Concordian International School

Course Outline 2006 -2007

MYP Science: Years 1-5

The overall objective of the MYP Science program is to provide students with a foundation that will make them scientifically literate so that they can make informed judgments and decisions about scientific issues, and use the acquired scientific process skills for successful problem-solving. -IBO MYP Sciences, Book One, 2000-

Introduction:

Science at CIS takes a coordinated approach, presenting 4 sciences per year and building on this knowledge each year. By presenting 4 sciences per year, students are able to build on their understanding of each science as well as relate the sciences through common links. Upon completion of the course, students will have the skills and knowledge to comfortably assimilate into the IB Diploma program.

Course organization:

Science students experience one 40 minute lesson and two 80 minute lessons each week. Each quarter of the school year, for each level within the MYP, is designated to a science field a seen below.

	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*
Grade 6 (MYP1)	*Biology*	*Chemistry*	*Physics*	*Astronomy*
Grade 7 (MYP2)				*Earth Science*
Grade 8 (MYP3)				*Environmental Science*
Grade 9 (MYP4)				*Science Fair*
Grade 10 (MYP5)				*Science Assessment and IB prep*

Course outline:

Grade 6 (MYP 1)	
1. Biology ECIC • Energy Flow • Cycles • Inter-Relationships • Change	***2. Chemistry*** • Laboratory Techniques • Microscope Structure and Function • Direct versus indirect measurement • Solutions
3. Physics • Fields - magnetic, electrical, gravitational • Magnetism • Static electricity • Energy	***4. Astronomy*** • Earth Seasons • Rotation versus revolution • Moon: Phases and Tides • Solar system

Grade 7(MYP 2)	
1. Biology *(Plants)* • Cells • The plant kingdom • Plants: structure and reproduction • Photosynthesis	***2. Chemistry*** • Water: Structure, Properties, Testing • Properties of matter: volume, density, mass, changes of state, physical and chemical changes, buoyancy, quantitative and qualitative observation
3. Physics • Work: Calculations • Complex machines – levers, inclined planes, pulleys, gears, wheels and axles, wedges, hydroelectric generators	***4. Earth Science*** • Land forms • Erosion • Ocean Motion • Topographic Mapping

Grade 8 (MYP 3)	
1. Biology *(Animals)* • Respiration • The animal kingdom • Diversity and Reproduction • Animal Behavior • Ecology and Wildlife Conservation	***2. Chemistry*** • Atomic Structure • Gas tests • Elements, compounds and mixtures • Bonding: Ionic and covalent
3. Physics • Motion: Speed, Velocity, Acceleration • Forces • Newton's 3 Laws of Motion	**4. Environmental Sciences** • Fossil fuels • Conservation • Alternative Energy

Grade 9 (MYP 4)	
1. Biology *(Human Anatomy)* • Internal Systems • Diffusion and osmosis • Effect of lifestyle on health • Reproduction	***2. Chemistry*** • Bonding: Ionic and covalent, polar vs. non-polar • Reactivity • Acids and Bases • Flame Testing
3. Physical sciences • Waves • Sound • Light • Solar Energy	***4. Science Project*** • Field research • Science Fair

Grade 10 (MYP 5)	
1. Biology • Cells • DNA • Mitosis and meiosis • Genetics • Evolution	***2. Chemistry*** Analytical Chemistry • Quantitative & Qualitative Chemistry • Forensics • Titration, chromatography & calorimeter Organic chemistry • Carbon and • Organic compounds • Polymers
3. Physical sciences • Motion • Current electricity • Heat • Radioactivity	***4. Science Project*** • MYP Science in review • Preparation for IB-DP… (Grade 11 - 12)

Assessment:

Students will be assessed through the Areas of Interaction in each of the 6 MYP Science Criteria.

Criterion A	One World	Maximum 6
Criterion B	Communication	Maximum 6
Criterion C	Scientific Knowledge and Concepts	Maximum 6
Criterion D	Scientific Enquiry	Maximum 6
Criterion E	Processing Data	Maximum 6
Criterion F	Performance in Experiments	Maximum 6

Methods of assessment include: Projects, Practicals, Papers, Presentations and Tests.

Upon each reporting period, a level of achievement between 1(low) and 7 (high) will be awarded to the student based the criteria grades for that period.