Patella (posterior surface).
Proximal tibiofibular	Synovial, gliding	● Tibia (proximal end). ● Fibula (proximal end).
Distal tibiofibular	Fibrous, syndesmosis.	● Tibia (distal end). ● Fibula (distal end).
Ankle (talocrural)	Synovial, hinge.	● Tibia (distal end). ● Fibula (distal end). ● Talus (trochlea surface).
Subtalar (talocalcaneal)	Synovial, gliding.	● Talus. ● Calcaneus.
Talocalcaneonavicular	Synovial, gliding.	● Talus. ● Calcaneus. ● Navicular.
Calcaneocuboid	Synovial, gliding.	● Calcaneus (anterior). ● Cuboid (posterior).
Intertarsal	Synovial, gliding.	● Adjacent tarsal bones.
Metatarsophalangeal	Synovial, condyloid.	● Metatarsals 1-5. ● Tarsals (cuneiforms, cuboid).
Interphalangeal	Synovial, hinge.	● Distal phalanges. ● Middle phalanges. ● Proximal phalanges.

#2 Exercise Science 30 Synovial Joint Proposal

Name (Note: Groups will be determined by common interest):

Synovial joint you would like to work on (Indicate 1st, 2nd, and 3rd choice):

Synovial Joint Options

Ball and Socket: Hip Shoulder

Hinge: Elbow Knee Knuckles

Saddle: Thumb

Gliding: Foot (Bones in the foot allowing flexibility)

Pivot: Atlas/ Axis (Skull to Vertebrae)

Ellipsoid: Wrist Ankle

#3 Synovial Joint Project

You may choose one of the following joints to complete for your "Synovial Joint Project." As a group in tomorrow's class, you will announce your group's selection.

Groups must be no larger than three.

Ball and Socket

- Hip
- Shoulder

Hinge

- Elbow (between ulna and humerus)
- Knee
- Fingers (phalanges)

Saddle

- Thumb

Gliding

- Foot (tarsals)
- Hand (carpals)

Pivot

- Neck

Ellipsoid

- Wrist

Course Overviews

Big Ideas and Questions for Deep Understanding

Exercise Science 30L	
Big Ideas	Essential Questions
<ul style="list-style-type: none"> • Structure and function of the body and the physiological principles relating to human performance (Unit 1, 2) • Biomechanical principles to analyze and improve movement (Unit 1, 2) • Nutrition and training principles and their affect human performance (Unit 2); • Individual differences in performance, growth, and development (Unit 3); • Principles of motor learning and using them to analyze or teach a skill (Unit 4) • Influence of and interaction between society and culture and the world of sport and physical activity(Unit 5) 	<ul style="list-style-type: none"> • How does body position, axis and plane, affect performance? How can performance be improved? • How do human anatomical systems and their development impact movement? How can movement efficiency be improved? How might biomechanical principals be applied to positively impact the safety of movement and reduce injury? • How does nutrition influence human performance? What factors impact and need to be considered in regards to nutrition and training? How do performance enhancing drugs and nutritional supplements impact, both positively and negatively, the human body? • How do environmental, psychological, societal, etc. factors affect one’s performance, growth, and development? • How has knowledge regarding movement and performance changed over time? How have stereotypes in sport changes over time? How have these changes impacted how movement and performance are analyzed, taught, and viewed? • What is the relationship between society, culture, and performance? What ethical issues arise as a result of these relationships and what is their impact on performance?

Unit 1: Anatomy and Physiology

Time: 35-40 hours

Unit Description: Students explore the anatomy and physiology of the human body using correct anatomical terminology and physiological principles to describe human performance. They demonstrate an understanding of the skeletal and muscular systems and joint mechanics related to movement. Students analyse the relationship between the cardiorespiratory and energy systems as they relate to physical activity.

Outcome:

1.1 Demonstrate an understanding of the anatomical planes and the axes of rotation, terms of position and joint movement.

