

Middle School (Grades 7-8) Thematic Project-Based Curriculum

School-Wide Theme: Connections

Investigations: How is Life on Earth Interconnected?

Each quarter has a unique thematic-based project that answers this investigation with different guiding questions.

Quarter One & Two: Guiding Questions

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Café
How do plants grow & develop?	What characteristics do living organisms have in common?	How are living organisms grouped and categorized?	What are the elements of Narratives?	What are the different elements of plot in literature?

Topics

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Café
<ul style="list-style-type: none"> • Germination • Growth & Development • Flowering • Pollination • Fertilization • Scientific Inquiry 	<ul style="list-style-type: none"> • Body Structure & Cells • Reproduction • Metabolization of energy • Adaptations • Responses to Stimuli 	<ul style="list-style-type: none"> • Dichotomous Key • Taxonomy (kingdom, phylum, class, species, etc.) 	<ul style="list-style-type: none"> • Showing vs. telling (Descriptive writing) • Character Development • Dialogue • Plot 	<ul style="list-style-type: none"> • Discussion question (themes/motifs) • Diction (vocabulary/comprehension) • Connections to reading/infering • Reporting (investigating/summarizing) • Art/visualizing

Products

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Café
<ul style="list-style-type: none"> • Wisconsin Fast Plant Investigation & Research Report 	<ul style="list-style-type: none"> • Characteristics of Life Visual/Spatial Product 	<ul style="list-style-type: none"> • Collaborative reports using technology (wikis, PowerPoints, film) 	<ul style="list-style-type: none"> • Short personal Narrative • Digital Storytelling 	<ul style="list-style-type: none"> • Literature Circle Products—visual, audio, bodily/skits, technology

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Learning Targets

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Café
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Life Cycle of Plants Scientific Inquiry <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Engineering light boxes & TerraAqua growing systems using recycled materials Observation & data collection 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Living organisms have six key traits in common <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Walking field trip to Granite Creek Park to observe organisms 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Organisms can be grouped into specific categories based on similar traits <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Kingdoms of Life Music Video Using online tools for collaboration 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Elements of a Narrative Elements of plot <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Create a storyboard Create Dialogue and developed characters Create Audio 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Understanding the plot structure of chapter books Understanding overall themes and motifs Discovering character development <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Reading and having discussions about literature

Multiple Intelligences

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Cafe
<ul style="list-style-type: none"> Verbal/Linguistic Interpersonal Intrapersonal Visual Spatial Naturalist Logical/Mathematical 	<ul style="list-style-type: none"> Visual Spatial Verbal Linguistic Inter/Intra Personal Bodily Kinesthetic 	<ul style="list-style-type: none"> Musical-Rhythmic Verbal Linguistic Interpersonal Visual Spatial 	<ul style="list-style-type: none"> Visual Spatial Verbal Linguistic Interpersonal Musical/Rhythmic 	<ul style="list-style-type: none"> Visual Spatial Verbal Linguistic Bodily Kinesthetic

Assessment

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Cafe
<ul style="list-style-type: none"> Students can keep a record of the procedures & observations of a formal scientific study 	<ul style="list-style-type: none"> Students can identify and explain the six characteristics of life in a visual-spatial product 	<ul style="list-style-type: none"> Students will produce a music video demonstrating their knowledge of taxonomy/classification of organisms Students create a collaborative online product on the kingdoms of life 	<ul style="list-style-type: none"> Students will produce a short descriptive narrative Students will create a children's book/Digital story 	<ul style="list-style-type: none"> Students will produce a product per week, per reading. Visual Audio Skit/bodily Technology

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School-Wide Theme: Connections

Celebration of Learning

STEAMN (Science, Technology, Engineering, Arts, Math, Nature) Products:

1. Digital Storytelling & Animated Films (based on literature and writing studies)
2. Skyview News Informational Films
3. Collaborative online science reports (Wiki, PowerPoints, Films)

The Arts

FIRST QUARTER:

1. Connections circle piece tied in with schoolwide theme
2. Sunflower colored pencil/suede board studies-- reflections on nature
3. Macro/micro perspectives with photography-- tying in light and color with science-- and turning mundane into magical (Ms. Bridgett took photos)
4. Mandalas with Mr. Jeff tied in with connections and symmetry

