**Physics Syllabus- Mr. Valle 2017-18**

**Quarter 1**

|  |  |  |
| --- | --- | --- |
| Week of: | Chapter | Topics |
| July 31-Aug 4 | 1. About Science | Metric System, Measurement, Trig Review |
| Aug 7-11 | 1. Newton’s 1st Law | Inertia, movement, Equilibrium |
| Aug 14-18 | 1. Linear Motion | Speed, Velocity, Acceleration |
| Aug 21-25 | 1. Newton’s 2nd Law | Force, Mass, Acceleration |
| Aug 28- Sep 1 | 1. Newton’s 3rd Law | Force Interaction, Vectors |
| Sep 5-8 | 1. Momentum | Momentum, Impulse, Collisions, Conservation |
| Sep 11-15 | 1. Energy | Potential, Kinetic, Work, Power |
| Sep 18-22 | Simple Machines | Wedge, Lever, Pulley, Wheel and axle, inclined plane, screw |
| Sep 25-29 | NA | Exam review, Exam |

**Quarter 2**

|  |  |  |
| --- | --- | --- |
| Week of: | Chapter | Topics |
| Oct 16-20 | 1. Rotational Motion | Circular Motion, Torque, Centripetal Force |
| Oct 23-27 | 1. Gravity | Universal Constant, Law of Gravity, Black Holes |
| Oct 30- Nov 3 | 1. Projectile and   Satellite Motion | Horizontal vs Vertical, Elliptical Orbits, Kepler’s Laws |
| Nov 6-9 | 1. Atomic Nature of Matter | Atoms, Elements, Isotopes, Compounds, Mixtures |
| Nov 13-17 | 1. Solids | Crystal Structure, Density |
| Nov 27- Dec 1 | 1. Liquids | Pressure, Buoyancy, Pascal |
| Dec 4-8 | 1. Gases | Atmosphere, Boyle’s Law, Bernoulli’s principle |
| Dec 11-15 | 1. Temperature, Heat and Expansion | Temperature vs Heat, Specific Heat, Thermal Expansion |
| Dec 18-22 | NA | Exam review, Exam |

**Quarter 3**

|  |  |  |
| --- | --- | --- |
| Week of: | Chapter | Topics |
| Jan 9-12 | 1. Heat Transfer | Conduction, Convection, Radiation |
| Jan 16-19 | 1. Change of Phase | Phase of Matter, Evaporation, Condensation, Freezing, Boiling |
| Jan22-26 | 1. Thermodynamics | Thermodynamics, Absolute Zero, Adiabatic Processes |
| Jan 29-Feb 2 | 1. Vibrations and Waves | Good Vibrations, Pendulum, Transverse, Longitudinal |
| Feb 5-9 | 1. Sound | Media, Transmission, Speed of Sound |
| Feb 12-16 | 1. Musical Sounds | Music, Pitch, Loudness, Fourier Analysis |
| Feb 20-23 | 1. Electrostatics | Electricity, Forces, Charges, Coulomb’s Law |
| Feb 26- Mar 2 | 1. Electric Current | Flow, Voltage, Resistance, Ohm’s Law |
| Mar 5-Mar 9 | NA | Exam review, Exam |

**Quarter 4**

|  |  |  |
| --- | --- | --- |
| Week of: | Chapter | Topics |
| Mar 26-29 | 1. Magnetism | Magnetic Force, Poles, Fields, Electromagnets |
| Apr 2-6 | 1. Electromagnetic Induction | Induction, Faraday’s Law, Generators, AC Current |
| Apr 9-13 | 1. Properties of Light | Electromagnetic Waves, Transparent, Opaque |
| Apr 16-20 | 1. Color | Selective Reflection, Pigments, Mixing Colors |
| Apr 23-27 | 1. Reflection and Refraction | Reflection, Refraction, Plane Mirrors |
| Apr 30-May 4 | 1. Light Waves | Huygen’s Principle, Diffraction |
| May 7-11 | 1. Light Emission | Excitation, Emission Spectra, Incandescence |
| May 14-18 | 1. Light Quanta | Quantum Theory, Planck’s Constant |
| May 21-25 | NA | Exam review, Exam |