**Chesapeake Math & IT Academy – MS North**

**Science Department**

**Grade 6**

1. **Earth Structure (Suggested Time Frame: Quarter 1)**

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| **Curriculum** | **List of Suggested Labs and Experiments (Wet & Dry)** | **Virtual** |
| 1. Introducing the Earth |  |  |
| * The Earth System | Parts of Earth’s System  What Forces Shape Earth? |  |
| * Earth’s Interior | How Do Scientists Find Out What’s Inside Earth?  Build a Model of Earth |  |
| * Convection and the Mantle | Tracing Heat Flow  How Can Heat Cause Motion in a Liquid?  Modeling Mantle Convection Currents (*Pre Lab directed Inquiry Open Inquiry)* |  |
| 1. Minerals and Rocks |  |  |
| * Properties of Minerals | Classifying Objects as Minerals  Identifying Minerals  Crystal Hands |  |
| * Classifying Rocks | How Do Rocks Compare?  Classify These Rocks |  |
| * Igneous Rocks | Liquid to Solid  How Do Igneous Rocks Form?  The Rocks Around Us |  |
| * Sedimentary Rocks | Acid Test for Rocks  How Does Pressure Affect Particles of Rock?  What Causes Layers? | Available on Pearson App |
|  | Testing Rock Flooring (*Directed Inquiry Open Inquiry)* |  |
| * Metamorphic Rocks | A Sequined Rock  How Do Grain Patterns Compare? |  |
| * The Rock Cycle | Recycling Rocks  Which Rock Came First? |  |
| 1. Plate Tectonics |  |  |
| * Drifting Continents | How Are Earth’s Continents Linked Together?  Moving the Continents |  |
| * Sea-Floor Spreading | Mid-Ocean Ridges  Reversing Poles  Modeling Sea-Floor Spreading (*Directed InquiryOpen Inquiry)* |  |
| * The Theory of Plate Tectonics | Plate Interactions  Mantle Convection Currents |  |
| 1. Earthquakes |  |  |
| * Forces in Earth’s Crust | Effects of Stress  Modeling Faults  Modeling Stress |  |
| * Earthquakes and Seismic Waves | Properties of Seismic Waves  Measuring Earthquakes  Finding the Epicenter (pre-lab/ *Directed InquiryOpen Inquiry)* |  |
| * Monitoring Earthquakes | How Can Seismic Waves Be Detected  Design a Seismograph  Earthquake Patterns |  |
| 1. Volcanoes |  |  |
| * Volcanoes and Plate Tectonics | Moving Volcanoes  Where Are Volcanoes Found on Earth’s Surface? |  |
| * Volcanic Eruptions | How Fast Do Liquids Flow?  Gelatin Volcanoes  Volcanic Stages |  |
| * Volcanic Landforms | How Do Volcanoes Change Land?  Identifying Volcanic Landforms  How Can Volcanic Activity Change Earth’s Surface? |  |

1. **Earth Surface (Suggested Time Frame: Quarter 2)**

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| **Curriculum** | **List of Suggested Labs and Experiments (Wet & Dry)** | **Virtual** |
| 1. Mapping Earth Surface |  |  |
| * Exploring Earth’s Surface | What Is the Land Like Around Your School?  Surface Features  Modeling Landforms |  |
| * Models of Earth | How Can You Flatten the Curved Earth?  2-D and 3-D Maps  Measuring in Degrees  Where in the World? | **Pearson App** |
| * Mapping Technology | Make a Pixel Picture  Reading Satellite Images |  |
| * Topographic Maps | Can a Map Show Relief?  A Map in a Pan |  |
| 1. WEATHERING & Soil |  |  |
| * Rocks and Weathering | How Fast Can It Fizz?  Freezing and Thawing  Rusting Away  It’s All on the Surface |  |
| * How Soil Forms | Investigating Soils and Drainage  The Contents of Soil |  |
| * Soil Conservation | How Can You Keep Soil From Washing Away?  Soil Conservation |  |
| 1. Erosion & Deposition |  |  |
| * Mass Movement | How Does Gravity Affect Materials on a Slope?  Weathering and Erosion  Sand Hills |  |
| * Water Erosion | How Does Moving Water Wear Away Rocks?  Raindrops Falling  Erosion Cube |  |
| * Glacial Erosion | How Do Glaciers Change the Land?  Surging Glaciers  Modeling Valleys |  |
| * Wave Erosion | What Is Sand Made Of?  Shaping a Coastline |  |
| * Wind Erosion | How Does Moving Air Affect Sediment?  Desert Pavement |  |
| 1. A trip through geologic times |  |  |
| * Fossils | Sweet Fossils  Modeling Trace Fossils  Modeling the Fossil Record |  |
| * The Relative Age of Rocks | Which Layer Is the Oldest?  Exploring Geologic Time Through Core Samples (pre lab/ *Directed Inquiry Open Inquiry)*  How Did It Form (rock)? |  |
| * Radioactive Dating | How old it is/ |  |
| * The Geologic Time Scale | This Is Your Life!  Going Back in Time |  |
| * Early Earth | How Could Planet Earth Form in Space?  Learning From Fossils |  |
| * Eras of Earth’s History | Graphing the Fossil Record  Modeling an Asteroid Impact  Cenozoic Timeline |  |