Indicators:

- a. Build familiarity with the anatomical position, axes, planes and terms of movement.
- b. Identify and describe basic joint movements.
- c. Analyze effectiveness of the joint movements during any movement related activity (i.e. raising your arm to drink a cup of coffee/water)
- d. Applying anatomical and physiological language to illustrate movement patterns and identify skeletal and muscular structure

Outcome

1.2 Develop an awareness of the ten biological systems.

Indicators:

- a. Create a brief presentation outlining the key understanding of a single biological system as assigned to ensure all ten biological systems are reviewed

Outcome

1.3 Investigate the skeletal system including types, function, anatomy, formation and remodeling of bones.

Indicators:

- a. Identifying key bones of the human skeleton
- b. Investigate and explore the role of the human skeleton as it relates to structure and movement
- c. Establish awareness of key bone landmarks.
- d. Explore the relationship between landmarks and bones including origin and insertion of muscles
- e. Manipulate bones to understand the function using practice skeletons

- f. Understanding the remodeling process of bones in various situations determined by age, sex, disease and injuries.
- g. Understanding the growth and formation of bone composition

Outcome

1.4 Understanding the muscular system including types, function and composition and the interrelatedness with other body systems to produce movement.

Indicators:

- a. Identifying and exploring the different types of muscles and their unique role in the muscular system (i.e. cardiac muscle, skeletal and smooth muscle).
- b. Understanding of muscle composition and muscle fibers and the sliding filament theory of muscle contraction.
- c. Understanding the neuromuscular system and the relationship between the muscles in the nervous system.
- d. Investigating and apply the concept of muscle twitch in relation to body movement and activity.
- e. Apply motor movement principles acquired while using small and large motor unit
- f. Anatomical names for individual and groups of muscles
- g. Investigating and describe origin and insertion points and ways in which muscles attach to bones.
- h. Explore concepts of agonist and antagonist muscles
- i. Practice and apply muscle contractions and the three basic kinds and how muscles respond to physical training and exercise due to these contractions.
- j. Apply knowledge of prevention and care of muscular and skeletal injuries.

Outcome

1.5 Analyse the relationship between the cardio respiratory and energy systems as they relate to physical activity.

Indicators:

- a. Define the three energy nutrients (i.e. protein, fat and carbohydrates) and explore their roles in the human energy systems.
- b. Analyze the impact of proper training for energy systems related to human performance and activity
- c. Analyzing the role of ATP in human energy and comparing the difference between aerobic and anaerobic energy systems
- d. Investigating the scientific processes of the body's three metabolic pathways.
- e. Discuss the basic structure and function of the cardiovascular system (i.e. blood flow through heart, electrical excitations , role of arteries, veins and capillaries , cardiovascular response to exercise)
- f. Analyze and explore the effects of training on the cardiovascular system.

- g. Develop action plans to identify risks, causes, prevention and treatment of cardiovascular disease.

Unit 1 Outcomes	How Unit 4/5 Outcomes Might Be Incorporated Into Unit 1
1.1	4.1 i.e. address well-known athletes who have overcome socio-cultural disadvantages using their athletic ability to increase perceived status through performance 5.3 i.e. identify issues such as “recreational” drug-use as identified by Canadian Centre for Ethic in Sport 5.4 i.e. discuss current issues in sport such as hockey violence
1.2	5.1 i.e. compare building of Eiffel tower modeled to femur structure 5.3 i.e. speak to role of nutrition and its effect on body functioning including topics such as anorexia and bulimia 5.4 i.e. discuss current issues in sport such as the impact of concussions on athletic performance and/or continued performance
1.3	5.3 Specific outcomes incorporating relevant events to the skeletal system 5.4 i.e. discuss current issues in sport such as the impact of mixing medications by ergogenic aids in sport entertainment such as professional wrestling
1.4	4.1 i.e. address how physical education has evolved from the use of calisthenics to that of dynamic warm-up 5.2 i.e. consider the role of programs such as InMotion in increasing levels of participation 5.3 i.e. consider how the abuse of various supplements impacts aesthetics and athletic perceptions of self and others 5.4 i.e. compare and contrast the musculature of athletic models vs. fashion models
1.5	5.3 i.e. debate issues surrounding legal and illegal forms and impact of blood doping and steroids

Unit 2: Human Performance

Time: 30-35hours

Unit Description: Students describe the relationship between nutrition and activity and investigate the effects of performance-enhancing methods and substances on human performance. Students demonstrate an understanding of the effects of training principles, technology, and environmental conditions on human performance. They use biomechanical principles to demonstrate an understanding related to improving movement.

