

8th Grade Science Labs Aligned to Mississippi Standards

Life Science Labs (Aligned to L.8.2A–C, L.8.4A–B)

- • DNA extraction from bananas
- • Mitosis modeling with beads
- • Meiosis simulation with cards
- • Mendelian pea plant traits
- • Punnett square corn kernels
- • Bacterial growth on agar – asexual reproduction
- • Genetic mutation simulations
- • Evolution of peppered moth colors
- • Fossil record and adaptation analysis
- • Bird beak adaptations with different tools
- • Camouflage experiments with clay models
- • Selective breeding simulation
- • Trait variation study in classroom traits (tongue rolling)
- • Cross-pollination with flowers
- • Genetic trait surveys in families
- • Variation in snail shell color and predation
- • Microbe culture via asexual reproduction
- • Adaptation scavenger hunt outdoors
- • Comparative anatomy of limbs
- • Artificial selection—fruitfly wing length study

Physical Science Labs (Aligned to P.8.6)

- • Inclined plane speed experiment
- • Pendulum period analysis
- • Newton's second law with dynamics carts
- • Collisions and conservation of momentum
- • Friction measurement on different surfaces
- • Spring constant via Hooke's Law
- • Roller coaster energy transformations
- • Balloon rocket propulsion and Newton's third law
- • Building simple electrical circuits
- • Graphing speed-time of toy cars
- • Rube Goldberg energy transfer chain
- • Energy efficiency of different bulbs

- • Solar oven heat capture
- • Wind turbine power output
- • Heat conduction through metals
- • Insulator effectiveness of materials
- • Thermal expansion of liquids
- • Sound wave frequency experiments
- • Light refraction & prisms
- • Electromagnet strength variation

Earth's Structure & History (Aligned to E.8.7)

- • Plate tectonics with foam
- • Build a volcano and erupt
- • Rock cycle modeling
- • Mineral hardness test
- • Fossil formation simulation
- • Stratification with colored sediments
- • Earthquake wave experiment
- • Fault line tracing
- • Core composition layering
- • Identify sedimentary vs igneous rock
- • Soil erosion with rainfall simulation
- • Tsunami wave model
- • Model of continental drift
- • Volcano chemical reactions
- • Rock identification stations
- • Core drilling simulation
- • Magnetic striping of sea floor
- • Bathymetry mapping
- • Dating rock layers by index fossils
- • Mineral streak testing

Earth Systems & Cycles (Aligned to E.8.9A–B)

- • Water cycle terrarium
- • Evaporation rate with colors and heat
- • Condensation on cold surface
- • Map weather fronts
- • Model atmospheric convection
- • Carbon cycle with plant photosynthesis
- • Simulate greenhouse effect
- • Study wind patterns

- • Build barometer
- • Build rain gauge
- • Soil filtration experiment
- • Observe irrigation systems
- • Nutrient cycle in compost
- • Earthquake seismograph model
- • Cloud formation in jar
- • Soil horizons excavation
- • Stream flow erosion
- • Aquifer model with percolation
- • pH effect on aquatic life
- • Seasonal daylight measurement

Earth's Resources (Aligned to E.8.10)

- • Renewable vs nonrenewable resources chart
- • Fuel combustion heat test
- • Oil spill clean-up simulation
- • Alternative energy windmill model
- • Solar panel voltage measurement
- • Water purification methods
- • Recycling paper experiment
- • Sustainable forestry with tree growth rate
- • Acid rain effect on rocks
- • Trace mineral content in water
- • Landfill decomposition rate
- • Gas emissions monitor plant roots
- • Evaluate biomass fuel
- • Measure water footprint
- • Test potash in soil
- • Create bio-plastic
- • Evaluate fertilizer runoff
- • Measure methane from compost
- • Compare energy yield of crops
- • Test soil for nutrients