

Waterford Township School District Science Matrix

	PHYSICAL	LIFE	EARTH & SPACE
Kindergarten	<p style="text-align: center;">Push, Pull Go</p> <ul style="list-style-type: none"> ● Forces and motion ● Types of Interactions ● Relationship between energy and forces 	<p style="text-align: center;">Living Things and Their Needs</p> <ul style="list-style-type: none"> ● Living things and what they need to survive ● Living/non living things ● Life cycle of a butterfly ● Life cycle of a seed ● Identify different habitats and what animals may live in each ● Human impact on the environment 	<p style="text-align: center;">Weather and Sky</p> <ul style="list-style-type: none"> ● Describing temperature ● Observe and record weather to discover patterns and compare seasons ● Identify the four seasons and characteristics of each ● Use weather forecast to choose appropriate dress
Grade 1	<p style="text-align: center;">Light and Sound Waves</p> <ul style="list-style-type: none"> ● Light is needed to see ● Light moves in one direction ● Transparent, Translucent, Opaque ● Reflective Object ● Vibrations create sound ● Sound waves and how sound moves through air. 	<p style="text-align: center;">Exploring Organisms</p> <ul style="list-style-type: none"> ● Difference between living and nonliving things ● Needs of living things ● Relationships between parents and offspring ● Offsprings dependency on Parents ● Comparing and Contrasting Plant and Animal offsprings with parents. ● Plant and Animal 	<p style="text-align: center;">Sky Watchers</p> <ul style="list-style-type: none"> ● Observations of what you can see in day and night sky, comparisons ● Rotation of Earth and how it creates Day and Night ● Revolution of the Earth and all planets ● Earth is tilted on its axis, creation of seasons ● Movement of the Sun and shadow changes.

		<p>Structures</p> <ul style="list-style-type: none"> Adaptations of Animals and how specific body parts do specific jobs. 	<ul style="list-style-type: none"> Moon and Phases, different patterns per month always repeats Rotation of Moon around Earth Position of different objects in space
Grade 2	<p>Matter</p> <ul style="list-style-type: none"> Students are introduced to the three states of matter - solids, liquids, and gases. Describing matter Heating matter Physical change vs. chemical change Mixtures Fluidity and Viscosity 	<p>Ecosystem Diversity</p> <ul style="list-style-type: none"> Living/nonliving 7 Unique Habitats Plant Growth Photosynthesis Survival and Adaptations Aquatic/Terrestrial Habitats Human impact on habitats 	<p>Earth Materials</p> <ul style="list-style-type: none"> Weathering Erosion Landslides Landforms Creation of Canyons Rock, Soil, Sand Properties of Soil Bodies of Water Water Cycle
Grade 3	<p>Forces and Interactions</p> <ul style="list-style-type: none"> Balanced Forces - Gravity, Newton's 3rd law of motion Unbalanced Forces - Law of inertia, friction Changes in Motion - Force and mass impact motion Magnetism and Electricity - Attract, repel, positive/negative 	<p>Life in Ecosystems</p> <ul style="list-style-type: none"> Observing life - Butterfly larva, grow a plant, living in a group vs. solitary Inheritance and Variation of Traits - compare human traits, inherited traits vs acquired traits, variations between same species 	<p>Weather and Climate Patterns</p> <ul style="list-style-type: none"> What is Weather? -Observe weather and interpret weather clues, investigate tools that measure rainfall, wind, and temperature Weather Data - mathematical formula for averages, daily and weekly averages for

	<p>charges</p> <ul style="list-style-type: none"> • Magnetic Solutions - use magnets to solve a problem 	<ul style="list-style-type: none"> • Adaptations - beak adaptations, predator-prey relationships • Environmental Influences • Learning From Fossils - organisms change over time, environmental changes over time lead to change in adaptations or extinction 	<p>temperatures, determine local precipitation, create weather reports</p> <ul style="list-style-type: none"> • Weather Patterns - analyze and interpret data, compare predictions to results • Weather vs. Climate - 5 parts of Earth's climate system, investigate climate system • Hazardous Weather - heavy rain, thunderstorms, lightning, tornadoes, hurricanes, flooding, snowstorms • Impact of Weather
Grade 4	<p>Energy</p> <ul style="list-style-type: none"> • Tracing the flow of energy, • Potential vs. kinetic • How energy is converted from one form to another (transferred) • Forms explored - sound, light, heat and electric currents • How energy moves in waves 	<p>Plant and Animal Structures</p> <ul style="list-style-type: none"> • How structures allow plants & animals to survive, grow and reproduce • Animal systems - external structures • Dissect internal system (squid - by student) • Plant Structures - seed dissection (radish - by student) Plant dissection - celery, 	<p>Changing Earth</p> <ul style="list-style-type: none"> • Distinct features of earth • Earthquakes, • Volcanoes • plate movement, • Earth's layers • Rock formations • Weathering and Erosion • Deposited sediment

	<ul style="list-style-type: none"> Alternative, renewable forms of energy 	<ul style="list-style-type: none"> carnation - by student) Brain structure - dissection of sheep brain - by teacher Eye structure - cow eye dissection - by teacher Build a 3D model of eye 	
Grade 5	<p>Structures & Properties of Matter</p> <ul style="list-style-type: none"> Differentiate properties of solids, liquids and gases Mass & volume Evaluate solutions of solid and liquid matter Chemical changes Physical properties of matter <ul style="list-style-type: none"> Buoyancy Hardness magnetism Viscosity Physical and chemical changes 	<p>Matter & Energy</p> <ul style="list-style-type: none"> Living and non-living things Relationship between sun & the cycle of nitrogen in the environment Chemical reactions to iodine in a plant. Classifying organisms Patterns between food & energy Flow of energy in ecosystem Decomposers Food chain pyramid Cause and effects of human behavior and environment. 	<p>Earth & Space Systems</p> <ul style="list-style-type: none"> Distance from Earth to stars Size and shape of Earth Rotation of Earth
	EARTH & SPACE	EARTH & SPACE	EARTH & SPACE
Grade 6	Weather and Climate Systems	<p>Earth's Dynamics Systems</p> <ul style="list-style-type: none"> Earthquakes 	<p>Space Systems Exploration</p> <ul style="list-style-type: none"> Calendar in the Sky:

	<ul style="list-style-type: none"> ● Warming/cooling of Earth's surface ● Water cycle, Clouds, Air Masses ● Wind/Air Pressure ● Ocean Currents ● Severe Storms ● Predicting Weather ● Tracking Storms ● Intro. To Climate ● Climate Change Research ● Impact of Climate Change 	<ul style="list-style-type: none"> ● Analyzing Earthquake Data ● Plate Movement ● Cycling Matter and Energy ● Volcanoes: Build Up and Eruption ● Changing Earth's Surface ● Fossil Records ● Distribution of Resources on Earth ● Evidence of a Dynamic Earth 	<p>Introducing the Sun-Moon-Earth</p> <ul style="list-style-type: none"> ● Investigating Lunar Phases ● Pulling Water: Gravity and Tides ● Solar and Lunar Eclipses ● Reasons for Seasons: Earth's Tilt ● Stellar Proportions: Modeling the Solar System ● <u>Exploration Activity: Jupiter and its Moon</u> ● Gravity: Bending Space Time ● Gravity's Role in the Universe ● Geologists in Space ● Challenges of Space Exploration
--	--	---	---