Outcome

2.1 Understand nutritional guidelines and principles of training as required for a healthy lifestyle

Indicators:

- a. Identify and design a personal program plan using the principles of training (i.e. frequency, intensity, time and type) from sample training plans.
- b. Compare the differences in methods of training (i.e. interval, resistance and plyometrics) as well as other important factors in training (i.e. rest, recovery, overtraining, and injury prevention).
- c. Select a method of training as it applies to a certain individual or client
- d. Observe, collect and analyze physiological data
- e. Provide examples of the different macro nutrient (i.e. proteins, carbohydrates, and high/low density lipoproteins) and micronutrients (i.e. vitamins, minerals, and water) and explain how they impact physical function
- f. Consider First Nations, Métis, and Inuit ways of knowing when considering dietary needs
- g. Debate dietary reference intakes from local and provincial references (i.e. Canada's Food Guide)
- h. Debate dietary references from various diet plans and methods (i.e. zone, carb loading, competitive meals)
- i. Compare food labels and nutritional claims
- j. Explain the energy equation (i.e. basal and metabolic rates, input and output to estimate caloric needs) as it pertains to body weight management (i.e. fat loss and muscle gain) and design a food plan specific to performance requirements for an individual.
- k. Create a brochure describing the cause and effect of diet related issues (i.e. obesity)
- l. Critique various methods of calculating body composition (i.e. body mass)
- m. Conduct an interview with a lab technician around the areas of technology and human physiology
- n. Create a personalized plan which incorporates nutritional guidelines and principles
- o. Conduct an inquiry experiment around the areas of body composition and sport performance

Outcome

2.2 Analyze scientific models of biomechanics related to human performance

Indicators:

- a. Observe ,collect and analyze data related to linear and rotational motion
- b. Apply the concepts of vectors as it relates to physical activity
- c. Select and synthesis lever systems and how they relate to the body
- d. Reflect on the applications of biomechanics to the world of sports including the areas of sport performance, injury prevention/ rehabilitation and fitness (i.e. heat cramps, strokes, and exhaustion)

- e. Demonstrate how technology can be applied to enhance athlete performance and movement (i.e. probeware, video analysis...)

Unit 2 Outcomes	How Unit 4/5 Outcomes Might Be Incorporated Into Unit 1
2.1	4.1 i.e. explore diabetes and its prevalence among various cultural groups 5.1 i.e. discuss the impact of osteoporosis on women 5.2 i.e. study the evolution of school cafeteria and vending machine options from less to more healthy choices 5.4 i.e. analyze the impact of advertising campaigns on nutritional choices and/or gender bias as it is manifested within advertisements such as thin female vs. muscular male
2.2	4.1 i.e. discuss evolution of the human body as the result of various training methods 5.1 i.e. explore advancements in technology such as video analysis and their impact on training methods 5.2 i.e. discuss the development of sport academies in school which offer specialized and sports related learning opportunities 5.4 i.e. analyse and compare unconventional vs. technologically advanced training methods and how they change over time as can be observed using various Rocky movie clips

Unit 3: Motor Development

Time: 15-25 hours

Unit Description: Students demonstrate an understanding of the stages of development from infancy to adulthood to help them design an age-appropriate activity. They also demonstrate an understanding of the factors that affect physical growth and development. They investigate the physical and psychological factors that affect skill performance. Students demonstrate an understanding of motor learning such as the phases of motor development and the skill acquisition process, to analyse or teach a skill.

3.1 Apply knowledge of human growth and development

Indicators

- a. Compare and analyze four key components (i.e. physical, cognitive, motor skills and social skills) of human development (i.e. Piaget)

- b. Provide examples of the relationship between age and physical development (i.e. cephalocaudal and proximodistal sequences) and the various ways of measuring age (i.e. chronological, skeletal and developmental)
- c. Provide examples of the relationship between glandular secretions/hormones and physical development
- d. Identify questions related to the study of human morphology and the three morphological types (i.e mesomorph, ectomorph and endomorph)
- e. Predict how the four basic stages of human growth and development (i.e. infancy/toddler, childhood, puberty/adolescence, and adulthood) are related to the four basic phases of human movement (i.e. reflexive, rudimentary, fundamental, and sport-related)

Outcome:

3.2 Apply growth and develop knowledge to motor learning and skill acquisition

Indicators

- a. Observe and analyze how humans acquire complex movement skills
- b. Select and synthesis written lab reports that apply knowledge of the phases of skill acquisition using a checklist
- c. Observe, collect and analyze data related to stages of motor learning and skill acquisition
- d. Reflect on various factors effecting skill development including evaluation and feedback
- e. Provide examples of various skill categories (i.e. locomotors, manipulative/ handling and stability / balancing)
- f. Recognize adaptations needed for skill development including the processes of shaping and chaining.
- g. Express insight related to coaching practices in the areas of skill development
- h. Assess the ten basic movement patterns and performance cues through interactive observation (i.e. grade 1 classroom visit)

Outcome:

3.3 Explore the physical, psychological, and socio-cultural factors related to sport and exercise.

Indicators:

- a. Discuss how psychologists define performance states
- b. Compare key terms in sport psychology including arousal, anxiety, relaxation, concentration and motivation.
- c. Assess psychological factors that can affect performance including self talk, imagery/ visualization, hypnosis, motivation, goal setting and concentration improvement.
- d. Conduct an interview with sport psychologist or athlete regarding psychological factors effecting performance.
- e. Provide examples of various roles and careers open to sport psychologist

- f. Understand factors and biases that inhibit and enhance athlete performance and engagement opportunities (i.e. diet, nutrition, socioeconomic, culture, religion, gender...)
- g. Identify strategies athletes use in an effort to reach an ideal performance state amidst various enhancing and inhibiting influences (i.e. mental training, training...)

Unit 3 Outcomes	How Unit 4/5 Outcomes Might Be Incorporated Into Unit 1
3.1	4.1 i.e. trace the physical and cognitive development of humans birth to maturity 5.2 i.e. discuss community program offerings which focus on long-term/year-long development of athletes in a specific sports based on accessible sports facilities 5.3 i.e. investigate the ethics of using creatine and protein supplements to enhance muscular development 5.4 i.e. discuss how one’s definition and perception of a healthy appearance as influenced by the media impacts nutritional choices
3.2	4.1 i.e. compare athletes who have had positive and/or negative impact on societal perception of what is and is no longer acceptable in the world of sport such as John Daly vs. Tiger Woods 5.1 i.e. identify alternative use(s) and/or transformation of facilities to enhance motor learning and skill acquisition beyond initial use 5.2 i.e. provide opportunities for students to develop skill through the use of community recreational programs 5.4 i.e. debate definition and perception of a optimal performance as influenced by the media impacts nutritional choices
3.3	4.1 i.e. discuss the use of mental training techniques on both amateur and professional athletes 5.2 i.e. i.e. provide opportunities for students to develop self-esteem through the use of community recreational programs 5.3 i.e. discuss various pressures faced by athletes to use performance enhancing drugs 5.4 i.e. reflect upon media and both the explicit and implicit effect on developing value and belief systems

Unit 4: Evolution of Physical Activity and Sports

Time: 5 hours (Note: It is recommended that Unit 4 and 5 are used to provide context for Unit 1, 2, and 3 rather than be taught in isolation. As Unit 4 and 5 are key to project completion and portfolio development it is essential that they be referenced throughout Units 1, 2 and 3)

Unit Description: Students explore the world of sports and physical activity from a sociological perspective. Students demonstrate an understanding of the role of physical activity within the culture of sport and discover the evolution of sports through diverse time periods. They

demonstrate an understanding of various sport-related issues, e.g., coaching, role modelling, violence in sport, exploitation in sport, equal access to sports. Students identify Canadian athletes and describe their contributions to the development of the current Canadian sport landscape.

Outcome:

4.1 Explore the world of sports and physical activity from a sociological perspective

Indicators:

- a. Create a visual table or web organizer to illustrate a historical timeline of physical activity and sports (i.e. role of Greece, Rome, Victorian era, professional sport)
- b. Analyze the factors that influence participation in physical activity and sports (i.e. past influences such as racial segregation, current trends, coaching, role models)
- c. Reflect on the notion of National unity influenced by sport (i.e. Commonwealth Games and Olympics)
- d. Identifying Canadian and/or First Nations, Metis, and Inuit athletes who have contributed to sports and physical activity, describing their contributions
- e. Select and synthesize a written or oral presentation (e.g., seminar, tutorial) describing the evolution of physical activity and sport
- f. Reflect on the contribution of First Nations, Metis, and Inuit cultures on the development of sports and physical activity in Canada (i.e. lacrosse, snowshoeing, kayaking, canoeing...)

