 **Hanover Heights Community School**

**2012-2013 Long Range Plan**

**Teacher: Matthew Patterson Grade: 8P Subject: Grade 8 Science**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Chapter** | **Category** | **Topic** |
| 1 |  |  | Introduction |
| 2 | One | Cells, Tissues, Organs, and Systems | Characteristics of Living Things |
| 3 |  |  | Learning About the Microscope |
| 4 |  |  | Plant and Animal Cells |
| 5 |  |  | *Lab*: Comparing Plant and Animal Cells |
| 6 |  |  | **Lab Report:** Comparing Plant and Animal Cells |
| 7 |  |  | Transporting Materials Across Cell Membranes |
| 8 |  |  | Osmosis |
| 9 |  |  | Observing Living Organisms in Pond Water |
| 10 |  |  | *Lab*: Are Bacteria Found in Milk? |
| 11 |  |  | The Need For Cell Division |
| 12 |  |  | Cell Division |
| 13 |  |  | Reproducing Asexually and Sexually |
| 14 |  |  | Water Movement in a Plant |
| 15 |  |  | *Lab*: Water Movement in a Plant |
| 16 |  |  | **Lab Report:** Water Movement in a Plant |
| 17 |  |  | Examining the Leaf |
| 18 |  |  | Flowers, Seeds, and Fruits |
| 19 |  |  | *Lab*: Environmental Factors |
| 20 |  |  | **Unit I Test** |
| 21 | Two | Fluids | The Nature of Fluids |
| 22 |  |  | *Lab*: Nature of Fluids |
| 23 |  |  | **Lab Report:** Nature of Fluids |
| 24 |  |  | How Fluids Flow |
| 25 |  |  | *Lab*: Flow Rate of Liquids and Gases |
| 26 |  |  | *Lab*: Comparing the Flow Rate of Different Liquids |
| 27 |  |  | *Lab*: Changing the Viscosity of a Liquid |
| 28 |  |  | Buoyancy |
| 29 |  |  | *Lab*: Floating One Gas on Another |
| 30 |  |  | **Lab Report:** Floating One Gas |
| 31 |  |  | Buoyant Force |
| 32 |  |  | *Lab*: Buoyant Forces |
| 33 |  |  | Density of Fluids |
| 34 |  |  | Measuring Density |
| 35 |  |  | Fluid Pressure |
| 36 |  |  | *Lab*: Fluid Pressure |
| 37 |  |  | Fluids at Work |
| 38 |  |  | Pumps for Hydraulic Systems |
| 39 |  |  | **Unit II Test** |
| 40 | Three | Optics | Light Energy and Its Sources |
| 41 |  |  | *Lab*: Watching Light Travel |
| 42 |  |  | Getting in Light’s Way / Describing Images |
| 43 |  |  | *Lab*: Reflecting Light Off a Plane Mirror |
| 44 |  |  | **Lab Report:** Reflecting Light Off a Plane Mirror |
| 45 |  |  | Reflecting Light Off Surfaces |
| 46 |  |  | *Lab*: Viewing Images in a Plane Mirror / Lab: Curved Mirrors |
| 47 |  |  | Using Curved Mirrors |
| 48 |  |  | *Lab*: The Refraction of Light |
| 49 |  |  | Refracting Light in Lenses |
| 50 |  |  | *Lab*: Investigating Lenses |
| 51 |  |  | The Human Eye / Visible Spectrum / Electromagnetic Spectrum |
| 52 |  |  | A Telescope for Every Wave |
| 53 |  |  | *Lab*: Mixing the Colours of Light |
| 54 |  |  | Additive Colour Mixing |
| 55 |  |  | Light Entertainment |
| 56 |  |  | *Lab*: Pigments and Filters for the Stage |
| 57 |  |  | **Lab Report:** Pigments and Filters for the Stage |
| 58 |  |  | Subtractive Colour Mixing |
| 59 |  |  | Solar Panels |
| 60 |  |  | **Unit III Test** |
| 61 | Four | Mechanical Advantage and Efficiency | Designing Machines |
| 62 |  |  | Levers: How They Work |
| 63 |  |  | *Lab*: Raise It Up |
| 64 |  |  | **Lab Report:** Raise It Up |
| 65 |  |  | Simulating Human Movement |
| 66 |  |  | Pulleys, Wheel and Axle, and Gears |
| 67 |  |  | Mechanisms in Giant Machines |
| 68 |  |  | Moving Efficiently / Friction and Mechanical Advantage |
| 69 |  |  | *Lab*: Moving the Couch |
| 70 |  |  | Testing Force and Endurance |
| 71 |  |  | *Lab*: Testing Shoes |
| 72 |  |  | **Lab Report:** Testing Shoes |
| 73 |  |  | Force, Area, and Pressure / Pressure on Liquids and Gases |
| 74 |  |  | *Lab*: Squeezing Liquids and Gases |
| 75 |  |  | Pressure in Fluid Systems |
| 76 |  |  | *Lab*: A Hydraulic Solution for a Pain in the Neck |
| 77 |  |  | A Student-Friendly Classroom |
| 78 |  |  | Designing for People with Special Needs |
| 79 |  |  | Mountain Bike or Road Bike? |
| 80 |  |  | The Life of a Product |
| 81 |  |  | A World Without Cars? |
| 82 |  |  | **Unit IV Test** |
| 83 | Five | Water Systems | Water in Our World |
| 84 |  |  | *Lab*: Comparing Salt Water and Fresh Water |
| 85 |  |  | The Water Cycle |
| 86 |  |  | The Power of Water |
| 87 |  |  | The Water Table |
| 88 |  |  | The Human Side of Water Systems / Water Treatment and Disposal |
| 89 |  |  | Floods: Water Untamed |
| 90 |  |  | Geological Features at Sea and on Land / Rivers of Ice |
| 91 |  |  | *Lab*: Rising and Falling |
| 92 |  |  | **Lab Report:** Rising and Falling |
| 93 |  |  | Currents |
| 94 |  |  | Water, Weather, and Climate |
| 95 |  |  | Waves |
| 96 |  |  | *Lab*: Investigating Tides |
| 97 |  |  | **Lab Report:** Investigating Tides |
| 98 |  |  | Exploring the Deep |
| 99 |  |  | Oil: Wealth from the Ocean Floor |
| 100 |  |  | Diversity |
| 101 |  |  | *Lab*: Productivity of Organisms |
| 102 |  |  | *Lab*: The Brine Shrimp Experiment |
| 103 |  |  | People, Resources, and Water Systems |
| 104 |  |  | **Unit V Test** |