

COURSE SYLLABUS

Course Title: General Science (6th Grade, Starter)

The Asian International School

I. INSTRUCTIONAL RESOURCES:

1. Text

The textbook for *Natural Sciences I* is Essential Natural Science – 1 by Santillana, Richmond publishing (1st edition). For the starter's level (SS1) and elementary level, teachers will cover a good portion of the material from 1A and 1B

2. Other resources:

<http://www.richmondelt.es/w/catalogue/clil-textbooks/primary-1/natural-science/>

II. COURSE PREREQUISITE:

Starter students must have passed the Primary level

Elementary students must have passed Starter level

III. COURSE OVERVIEW

During the course of the class, we will examine the basic principles of biology, chemistry and physics, the structure and function of living organisms, and contemporary issues. Students will gain an insight and understanding of life by examining and exploring the concepts stated in the book. The purpose of this class is to shape students into critical thinkers, effective communicators, good citizens and life-long learners of science. In the process it is our goal that students will grow academically and develop strong study skills that enable them to be successful in their future academic endeavors.

IV. COURSE DESCRIPTION

Natural Sciences I covers elements of Physics, Chemistry, Astronomy and Planetary Science, in that order. The progression of the course is thus from the most fundamental of sciences in which very simple systems are discussed to sciences that draw upon the basics to examine progressively more complex systems.

This course is a two-semester sequence (SS1 & SE1) which together constitute a comprehensive and integrated survey of the natural sciences. For our purposes, the term "*natural sciences*" is taken to mean the sciences of the natural world, as set apart from the man-made world. The course sequence is *comprehensive* in that it covers all the natural sciences biology, chemistry, geology, and physics at scales ranging from that of the atom to that of the universe. The coverage of each discipline cannot, of course, be comprehensive. The course sequence is *integrated* in that attempts will be made throughout the year to show connections among sciences generally treated in isolation (such as biology and chemistry, or physics and geology). Attention will be given to the relevance and usefulness of science and of scientific methodology to humankind.

V. COURSE GOAL

The purpose of this course is to give students an opportunity to study and apply key natural science concepts that relate to their own lives and to create groundwork for their future science and medical-

related courses and professions. This course is a prerequisite course for most of their future Science courses. The study of this world is fascinating; students will be amazed at the complexity of even the simplest organisms and how one affects another.

VI. COURSE OBJECTIVE

The students will learn about getting closer to the stars, the universe, planet earth, living things, Invertebrate, vertebrates, the plant & fungi kingdom, the simplest living things, the composition of matters and describing matters. The main target of this course is to develop students understanding of new science vocabulary, study skills and increase science literacy. In this stage students are introduced to the basic lab equipments & techniques.

Students will develop an understanding of the composition of the atmosphere, and study the atmospheric variables that affect weather conditions. Enhance the knowledge on hydrosphere – the properties and distribution of water on Earth. Learn about mineral composition, their uses and properties. Identify various types of rocks and their process of formation.

Students will develop knowledge of the physical properties common to all objects and substance and understand the nature of matter. Students will learn how properties of elements and the location of elements on the periodic table are related. Differentiate atoms, elements, molecules and crystals. Students will develop an understanding of the characteristics of energy and the interactions between matter and energy.

VII. COURSE REQUIREMENTS

A. Pre-Lecture Assignment:

The pre-lecture assignments are a set of objectives to be answered before the science teacher covers the material in class. The purpose of lecture is to clarify and expand upon these topics. Failure to do daily assignments will result in a loss of participation points. Participation points will be also lost for failure to bring assignments to class.

B. Teacher's Responsibility:

The teacher's responsibility is to assign grades based upon fair and consistent standards and to communicate these practices to each student. Grades are to be determined by student performance on teacher-initiated assignments, tests, homework projects, and class participation. Students will be informed of progress periodically.

C. Homework:

There will be 24 homework assignments during the term (roughly one every two weeks). Questions and problems will be taken from the text and other sources; their purpose will be to get you to think about material presented in lecture and give you practice in problem-solving. Homework is due at the beginning of each class period and will be graded on effort.