Unit 5: Relationship of Society and Culture to Physical Activity and Sport

Time: 5 hours (Note: It is recommended that Unit 4 and 5 are used to provide context for Unit 1, 2, and 3 rather than be taught in isolation. As Unit 4 and 5 are key to project completion and portfolio development it is essential that they be referenced throughout Units 1, 2 and 3)

Unit Description: Students demonstrate an understanding of the connections between society and culture as they influence and interact with the world of sport and physical activity. Students analyse relationships through such topics as business and sport, amateur versus professional sport, gender representation, and ethno-cultural preferences. Students describe the benefits of school and community physical activity and sports programs to themselves and to society

Outcome:

5.1 Demonstrate insight to the connections and influences of society and culture on sport and physical activity

Indicators:

- a. Create written and oral reports to analyze the relationships of business and sport/physical activity (i.e. rising salaries, sponsorship, and amateur vs. professional sport)
- b. Identify career opportunities in fields related to physical activity and sports
- c. Reflect and assess gender representation and ethno-cultural preferences pertaining to physical activity and sport
- d. Discuss and debate the differences between for profit and not for profit sport
- e. Express insight about the contribution of sport to local economies (i.e. replica products, food and beverage, accommodation, alternative uses of facilities, and charity)

Outcome:

5.2 Recognize the evolution of school and community sport programs

Indicators:

- a. Assess barriers and trends in participation regarding physical activity events around school and collaborate in planning activities and events (i.e. urban/rural setting, community expertise, community values and beliefs, fitness participation, intramurals, and fitness clubs) in school and community for individuals.
- b. Express insights to the benefits of recreational programs in improving overall well-being and creating social networks for youth
- c. Reflect on the history of sport and physical education in Canadian schools
- d. Analyze contemporary trends in Canadian school physical education and predict future paths of physical education (K-12 in Saskatchewan)
- e. Research early Canadian school and or sport pioneers

Outcome:

5.3 Investigate the role that ethical and social considerations play in sport at all levels

- a. Discuss and debate the ethics and issues in contemporary sport
- b. Formulate opinions/ideas towards violence, dishonesty, drugs, tobacco and alcohol sponsorships and gambling in sport using the knowledge of Canada's own strategies for the development of policy regarding ethical conduct in sport

Outcome:

5.4 Investigate the evolving role that various media play in sport at all levels and its impact on society

- a. Identify the role played and impact of media on sport
- b. Explore the role of marketing , promotion, and social media on sport as an entertainment industry (i.e. advertising campaigns, broadcasting rights, player endorsement ...)
- c. Explore the role of social media on sport (i.e. Twitter, Facebook, YouTube, apps...)

- d. Analyze the role key figures play in the sports industry (i.e. team owners, athlete, unions, agents, sponsorship, fans...)
- e. Recognize and observe the role of media in the exploitation and equity of sport among various interest groups

Instructional Materials

Key Resources

Ted Temertzoglou in collaboration with Paul Challen and the Thompson Publishing group have put together an outstanding package of materials that unite student resources and teacher resources. The main teaching resources utilize a well-formatted teacher's manual complete with power point presentations for each lesson. The textbook is current and the information is entirely Canadian. The student workbook serves as a useful tool to help each student organize and put his or her learning into practice. In addition Thompson Publishing's website also provides online tests, bell ringers and quizzes which allow students to assess themselves at any time, and helps educators develop their own network of information on line.

Temertsoglou, T., and P. Challen. (2003). Exercise Science: An Introduction to Health and Physical Education. Toronto, ON: Thomson Educational Publishing.

* Supplemental online teacher and student support for Exercise Science:
http://thompsonbooks.com/teachersupport/es_pw_check.asp
<http://thompsonbooks.com/exercisescience/>

Temertsoglou, T., and P. Challen. (2014). Kinesiology: An Introduction to Exercise Science. Toronto, ON: Thomson Educational Publishing.

