**Course Title: Science 8**

**Course Number:** 0\_SC081

**Course Length:** Year

**Course Credit:** 1.00

**Prerequisite(s):** Successful completion of Science 7

Instructor(s): Ms. Davis, Mr. Nagy

**Phone Number(s):** 8288-4400, extension(s) 4807, 4805

**Email Address(es):** [rachel.davis@asfm.edu.mx](mailto:rachel.davis@asfm.edu.mx)

[steven.nagy@asfm.edu.mx](mailto:steven.nagy@asfm.edu.mx)

**Course Description:**

Grade 8 Science students, through the use of lab experiments, group projects, critical thinking, problem solving, and data collection will learn basic principles and concepts in four of the major disciplines of science: chemistry, physics, biology, and environmental science. Topics covered include: pure substances and mixtures, the periodic table, chemical bonding and nomenclature, energy, motion, cell division, human biology, species interactions and ecosystems.

**Course Materials:**

**Textbook(s):**

*Science Explorer: Cells and Heredity* - Prentice Hall, ©2000

*Science Explorer: Human Health and Biology* - Prentice Hall, ©2000

*Science Explorer: Chemical Building Blocks* - Prentice Hall, ©2007

*Science Explorer: Chemical Interactions* - Prentice Hall, ©2009

*Science Explorer: Motion, Forces, and Energy - Prentice Hall, ©2007*

**Novel(s):**

None

**Other:**

None

Course Outline:

Standards and Benchmarks Covered in this Course

\*Please note: the number of recommended days to cover each unit/topic is shown in brackets next to the unit/topic.

Cell Processes (9) Standard 5

Human Biology (16) Standard 5

Ecology (18) Standard 6 and 7

Motion (11) Standard 10

Energy (9) Standard 9

Periodic Table (11) Standard 8

Chemical Bonding (10) Standard 8

Mixtures (7) Standard 8

Science Fair (10) Standard 14

Complex Reasoning Skills Taught

* Comparing
* Systems Analysis
* Experimental Inquiry

Grading Policies and Practices:

Grades earned during the year, prior to the semester exam, will be based upon the content grading categories listed below. The final grade calculation for the year will consist of 80% of all grades earned in the content grading categories from the year and 10% from each semester exam for a total of 100%.

|  |  |
| --- | --- |
| **Year-Long Grading** | |
| **Content Grading Category Names and Abbreviations** | **Percentage (total = 100%)** |
| 8SC – Cell Processes (CELL8SC): 1st Quarter | 8 |
| 8SC – Human Biology (BIO8SC) | 16 |
| 8SC – Ecology (ECO8SC): 2nd Quarter | 16 |
| 8SC – Motion (MOT8SC): 3rd Quarter | 10 |
| 8SC – Energy (EN8SC) | 10 |
| 8SC – Chemistry (CHEM8SC): 4th Quarter | 20 |
| 8SC – Science Fair (SF8SC) | 5 |
| 8SC – School-Wide Dispositions: (DISPS8SC)  Use of Class Time, Response to Instruction, Preparedness, Active Listening and Language | 10 |
| 8SC – School-Wide Skills: (SKILLS8SC)  Comparing, Systems Analysis, Experimental Inquiry, Non-Fiction Writing | 5 |
| **Final Grade Calculation** | |
| **Final Grading Category Names and Abbreviations** | **Percentage (total = 100%)** |
| All Grading Categories Above (A0) | 80 |
| 8SC – Semester Exam 1 (EX18SC) | 10 |
| 8SC – Semester Exam 2 (EX28SC) | 10 |

\* Students who, prior to the Semester 2 Exam, have a cumulative average in the course of 94% or higher may be exempted from the second semester exam in that course, at the teacher’s discretion.

Assessment Procedures

* Quizzes, tests, and examinations
* Laboratory: practical skills and written reports
* Model building and other projects
* Research reports and written assignments
* Participation evaluations
* Science fair project (Project Based Learning Assignment)

Assessment Tasks

* Tests in middle and end of each quarter
* Physics Olympics in Physics Quarter
* Science Fair at the end of the fourth quarter

NOTE: The teacher reserves the right to make modifications to the list of graded assessments, their point and weight values as necessary for instructional purposes.

