The American School of Marrakesh

Grade 7 Science 2015-2016

*Welcome students and parents to the second year of middle school science!*

**Introduction:**

In Grade 7 Science, students continue developing their understandings of the physical and living universe. Students will explore topics from the major scientific disciplines including the physical (including physics and chemistry), biological, and earth sciences. Students will develop an appreciation of the scientific process to the acquisition of scientific knowledge. Students will also start to develop scientific report writing skills, gain proficiency in use of scientific equipment, and have the opportunity to apply computer and mathematical skills.

Preparation

The curriculum for grade 7 is aligned with the textbook *Science Integrated Course 2* published by *McDougal Littell*. This textbook offers learning science in terms of accuracy, depth, presentation and expression of scientific concepts.

The textbook will be used for both class and homework and as such is essential for every class. Students are responsible for their new textbooks and should not be left in the classroom. It should be brought to class every session.

Students will be required to have a science notebook for recording information they have studied. The students will turn in and compile graded lab reports.

The student planner is a wonderful way of getting students organized. The school encourages students to have one and use them throughout the year.

Students need to be equipped with black or blue pens (for note taking), pencil, ruler and eraser (for scientific diagrams and graphing), and glue sticks (for keeping worksheets in order). Highlighters and correction tape are also useful items. Refer to materials list in science for a complete list. Students should label their stationery items as many items end up in the science lost property.

Assessment:

Assessments will take a variety of forms that may include written projects, manual projects, technology tasks, oral presentation, quizzes and tests.

Assessment in middle school is as follows:

**60% Tests, Quizzes and Term Projects** (Individual, Group Work)

**15% Lab Reports and Projects** (lab reports, lab-based projects and major research projects)

**10% Classwork/Homework**

**5% Class Participation**

**5% Readiness for Class** (on time for class, materials complete,

Science Starter)

**5% Notebook Check** (announced/unannounced)

**\*Term 3 Grade =** Final Exam, Performance Assessment, Portfolio

##### Homework Policy

Students in Grade 6 science should be completing roughly 1-1.5 hours of homework in Science per week, though this will vary somewhat depending on the topic. As can be seen from the course outline tables (refer next page), homework may tend to be less at the commencement of a topic and increase towards the end of each topic when major assessments are due, and when study/review for unit tests is required.

Homework in Science may include textbook work, completion of lab reports to be done at home, or research for projects and assignments.

Late homework policy of deducting 20% for a day an assignment will be followed where no valid or reasonable excuse is provided. **No late assignments will be accepted after one day late.**

**Tutorials /Extra Assistance**

Extra help for Grade 6 Students will be held in **Room 204** from 3:45-4:15pm (check teacher’s schedule posted at the door). Tutorials are primarily designed to assist students having difficulties with scientific concepts and who wish to improve their grade.

At tutorials, students may:

* Ask questions to the teacher/get extra assistance for class or homework
* Catch up on missing homework or bookwork
* Work on groups to complete group tasks such as projects or group based lab reports

Attendance at tutorials is voluntary. Ms. Vergara would appreciate if you could let her know in advance if you would be attending or not.

**Additional Information**

Additional information about Grade 7 Science can be found at the school’s website, AERO website and teacher website (Weebly).

If you wish to know any other information regarding Grade 7 Science, or should you have concerns that arise during the year, please don’t hesitate to contact me at:

rvergara@asm.ac.ma

Warm regards,

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######  Ms. R. Vergara

*Middle School/High School Science Teacher*

Grade 7 Integrated Science Course Outline

*Ms. Vergara*

The course will include the following topics :

**Physical Science**

**Heat Energy** During the study of this unit**,** students will use data to draw conclusions about how

 heat can be transferred (convection, conduction, radiation)

 **Sound Energy** Describe sound as the transfer of energy through various materials (e.g. solids,

 liquids, gases).

**Light Energy** Investigate and explain the effects on wavelength and frequency, as

 electromagnetic waves interact with matter (e.g. light diffraction, blue sky)**.**

**Electricity and Transformation of Energy,**

**Potential and Kinetic Energy** Show, given a real world example, that within a system, energy

 transforms from one form to another (i.e., chemical, heat

 electrical, gravitational, light, sound, mechanical).

**Transmission of Energy** Investigate, observe, and predict how energy might be transferred by

 means of waves

**Nuclear Energy** That electromagnetic energy from the Sun (solar radiation) is the major source of energy on Earth.

**Conservation** By carrying out practical investigations, collect data or use data

 provided to infer or predict that the total amount of mass in a closed system stays

 the same, regardless of how substances interact (conservation of matter).

**Motion** By investigation, measure distance and time for a moving object and using

 those values as well as the relationship s=d/t to calculate speed and graphically represent

 the data.

**Effect of Forces,**

**Gravity and Friction** Through practical work and research, data will be gathered to determine or

 predict the overall net effect of multiple forces (e.g friction, gravitational

 and magnetic) on the position, speed, and direction of motion of objects.

**Life Science**

**Basic Needs of Living Things**

**and Structure and Function of Organisms** Describe or compare how different

 organisms have mechanisms that work in a

 coordinated way to obtain energy, grow, move,

 respond, provide defense, enable reproduction, or

 maintain internal balance (e.g. cells, tissues,

organs and systems).

**Classification of Living Things** Use a model, classification system, or dichotomous

 key to illustrate, compare, or interpret possible relationships

 among groups of organisms (e.g internal and external

 structures, anatomical features).

**Needs and Survival of Living things** Use data and observations to make connections

 between, to explain, or to justify how specific cell

 organelles produce/regulate what the cell needs or what a

 unicellular or multi-cellular organism needs for survival.

 **Source of Energy for Living Things** Trace the flow of energy through an ecosystem.

**Interactions among Organisms**

**And their Environment** Describe how the environment and interactions between

organisms can affect the number of species and the diversity of species in an ecosystem.

**Life Cycles/Reproduction** Compare and contrast sexual reproduction with asexual reproduction*.*

**Natural Selection** Cite examples supporting the concept that certain traits of

 organisms may provide a survival advantage in a specific environment and

 therefore, an increased likelihood to produce offspring.

**Earth Science**

**The Atmosphere and Cycles**

**in Earth’s Systems** Describe how matter in the atmosphere cycles through other

 Earth systems

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**Weather and Factors**

 **Affecting Weather** Explain the role of differential heating or convection in ocean

 currents, winds, weather and weather patterns, atmosphere, or climate.

**Earth’s Resources** Explain the importance of Earth’s resources and identify ways in

 which various resources can be recycled and re- used.

**The Atmosphere** Identify ways in which the atmosphere has been altered by living

systems and has itself strongly affected living systems over the course of Earth’s history