*Supplemental online teacher and student support available for Kinesiology - print resource must be purchased

Additional Resources

A.D.A.M. Software Inc. (1997). Cardiovascular System: Interactive Physiology. Toronto, ON: Benjamin Cummings.
– <http://www.adam.com>

A.D.A.M. Software Inc. (1997). Nervous System 1: Interactive Physiology. Toronto: Benjamin Cummings.
– <http://www.adam.com>

A.D.A.M. Software Inc. (1997). Respiratory System: Interactive Physiology. Toronto: Benjamin Cummings.
– <http://www.adam.com>

Baechle, T.R. and R.W. Earle. (2008). Essentials of Strength Training and Conditioning (3rd ed.). Windsor, ON: Human Kinetics

ESPN – 30 for 30 Shorts

- <http://espn.go.com/30for30/shorts>

Floyd, R.T. and C.W. Thompson. (2001). The Manual of Structural Kinesiology (14th ed). Toronto, ON: McGraw-Hill.

Florida State University College of Medicine.

– <http://www.medlib.med.utah.edu/WebPath/CVHTML/CVIDX.html>

GateWay Community College.

– <http://www.gwc.maricopa.edu/class/bio202/index.htm>

Get Body Smart.

– <http://www.getbodysmart.com>

Gatorade Sports Science Institute.

– <http://www.gssiweb.com/>

Google App - BioDigital Human

- <https://chrome.google.com/webstore/detail/biodigital-human/agoenciogemlojhhccbcpcfflicgnaak?hl=en>

Gordon, D. and Steven L. Gordon. Human Physiology with Vernier Lab Book. Beaverton ,OR: Vernier Softward and Technology.

– <http://www.vernier.com>

Government of Ontario. (2009). Physical and Health Education: Core Concept - A Human Performance. Oakville, ON.

Government of Saskatchewan . (2009). Physical Education 9. Regina, SK: Queen’s Printer Press.

– <http://www.edonline.sk.ca>.

Innerbody Intellimed My Health Score.

– <http://innerbody.com/htm/sysselec.html>

Kapit, W. and L.M. Elson. (2001). The Anatomy Colouring Book. (3rd ed). Toronto: Benjamin Cummings.

Murray Jensen General College, University of Minnesota.

– http://www.gen.umn.edu/faculty_staff/jensen/1135/webanatomy/

National Science Foundation.

– http://www.nsf.gov/news/special_reports/olympics/

Orthopedic Institute Southern California.

– <http://anatomy.uams.edu/HTMLpages/anatomyhtml/anatomylinks.html>

Our Bodies: The Universe Within.

– <http://www.ourbodytheuniversewithin.com>

Robertson, T. and S. Glover. (2004). Senior Physical Education, revised edition. Malvern, Australia: Coghill Publishing.

Saskatoon Public Schools. (2009). Active Living and Fitness Leadership 30L. Saskatoon, SK: Saskatoon Public Schools.

Shier, D., J. Butler, and R. Lewis. (2010). Hole's essentials of human anatomy and physiology (7th ed). Whitby, ON: McGraw Hill Ryerson.

Sports Science.

– <http://www.sports.espn.go.com/espn/sportscience/index>

The Franklin Institute Science Museum. Philadelphia, Pennsylvania

– <http://www.fi.edu/biosci/preview/heartpreview.html>

The Institute for Sport, Agder College, Kristiansand, Norway

– <http://home.hia.no/~stephens/exphys.htm>

The Physician and Sports Medicine Online

– <http://www.physsportsmed.com/>

University of California at San Diego.

– <http://www-neuromus.ucsd.edu/MusIntro/Jump.html>

Evaluation of the Locally Developed Course Study

Following the completion of this Locally Developed Course, instructors will complete and submit the following questionnaire within two weeks of completing the course. Completed questionnaires can be faxed to:

Supervisor of Instruction
Regina Public Schools
Phone (306) 523-3136
Fax (306) 523-3031

1. Enrolment

- a) How many students enrolled in this course?
- b) How many students successfully completed this course?
- c) Which semester did you offer this course in?

2. Reflection

- a) What successes were experienced in the teaching and learning of this course? Explain.
- b) What challenges were experienced in the teaching and learning of this course? Explain.

Be sure to reference

- Learning outcomes
- Core curricular components and initiatives
- Career development competencies
- Instructional approaches
- Assessment and evaluation techniques
- Instructional materials

3) Interpretation

- a) How might successes identified be enhanced? What supports might be required? Explain.
- b) How might challenges identified be overcome? What supports might be required? Explain.
- c) What revisions, additions, deletions, would you recommend be made to this course as currently developed? Explain