1. **Water and Atmosphere (Suggested Time Frame: Quarter 3)**

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| **Curriculum** | **List of Suggested Labs and Experiments (Wet & Dry)** | **Virtual** |
| 1. Fresh water |  |  |
| * Water on Earth | Where does water come from?  Water, Water, Everywhere (Pre lab/ *Directed Inquiry Open Inquiry)*  Water on Earth  Water From Trees |  |
| * Surface Water | What Is a Watershed?  Modeling How a Lake Forms  How Can Algal Growth Affect Pond Life? |  |
| * Water Underground | Where Does the Water Go?  Soil Percolation  An Artesian Well |  |
| * Wetland Environments | Describing Wetlands  A Natural Filter |  |
| 1. Oceans |  |  |
| * Exploring the Ocean | Ocean Conditions  The Shape of the Ocean Floor |  |
| * Wave Action | Making Waves  Modeling Currents |  |
| * Currents and Climate | Modeling Ocean Currents (Pre lab/ *Directed Inquiry Open Inquiry)*  Deep Currents |  |
| * Ocean Habitats | How Complex Are Ocean Feeding Relationships?  Designing an Organism |  |
| 1. The Atmosphere |  |  |
| * The Air Around You | How Long Will the Candle Burn?  Breathe In, Breathe Out  What Is the Source of Earth’s Energy? |  |
| * Air Pressure | Does Air Have Mass?  Properties of Air  Soda Bottle Barometer  Effects of Altitude on the Atmosphere |  |
| * Layers of the Atmosphere | Layers of the Atmosphere  Calculating Temperature Changes |  |
| * Energy in Earth’s Atmosphere | Does a Plastic Bag Trap Heat?  How Does the Sun’s Energy Reach Earth?  Heating Earth’s Surface (Pre lab/ *Directed Inquiry Open Inquiry)* |  |
| * Heat Transfer | What Happens When Air Is Heated?  Measuring Temperature  Temperature and Height |  |
| * Winds | Does the Wind Turn?  Build a Wind Vane  Modeling Global Wind Belts |  |
| 1. Weather |  |  |
| * Water in the Atmosphere | Water in the Air  Measuring to Find the Dew Point |  |
| * Clouds | How Clouds Form  How Does Fog Form?  Identifying Clouds |  |
| * Precipitation | How Can You Make Hail?  Types of Precipitation  Floods and Droughts |  |
| * Air Masses | How Do Fluids of Different Densities Move?  Tracking Air Masses  Weather Fronts  Cyclones and Anticyclones |  |
| * Storms | Can You Make a Tornado?  Where Do Hurricanes Come From?  Storm Safety |  |
| * Predicting the Weather | Predicting Weather  Modeling Weather Satellites  Reading a Weather Map (Pre lab/ *Directed Inquiry Open Inquiry)* |  |
| 1. CLIMATE & Climate Change |  |  |
| * What Causes Climate? | How Does Latitude Affect Climate?  Sunny Rays and Angles (Pre lab/ *Directed Inquiry Open Inquiry)*  Inferring United States Precipitation Patterns |  |
| * Climate Regions | How Do Climates Differ?  Classifying Climates  Making and Interpreting a Climograph |  |
| * Changes in Climate | Climate Clues  Earth’s Movement and Climate |  |
| * Human Activities and Climate Change | What Is the Greenhouse Effect?  Greenhouse Gases and Global Warming |  |

1. **Astronomy & Space (Suggested Time Frame: Quarter 4)**

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| **Curriculum** | **List of Suggested Labs and Experiments (Wet & Dry)** | **Virtual** |
| 1. Earth, Moon & Sun |  |  |
| * The Sky From Earth | Observing the Night Sky  Watching the Skies |  |
| * Earth in Space | What Causes Day and Night?  Sun Shadows  Reasons for the Seasons (Pre lab/ *Directed Inquiry Open Inquiry)* |  |
| * Gravity and Motion | What’s Doing the Pulling?  Around and Around We Go |  |
| * Phases and Eclipses | How Does the Moon Move?  Moon Phases  Eclipses |  |
| * Tides | Modeling the Moon’s Pull of Gravity |  |
| * Earth’s Moon | Moonwatching |  |
| 1. Exploring Space |  |  |
| * The Science of Rockets | History of Rockets  Be a Rocket Scientist: Modeling Multistage Rockets |  |
| * Modeling Multistage Rockets | Humans in Space  Which Tool Would You Use in Space?  Remote Control |  |
| * Using Space Science on Earth | What Do You Need to Survive in Space?  Investigation: Space Spinoffs  Useful Satellites |  |
| 1. The solar System | Going Around in Circles  A Loopy Ellipse |  |
| * Models of the Solar System | Going Around in Circles  A Loopy Ellipse |  |
| * Introducing the Solar System | Speeding Around the Sun  Clumping Planets |  |
| * The Sun | Layers of the Sun  Viewing Sunspots |  |
| * The Inner Planets | Greenhouse Effect |  |
| * The Outer Planets | Density Mystery  Make a Model of Saturn |  |
| * Comets, Asteroids, and Meteoroids | Changing Orbits |  |
| 1. Star, Galaxies & the Universe |  |  |
| * Telescopes | Observing a Continuous Spectrum  Design and Build a Telescope |  |
| * The Scale of the Universe | How Far Is That Star?  Measuring the Universe |  |
| * Characteristics of Stars | Star Bright  Interpreting the H-R Diagram |  |
| * Lives of Stars | Lives of Stars  What Determines How Long Stars Live?  Death of a Star |  |
| * Star Systems and Galaxies | Why Does the Milky Way Look Hazy?  Planets Around Other Stars  A Spiral Galaxy |  |
| * The Expanding Universe | How Does the Universe Expand?  The Future of the Universe |  |