**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 SystemWhat 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 FlowHow Can Heat Cause Motion in a Liquid?Modeling Mantle ConvectionCurrents (*Pre Lab directed Inquiry Open Inquiry)* |  |
| 1. Minerals and Rocks
 |  |  |
| * Properties of Minerals
 | Classifying Objects as MineralsIdentifying MineralsCrystal Hands |  |
| * Classifying Rocks
 | How Do Rocks Compare?Classify These Rocks |  |
| * Igneous Rocks
 | Liquid to SolidHow Do Igneous Rocks Form?The Rocks Around Us |  |
| * Sedimentary Rocks
 | Acid Test for RocksHow Does Pressure Affect Particles of Rock?What Causes Layers? | Available on Pearson App |
|  | Testing Rock Flooring (*Directed Inquiry Open Inquiry)* |  |
| * Metamorphic Rocks
 | A Sequined RockHow Do Grain Patterns Compare? |  |
| * The Rock Cycle
 | Recycling RocksWhich Rock Came First? |  |
| 1. Plate Tectonics
 |  |  |
| * Drifting Continents
 | How Are Earth’s Continents Linked Together?Moving the Continents |  |
| * Sea-Floor Spreading
 | Mid-Ocean RidgesReversing PolesModeling Sea-Floor Spreading (*Directed InquiryOpen Inquiry)* |  |
| * The Theory of Plate Tectonics
 | Plate InteractionsMantle Convection Currents |  |
| 1. Earthquakes
 |  |  |
| * Forces in Earth’s Crust
 | Effects of StressModeling FaultsModeling Stress |  |
| * Earthquakes and Seismic Waves
 | Properties of Seismic WavesMeasuring EarthquakesFinding the Epicenter (pre-lab/ *Directed InquiryOpen Inquiry)* |  |
| * Monitoring Earthquakes
 | How Can Seismic Waves Be DetectedDesign a SeismographEarthquake Patterns |  |
| 1. Volcanoes
 |  |  |
| * Volcanoes and Plate Tectonics
 | Moving VolcanoesWhere Are Volcanoes Found on Earth’s Surface? |  |
| * Volcanic Eruptions
 | How Fast Do Liquids Flow?Gelatin VolcanoesVolcanic Stages |  |
| * Volcanic Landforms
 | How Do Volcanoes Change Land?Identifying Volcanic LandformsHow 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 FeaturesModeling Landforms |  |
| * Models of Earth
 | How Can You Flatten the Curved Earth?2-D and 3-D MapsMeasuring in DegreesWhere in the World? | **Pearson App** |
| * Mapping Technology
 | Make a Pixel PictureReading 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 ThawingRusting AwayIt’s All on the Surface |  |
| * How Soil Forms
 | Investigating Soils and DrainageThe 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 ErosionSand Hills |  |
| * Water Erosion
 | How Does Moving Water Wear Away Rocks?Raindrops FallingErosion Cube |  |
| * Glacial Erosion
 | How Do Glaciers Change the Land?Surging GlaciersModeling 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 FossilsModeling Trace FossilsModeling 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 RecordModeling an Asteroid ImpactCenozoic 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 EarthWater From Trees |  |
| * Surface Water
 | What Is a Watershed?Modeling How a Lake FormsHow Can Algal Growth Affect Pond Life? |  |
| * Water Underground
 | Where Does the Water Go?Soil PercolationAn Artesian Well |  |
| * Wetland Environments
 | Describing WetlandsA Natural Filter |  |
| 1. Oceans
 |  |  |
| * Exploring the Ocean
 | Ocean ConditionsThe Shape of the Ocean Floor |  |
| * Wave Action
 | Making WavesModeling 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 OutWhat Is the Source of Earth’s Energy? |  |
| * Air Pressure
 | Does Air Have Mass?Properties of AirSoda Bottle BarometerEffects of Altitude on the Atmosphere |  |
| * Layers of the Atmosphere
 | Layers of the AtmosphereCalculating 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 TemperatureTemperature and Height |  |
| * Winds
 | Does the Wind Turn?Build a Wind VaneModeling Global Wind Belts |  |
| 1. Weather
 |  |  |
| * Water in the Atmosphere
 | Water in the AirMeasuring to Find the Dew Point |  |
| * Clouds
 | How Clouds FormHow Does Fog Form?Identifying Clouds |  |
| * Precipitation
 | How Can You Make Hail?Types of PrecipitationFloods and Droughts |  |
| * Air Masses
 | How Do Fluids of Different Densities Move?Tracking Air MassesWeather FrontsCyclones and Anticyclones |  |
| * Storms
 | Can You Make a Tornado?Where Do Hurricanes Come From?Storm Safety |  |
| * Predicting the Weather
 | Predicting WeatherModeling Weather SatellitesReading 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 ClimatesMaking and Interpreting a Climograph |  |
| * Changes in Climate
 | Climate CluesEarth’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 SkyWatching the Skies |  |
| * Earth in Space
 | What Causes Day and Night?Sun ShadowsReasons 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 PhasesEclipses |  |
| * Tides
 | Modeling the Moon’s Pull of Gravity |  |
| * Earth’s Moon
 | Moonwatching |  |
| 1. Exploring Space
 |  |  |
| * The Science of Rockets
 | History of RocketsBe a Rocket Scientist: Modeling Multistage Rockets |  |
| * Modeling Multistage Rockets
 | Humans in SpaceWhich Tool Would You Use in Space?Remote Control |  |
| * Using Space Science on Earth
 | What Do You Need to Survive in Space?Investigation: Space SpinoffsUseful Satellites |  |
| 1. The solar System
 | Going Around in CirclesA Loopy Ellipse |  |
| * Models of the Solar System
 | Going Around in CirclesA Loopy Ellipse |  |
| * Introducing the Solar System
 | Speeding Around the SunClumping Planets |  |
| * The Sun
 | Layers of the SunViewing Sunspots |  |
| * The Inner Planets
 | Greenhouse Effect |  |
| * The Outer Planets
 | Density MysteryMake a Model of Saturn |  |
| * Comets, Asteroids, and Meteoroids
 | Changing Orbits |  |
| 1. Star, Galaxies & the Universe
 |  |  |
| * Telescopes
 | Observing a Continuous SpectrumDesign and Build a Telescope |  |
| * The Scale of the Universe
 | How Far Is That Star?Measuring the Universe |  |
| * Characteristics of Stars
 | Star BrightInterpreting the H-R Diagram |  |
| * Lives of Stars
 | Lives of StarsWhat Determines How Long Stars Live?Death of a Star |  |
| * Star Systems and Galaxies
 | Why Does the Milky Way Look Hazy?Planets Around Other StarsA Spiral Galaxy |  |
| * The Expanding Universe
 | How Does the Universe Expand?The Future of the Universe |  |