SECOND QUARTER:

1. Chinese New Year-inspired dragons
2. Shell value studies with shading, tied to water
3. Clay face jugs, tied to water - containers for liquids/cultural connections with West Africa

Movement

FIRST QUARTER:

1. Connection to self, connections to each other, Allegory of the Cave: Blindfolded movement studies- using the senses to find inspiration for movement and self-reflection, students learn subtleties of leading and following and reflect on what it means to listen when in either role.
2. Choreography Project: Intro to collaborative choreography and the body and movement as expression of self- Utilizing specific qualities of movement, level changes and stillness, students create duets to be shared with their classmates, this is also an intro to Liz Lerman's outline of an "Artists Critical Feedback Session"
3. Dance and Technology- expression and connection to the others- Students are introduced to various dance films.
4. Student Created Dance Films, part 1: In small groups of 5, students begin to conceptualize their own collaborative dance film, choosing a theme with a clear beginning, middle and end. Students then begin to choreograph movement to support their theme and they pick a specific environment to film in, (outside, playground, near trees, inside the classroom....) Students begin filming.

SECOND QUARTER:

1. Student-created dance films, part 2: Film studies: place, light, qualities of emotion, focus, sound - Guest Filmmaker Bridgitte Krupke discusses filming and editing techniques with students.
2. Student-created dance films, part 3: Students complete the filming process, moving towards the final stages of editing

Middle School (Grades 7-8) Thematic Project-Based Curriculum

School-Wide Theme: Connections

Quarter Three Guiding Questions

Science Fair	Geometric Design	Café	Language Arts	Math 8
<ul style="list-style-type: none"> How can I plan a science investigation using the scientific method? 	<ul style="list-style-type: none"> How can we measure compound & irregular shapes? How can we use geometric formulas to solve equations? How can we apply geometric theories in our world? 	<ul style="list-style-type: none"> What are the different plot elements in literature? What are the main points of a text? How do you use context clues to understand the text more deeply? How do you identify the main ideas/plot/themes? 	<ul style="list-style-type: none"> What is a research essay? What is a thesis statement? What are transitions in writing? What is MLA writing style? 	<ul style="list-style-type: none"> What are coordinate graphs? What are rigid transformations? How can we use equations and graphs in everyday life?

Topics

Science Fair	Geometric Design	Café	Language Arts	Math 8
<ul style="list-style-type: none"> Guiding questions Hypothesis Research reports Experimental procedures Collecting and analyzing data Generating conclusions Displaying and presenting information 	<ul style="list-style-type: none"> Perimeter & area of two-dimensional shapes Surface area and volume of three-dimensional shapes Circumference and area of circles Scale drawings and models Proportional reasoning 	<ul style="list-style-type: none"> Discussion Question (themes/motifs) Diction (vocabulary/comprehension) Connections to reading/infering Reporting/summarizing the text Art/Visual for characters/setting 	<ul style="list-style-type: none"> Research essay for science experiment Student driven research paper on how life is interconnected Thesis statements Transitions Conclusions 	<ul style="list-style-type: none"> Congruence Rigid transformations Using equations in graphing Dilations in graphing

Middle School (Grades 7-8) Thematic Project-Based Curriculum

School-Wide Theme: Connections

Products

Science Fair	Geometric Design	Café	Language Arts	Math 8
<ul style="list-style-type: none"> Formal scientific research report Science fair experiment Formal class presentation of experiment 	<ul style="list-style-type: none"> Scale model and blueprint drawing of dream home What is Pi? Artwork Tile art using complex shapes 	<ul style="list-style-type: none"> Literature Circle Products—visual, audio, bodily/skits, technology 5 paragraph essays for Non-Fiction 	<ul style="list-style-type: none"> Science research essay Essay on "The Necklace" Essay on "How life is interconnected" Thesis statement practice 	<ul style="list-style-type: none"> Artwork and graphs Stained glass windows from graphing PowerPoint of vocabulary

