











**Correlation to Academic Standards**  
**National: Next Generation Science Standards**  
**Middle School (Grades 6 – 8)**

**Physical Sciences**

***MS-PS1 – Matter and Its Interactions***


*MS-PS1.A – Structure and Properties of Matter*

-  Boat Builder
-  Body Fluid Dilution
-  Buckyballs
-  Chemical Mixer
-  Desalination
-  Fluid Density
-  Heal Thyself
-  Mystery Powder
-  Solutions
-  Bridge Metal

*MS-PS1.B – Chemical Reactions*





-  Betavoltaics
-  Buckyballs
-  Calorimetry
-  Electric Potato
-  Map Coloring
-  Super Cells

*MS-PS1.C – Nuclear Processes*






-  Betavoltaics

***MS-PS2 – Motion and Stability: Forces and Interactions***

*MS-PS2.A – Forces and Motion*





-  Acceleration
-  Boat Builder
-  Push-A-Cart
-  Trench Dive

*MS-PS2.B – Types of Interactions*







-  Dronopter
-  Space Gravity
-  Water Rockets
-  Wind Tunnel
-  Bridge Metal

***MS-PS3 – Energy***

*MS-PS3.A – Definitions of Energy*

-  Calorimetry
-  Electrical Appliances
-  Machines
-  Solar Collector

*MS-PS3.D – Energy in Chemical Processes...*

-  Betavoltaics
-  Bright Ideas
-  Charge
-  Concrete Structures
-  Desalination
-  Negative Cement

*MS-PS3.B – Conservation of Energy and Energy Transfer*



-  Betavoltaics
-  Bright Ideas
-  Electric Power
-  Energy Downer
-  Energy Land
-  Green Building
-  Insulation
-  Solar Cells
-  Wind Power

***MS-PS4 – Waves and Their Applications...***









*MS-PS4.A – Wave Properties*

-  Modular Synthesizer








*MS-PS4.B – Electromagnetic Radiation*

-  Bright Ideas
-  Spectroscopy

*MS-PS4.C – Information Technologies and...*

-  Agent Impact
-  Bomb ProBot
-  Buckyballs
-  Data Visualization
-  Mass Spectrometry
-  Modular Synthesizer
-  Ship Tracking
-  Spectroscopy





*MS-PS3.C – Relationship Between Energy and Forces*

-  Boat Builder
-  Car Crash
-  Dronopter
-  Energy Downer
-  Explosion Shield
-  Machines
-  Water Rockets







## **Life Sciences**

### ***MS-LS1 – From Molecules to Organisms: Structure...***


#### ***MS-LS1.A – Structure and Function***

-  Bacteria
-  Gram Staining
-  Platelets
-  Protista

#### ***MS-LS1.B – Growth and Development of Organisms***

-  Crop Protection
-  E. coli Detection
-  Egg Sampling
-  Fish Experiment
-  Flea Experiment
-  Flu Transmission
-  Funky Food
-  Influenza
-  Manatee Strike Zone
-  Pool Bacteria
-  Rift Valley Fever
-  Smallpox

#### ***MS-LS1.C – Organization for Matter and Energy Flow in Organisms***




-  Trophic Tower

#### ***MS-LS1.D – Information Processing***

-  Face Recognition
-  Rosetta Phone

### ***MS-LS2 – Ecosystems, Interactions, Energy, and Dynamics***






#### ***MS-LS2.A – Independent Relationships in Ecosystems***

-  Crop Protection
-  Fish Experiment
-  Water Quality


#### ***MS-LS2.B – Cycles of Matter and Energy Transfers in Ecosystems***

-  Bacteria Miner
-  Desalination
-  Sunny Shelter
-  Transpiration
-  Trophic Tower

#### ***MS-LS2.C – Ecosystems Dynamics, Functioning, and Resilience***


-  Crop Protection
-  Data Analysis
-  Manatee Strike Zone
-  Nitrogen Cycle
-  Water Quality

#### ***MS-LS2.D – Social Interactions and Group Behavior***

-  Face Recognition
-  Microexpressions

### ***MS-LS3 – Heredity: Inheritance and Variations...***

#### ***MS-LS3.A – Inheritance of Traits***





-  DNA Fingerprinting

#### ***MS-LS3.B – Variations of Traits***

-  Face Recognition
-  Fingerprinting

### ***MS-LS4 – Biological Evolution: Unity and...***




#### ***MS-LS4.A – Evidence of Common Ancestry and...***

-  DNA Fingerprinting
-  Face Recognition
-  Fingerprinting
-  Microexpressions

## **Earth and Space Sciences**

### ***MS-ESS1 – Earth’s Place in the Universe***

#### ***MS-ESS1.A – The Universe and its Stars***




-  Space Gravity
-  Bot Miner
-  Galaxy Experiment

### ***MS-ESS2 – Earth’s Systems***






#### ***MS-ESS2.A – Earth Materials and Systems***

-  Erosion Control

#### ***MS-ESS2.C – The Role of Water in Earth’s Surface Processes***

-  Erosion Control
-  Scouring
-  Storm Surge

#### ***MS-ESS2.D – Weather and Climate***











-  Data Analytics
-  Storm Surge
-  Sunny Shelter
-  Tornado
-  Weather

### ***MS-ESS3 – Earth and Human Activity***









#### ***MS-ESS3.A – Natural Resources***

-  Bacteria Miner
-  Bot Miner
-  Crop Protection
-  Desalination
-  Fisheries
-  Fleet Manager
-  Fuel Cells
-  Solar Cells
-  Sun Banking
-  Wind Power

#### ***MS-ESS3.B – Natural Hazards***

-  Data Analytics
-  Emergency Response
-  Erosion Control
-  Evacuation Planning
-  Scouring
-  Storm Surge
-  Supply Line
-  Survivor
-  Tornado
-  Trouble Incorporated

#### ***MS-ESS3.C – Human Impacts on Earth Systems***

-  Crop Protection
-  Data Analysis
-  Energy Land
-  Fisheries
-  Green Building
-  Insulation
-  Unmanned Surface Vehicle
-  Water Quality














#### ***MS-ESS3.D – Global Climate Change***

-  Fleet Manager
-  Weather
















## **Engineering, Technology, and Applications of Science**

### ***MS-ETS1 – Engineering Design***


















#### ***MS-ETS1.A – Defining and Delimiting an Engineering Problem***

-  Agent Impact
-  Bot Miner
-  Bridge Metal
-  Bridge Out
-  Electrical Appliances
-  Energy Downer
-  Fuel Cells
-  Heal Thyself
-  Mental Rotations
-  PSI Tool
-  Stats Entertainment
-  Supply Line
-  Trench Attack

#### ***MS-ETS1.B – Developing Possible Solutions***

-  Bacteria Miner
-  Bomb ProBot
-  Building Security
-  Dronopter
-  Emergency Response
-  Erosion Control
-  Insulation
-  Manatee Strike Zone
-  Map Coloring
-  Mathematical Methods
-  Rosetta Phone
-  Social Networking
-  Solar Collector
-  Sun Banking
-  Survivor

#### ***MS-ETS1.C – Optimizing the Design Solution***

-  Boat Builder
-  Bright Ideas
-  Concrete Structures
-  Electric Power
-  Energy Land
-  Evacuation Planning
-  Explosion Shield
-  Fisheries
-  Fleet Manager
-  Green Building
-  Negative Cement
-  Scouring
-  Solar Cells
-  Sunny Shelter
-  Super Cells
-  Wind Tunnel
-  Zero Sum Security