**8TH GRADE SCOPE AND SEQUENCE: SCIENCE/FOSTER**

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| Unit | Length | Unifying Themes | Topics | Activities | Standards |
| Nature of Science | 3-4 Blocks | EvolutionScale | What is Science?Observations and InferencesInquiry Methods | ZoomHide the CookieThe Earth is FlatBalloon RocketScience Surprises |  |
| Measurement | 4-5 Blocks | ScaleMatter and Energy | The Metric SystemLength, Width, AreaVolume (Regular/Irregular)DensityTemperature | Mass, Weight, Density, Volume Measurement LabsTemperature ConversionsBuild a ThermometerSilo Lab w/Cereal |  |
| Properties of Matter |  | ScaleMatter and EnergyInteractions | Physical vs Chemical PropertiesMassWeightVolumeDensityConductivityMalleability | Mystery BagsGummy Worm Lab/Twizzler Lab (culminating project)Conduction/Insulation (Phet Lab) |  |
| States of Matter |  | ScaleMatter and EnergyInteractions | Particle Theory of MatterMatter in MotionPhase ChangesHeat/EnergyGraphing Phase Changes | Newspaper/Ruler (Demo)Gas Displacement: Does Air Have Volume Lab?Modeling/Diagramming States of MatterPhET States of Matter (online)Surface Tension (penny) and Viscosity LabViscosity Races Temperature- ViscosityBoiling Point of Water LabGas Laws (online Phet simulation)Speed InflationEmpty the bottle racingSolar Bag3 Hole Bottle (inquiry lab)Dry Ice/Sublimation (outside) |  |
| Elements, Compounds, Mixtures |  | ScaleMatter and EnergyForm and Function | ElementsCompoundsMixtures | M&M GraphingSeparating MixturesFiltrationDistillation of Cherry CokeSolution RacesFlame Test Labs |  |
| Atomic Theory |  | EvolutionScaleMatter and EnergyForm and FunctionModels | History of Atomic TheoryStructure of the AtomPeriodic TablePeriodic Trends | Atomic Theory TimelineAtomic Modeling PhET Build an AtomPeriodicity Simulation |  |
| Chemical Reactions | 12-13 Blocks | Matter and EnergyInteractionsModels | Chemical BondingFormulas and EquationsConservation of MassChemical ReactionsStoichiometry | Drawing Bohr and Lewis ModelsElephant Toothpaste LabChemical Reaction in a BagDehydration of SugarPenny DisplacementBalancing Simple Equations Controlling amount of Products Catalyst/Enzyme Lab |  |
| Kinematics | 10-11 Blocks | Matter and EnergyInteractions | Distance/DisplacementSpeed/VelocityAccelerationGraphing Motion | SmootsMapping/Graphing Distance and DisplacementWho's the Fastest? LabPhET Maze Game |  |
|  Forces |  | Matter and EnergyInteractions | GravityFrictionNewton's LawsKinetic and Potential Energy | CD HovercraftFriction LabDrop LabPhet Roller CoasterPendulum LabPhET moving manPhET The RampPhET Energy Skate Park |  |
| Electricity | 9-10 Blocks | EvolutionScaleMatter and EnergyModels | ElectrostaticsCurrent and VoltageOhm's LawCircuitsElectromagnetism | Squishy CircuitsMake a batteryVan der Graaf GeneratorPhET Balloons and Static ElectricityPhET John TravoltagePhET Ohm's LawParallel and Series CircuitsPhET Circuit Construction KitMaking a SpeakerMaking an Electromagnet |  |
| Sound and Light | 9-10 Blocks | EvolutionMatter and EnergyModels | Electromagnetic SpectrumElectromagnetic WavesReflectionRefractionMechanical WavesColor Spectrum | Mirror, Mirror, on the WallSpectroscopyUV/IR Prism LabPhET Color VisionDisappearing glass rod refractionWater MagnifierWave TankChromatographyWhat's in a Black Line? |  |