Learning Targets

Science Fair	Geometric Design	Café	Language Arts	Math 8
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Use the scientific method to plan and perform an experiment. Gather research and compose a formal, written report. Collect and analyze scientific data. Present conclusions based on scientific predictions. <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Inquiry process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results. 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Calculate the measurements of complex geometric shapes Design accurate scale drawings Calculate precise measurements using metric ruler, protractor, compass <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Understand the history and meaning of Pi. Make connections between geometric formulas and real-world shapes. 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Understanding the differences between non-fiction and fiction in prose Understanding overall themes and motifs Discovering character development <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Reading and having in-depth discussions about fiction Reading and having in-depth discussions about non-fiction 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Understanding what a strong vs. weak essay look like. Understanding what comprises a strong thesis statement Understanding how to use transitions Understanding how to navigate MLA formatting <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Reading multiple essays by multiple authors to compare essay strategies Peer editing Revising Writing 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Understanding rigid transformations and how they affect coordinates on a graph Understanding how equations are graphed Understanding how dilations affect graphing <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Life size graphs Working with partners to examine how an object changes Working with partners to examine how objects move

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Multiple Intelligences

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<ul style="list-style-type: none"> • Visual Spatial • Logical Mathematical • Inter/Intrapersonal • Verbal linguistic 	<ul style="list-style-type: none"> • Visual Spatial • Verbal Linguistic • Inter/Intra Personal • Logical Mathematical 	<ul style="list-style-type: none"> • Bodily Kinesthetic • Verbal Linguistic • Interpersonal • Visual Spatial 	<ul style="list-style-type: none"> • Visual Spatial • Verbal Linguistic • Interpersonal 	<ul style="list-style-type: none"> • Visual Spatial • Verbal Linguistic • Bodily Kinesthetic • Inter/Intrapersonal

Assessment

Terra/Aqua Systems	Characteristics of Life	Taxonomy of Living Organisms	Writing/Language Arts	Literature Cafe
<ul style="list-style-type: none"> • Research Report • Experiment and data analysis • Class presentation 	<ul style="list-style-type: none"> • Scale model and blueprint of dream home • What is Pi? Artwork • Geometry Multiple Intelligence Product • Geometry Final Exam 	<ul style="list-style-type: none"> • Students will produce a product per week, per reading. • Visual/Audio Technology • Students will produce essays on Non-Fiction 	<ul style="list-style-type: none"> • Students will produce multiple essays • Students will work on MLA website to compare and contrast 	<ul style="list-style-type: none"> • Students will create pieces of art using rigid transformations • Students will create PowerPoints based on vocabulary for the chapters • Students will work with a life-sized graph to show understanding of coordinates

Celebration of Learning

Film Festival Celebration of Learning: A collection of student-led films in a variety of genres.

Dance Films, Math Music Videos, Stop-Motion Animation, Skyview News Broadcast, Slam Poetry, Feature-Length Film (*The Story of Dryville*)

Skyview Science Fair

The Arts

THIRD QUARTER:

1. Continuation of glazing clay face jugs after bisque firing
2. Acrylic canvas paintings, tying in light, color, and movement - connections with science and dance

Movement

THIRD QUARTER:

1. Dance & Technology continued: connection of science with dance, inspired by Dance Your PhD, each class creates an original script and dance film using choreography to explain science concepts
2. Middle School Celebration: Film Festival, dance films are showcased.

Middle School (Grades 7-8) Thematic Project-Based Curriculum

School-Wide Theme: Connections

Quarter Four Guiding Questions

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<ul style="list-style-type: none"> • How does electrical energy flow through a circuit? • How do musical instruments produce sound? • How does energy move through the universe? 	<ul style="list-style-type: none"> • How do plants & animals interact in the natural world? • How do humans impact the natural world? • What ways can humans restore the environment? 	<ul style="list-style-type: none"> • What type of training is required for careers of the future? • How can I budget an annual salary to pay my bills, save money, etc.? • How does foreign currency compare to the US Dollar? 	<ul style="list-style-type: none"> • What is the relationship between man and nature? • How do you use context clues to better understand writing? • How do you use in-text citations to strengthen your writing? 	<ul style="list-style-type: none"> • What are the elements of a speech? • How do you write an effective introduction/conclusion? • What are transitions and how are they used in speeches? 	<ul style="list-style-type: none"> • How do you set up proportions? • How do you budget money? • How do you calculate discounts and percentages?