F – Formative S – Summative

CELL PROCESSES – 8% 9 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 7** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 5.1 | Lab: Cell Size & Diffusion Rates | Lab – F | 20 | 1 |  |
| 5.2 | Cell Cycle Flip Book | Assignment – S | 32 | 1 |  |
| 5.1, 5.2 | Quiz: Cell Processes | Quiz – F | 20 | 1 |  |

HUMAN BIOLOGY – 16% 16 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 8** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 5.5 | Quiz: Immune System | Quiz – F | 21 | 1 |  |
| 5.4 | Poster: Digestive System | Quiz – F | 22 | 1 |  |
| 5.4 | Poster: Circulatory System | Quiz – F | 24 | 1 |  |
| 5.4 | Lab: Heart Rate & Body Position | Lab – F | 24 | 1 |  |
| 5.4 | Poster: Respiratory System | Quiz – F | 19 | 1 |  |
| 5.3, 5.4 | Test: Human Biology | Test – S | 67 | 1 |  |

ECOLOGY – 16% 18 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 9** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 6.1, 6.2, 6.3 | Quiz: Ecosystems and Interactions | Quiz – F | 20 | 1 |  |
| 6.2, 6.3 | Assignment: Species Interactions | Assignment – F | 20 | 1.5 |  |
| 6.1, 6.2, 6.3, 6.4, 6.5 | Lab: The Natural Selection of Forks and Beans | Assignment – S | 24 | 2 |  |
| 6.1, 6.2, 6.3, 6.4, 6.5 | Ecology Project | Project  S | 88 | 1 |  |

MOTION – 10% 14 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 4** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 10.2, 10.4 | Lab: Toy Cars/Understanding Speed | Lab – F | 30 | 1 |  |
| 10.2, 10.3 | Quiz: Calculating Motion | Quiz – F | 30 | 1 |  |
| 10.2 - 10.4 | Lab: Graphing Your Motion | Lab – S | 15 | 2 |  |
| 10.2, 10.3, 10.4 | Test: Motion | Test – S | 52 | 1.5 |  |
| 10.2, 10.3, 10.4 | Physics Olympics | Project – S | 60 | 1.5 |  |

ENERGY – 10% 14 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 5** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of**  **Bin** |
| 9.3 | Lab: What’s Your Power? | Lab – F | 14 | 1 |  |
| 9.1 | Quiz: Work and Power | Quiz – F | 26 | 1 |  |
| 9.2 | Lab: Indy 100/Pencil Car | Lab – F | 28 | 1 |  |
| 9.1, 9.2 | Lab: Toy Cars/Car Coaster | Lab - S | 28 | 2 |  |
| 9.1, 9.2, 9.3 | Test: Energy | Test – S | 62 | 1.5 |  |
| 9.1, 9.2, 9.3 | Physics Olympics | Project – S | 60 | 1.5 |  |

CHEMISTRY – 20% 24 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 1** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 8.1, 8.4 | Knowledge Check: Periodic Table | Quiz – F | 20 | 1 |  |
| 8.1, 8.4 | Lab: Reaction of Metals with Water | Lab – S | 38 | 1 |  |
| 8.1, 8.4 | Test: The Periodic Table | Test – S | 42 | 1.5 |  |
| 8.6 | Modeling Compounds | Assignment – F | 15 | 1 |  |
| 8.6 | Quiz: Ionic and Covalent Bonding | Quiz– F | 25 | 1 |  |
| 8.6 | Chemical Bonding Cartoons/Video | Assignment – S | 16 | 1.5 |  |
| 8.6 | Test: Chemical Bonding and Nomenclature | Test – S | 38 | 2 |  |
| 8.3, 8.5, 8.6 | Lab: Pure Substances & Mixtures | Lab – F | 108 | .25 |  |
| 8.5 | Matter Concept Map | Assignment – S | 32 | 1 |  |
| 8.5 | Lab: Separating Mixtures | Lab – S | 24 | 1 |  |
| 8.3, 8.5, 8.6 | Test: Mixtures | Test – S | 28 | 2 |  |

SCIENCE FAIR – 5% 10 DAYS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 10** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 14.1,2,3,4,6 | Developing Essential Question | Lab – F | 18 | 1 |  |
| 14.1,2,3,4,6 | Science Fair Background Research | Assignment – S | 50 | 1 |  |
| 14.2,7 | Science Fair Report | Project – S | 60 | 1 |  |
| 14.2,7 | Science Fair Project Website | Project – S | 10 | 1 |  |

SKILLS – 5%

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GRADED ASSESSMENT TOOLS UNIT 10** | | | | | |
| **S-B Addressed** | **Assessment Name** | **Assessment Type** | **Possible Points** | **Weight** | **% of Bin** |
| 14.4 | Science Fair Essential Question | Assignment – F | 15 | 1 |  |
| 14.1, 14.2, 14.3, 14.7 | Lab Report Writing | Assignment – F | 12 | 1 |  |
| 14.2 | Notebook Check | Assignment – F | 10 | 1 |  |
| 14.2, 14.3 | Science Fair Website | Project – S | 30 | 1 |  |
| 14.1, 14.3 | Blog Posts/Reflection | Assignment – S | 20 | 2 |  |
| 8.4 | Alien Periodic Table | Assignment - F | 21 | 1 |  |