D. Tests:

Tests will be given after each unit of study. Grades will be given as a percent of the high score. There will be one monthly test. The second and third tests will be cumulative in the following respects: 10% of the point value on the second exam will come from material covered on the first exam, and 20% of the point value on the third exam will come from material covered on the preceding two exams. The exams will include short-answer (possibly involving simple calculations, multiple-choice and true/false questions).

E. Expected Background:

We recognize that most students enrolled in Natural Sciences 1 are not majoring in a science or scientific field. Accordingly, no prior knowledge of scientific principles or methods will be assumed. All discussions will build from an introduction of principles at a very basic level. Mathematics is another

matter. As the universal language of science, math is the way in which we communicate our understanding of the way things work. We must assume, therefore, that students enrolled in the course have some facility with basic mathematics and primary school science.

F. Use of Class Time

The 45 minute class period will be used for introduction of material, mostly in lecture format, with liberal use of examples and occasional films. The recitations (times TBA) will be used to introduce homework assignments, conduct demonstrations, review for exams, and address general questions.

VIII. EVALUATION AND GRADING

Student progress made during the course taking will be assessed through achievement tests as well as other assessments designed, planned, and implemented by classroom teachers. The following grading scale will be operated separately in each semester.

Achievement Tests (60%)

- Mid-term (30%)
- Final Exam (30%)

Other Assessments (40%)

- Homework: individual/group projects
- In-class assessments: Quizzes, literary/writing tasks, etc.
- Class Performance: Attendance and Participation

IX. GRADING SCALE

This scale is operated to translate letter grades into point values, and vice versa, when calculating student final grades.

Letter	Range	Percentages
A	90-100	90% (High Distinction)
B	80-89	80% (Distinction)
C	65-79	70% (Pass with merit)
D	50-64	60% (Pass)
F	0-49	Below 60% (Fail)

X. COURSE SCHEDULE

MONTH	TOPIC	CONTENT	UNIT
AUG.	Living Things	*General characteristics of plants *Variety of Plants *How do living things differ? *What are the five kingdoms? *How are living things classified? *What is a species?	3(1A)

		<ul style="list-style-type: none"> *What is Biodiversity? *What do all living things have in common? *What are living things made up of? *What are cells? *Structures of plant cells *How do animal and plant cells differ? *What is cell division? *What is the basic difference between meiosis and mitosis? *How cell division relates to the growth of the cell? 	
SEPT.	Plants and Animal Kingdom	<ul style="list-style-type: none"> *What living things make up the plant kingdom? *What are flowering and non flowering plants? *Examples of Flowering and Non-Flowering Plants *Function of ROOTS, STEMS AND LEAVES *How do plants reproduce? *What is plant nutrition? *Can plants react? 	6(1A)
OCT.	Importance of Plants	<ul style="list-style-type: none"> *What is a Seed and its parts? *How many types of fruits and seeds are there? *What is the mode of dispersal of seeds and fruits? *What are the conditions needed for the growth of seeds? *What are the benefits of plants? *What is soil and water conservation? *How can erosion be managed? 	6(1A)

NOV.	The Simplest Living Things	<ul style="list-style-type: none"> *What is the Monera Kingdom? *What is the Protoctist Kingdom? *What are viruses and infectious diseases? *How can we fight infectious diseases? *Are all microorganisms harmful? *What are fungi like? 	7(1A)
DEC.	The Universe	<ul style="list-style-type: none"> *Getting Closer to the Stars *What is the Universe like? *How big is the Universe? *What makes up the Solar System? *What are the inner planets? *What are the outer Planets? *What are smaller solar system bodies? 	1(1A)
JAN.	Planet Earth	<ul style="list-style-type: none"> *What is Earth like? *How does the Earth move? *How does the Moon move? *How many "spheres" make up the Earth? *What is the surface of the Earth like? *What are the other three Earth "spheres"? 	2(1A)
FEB.- MAR.	Matter and Its Properties	<ul style="list-style-type: none"> *What is matter? *What is length? *What is surface area? *What is volume? *What is mass? *What is density? 	12(1B)
APR.- MAY	Everything is Matter	<ul style="list-style-type: none"> *Which are the states of matter? *How can matter change its state? *What are mixtures? *What are pure substances? 	13(1B)

		*What are physical and chemical changes?	
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