Topics

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<ul style="list-style-type: none"> • Electromagnetic Spectrum • Renewable Energy (solar, wind, etc.) • Electrical Circuits • Sound Waves 	<ul style="list-style-type: none"> • Riparian Ecosystems • Ecological Relationships • Biodiversity • Environmental Restoration 	<ul style="list-style-type: none"> • Circle Graphs/Pie Charts • Sale Price • Discount • Currency • Exchange Rate • Salary • Taxes 	<ul style="list-style-type: none"> • Discussion question (themes/motifs) • Diction (vocabulary/comprehension) • Connections to reading/infering • Reporting (investigating/summarizing) • Naturalist Writing 	<ul style="list-style-type: none"> • Non-verbal communication • The fundamentals of communication • Introductions • Conclusions • Transitions • Organization 	<ul style="list-style-type: none"> • Proportions • Relationships • Sales Tax • Percentages • Pythagorean Theorem

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Products

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<ul style="list-style-type: none"> Squishy Circuits Solar Ovens Wind Turbines Homemade Instruments Energy Spectrum Presentations 	<ul style="list-style-type: none"> Naturalist Journals Landscape Visuals Animal/Plant Models 	<ul style="list-style-type: none"> Monthly Budget Career Research Project Shopping Spree Project Research Foreign Currency Design Your Own Money 	<ul style="list-style-type: none"> Final literature circle projects Essential questions. Journals Annotations page(s) 	<ul style="list-style-type: none"> Random Object Speech Persuasive Speech "How To" Speech 8th Grade Speech 	<ul style="list-style-type: none"> Homework Quizzes Project on Road trip Project on Remodeling

Learning Targets

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Build a loop, parallel, and series electrical circuit. Explain how sound waves are produced. Identify sources of energy in the universe (gamma, infrared, x-ray, etc.) Explain how renewable energy sources benefit developing countries <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Engineering design process Hands-on experimentation 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Identify local plants & animal species Draw connections between the natural world and human impact. Reflect on environment problems & solutions. <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Participate in environmental restoration projects Field studies in local watershed and riparian areas 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Create digital and handmade circle graph Prepare budget spreadsheet Calculate percent of discounts, sales tax Identify value of currency from various countries. <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Presentation of future careers Research foreign currency/exchange rates Knowledge of protractors, spreadsheets, graphing 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Understanding point of view Understanding naturalist writing Identifying plot structure <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Reading: whole group, partnered, and individual Watching video adaptations Creating projects using in-text citations 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Elements of a speech Effective speech delivery Non-verbal communications <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Delivery in front of peers and teachers Writing/ editing/ revising 	<p>Enduring Understandings:</p> <ul style="list-style-type: none"> Map out distances on actual US maps Find proportional distances Create a budget Find and understand sales tax <p>Key Learning Experiences:</p> <ul style="list-style-type: none"> Hands-on projects Presentations Conversions/budget worksheets

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Multiple Intelligences

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<ul style="list-style-type: none"> • Verbal-Linguistic • Logical-Mathematical • Visual-Spatial • Inter/Intrapersonal • Bodily-Kinesthetic 	<ul style="list-style-type: none"> • Naturalist • Bodily-Kinesthetic • Visual-Spatial • Verbal-Linguistic • Intra/Interpersonal 	<ul style="list-style-type: none"> • Logical-Mathematical • Visual-Spatial • Verbal-Linguistic • Intrapersonal 	<ul style="list-style-type: none"> • Visual • Verbal • Bodily • Interpersonal/intra 	<ul style="list-style-type: none"> • Visual • Verbal • Bodily 	<ul style="list-style-type: none"> • Logical-Mathematical • Visual-Spatial • Verbal-Linguistic • Intrapersonal

Assessment

Invisible Energy	The Natural World	Study of Money	Man vs. Nature	L.A. - Speeches	Road Trips & Remodel
<ul style="list-style-type: none"> • Logical-Mathematical • Visual-Spatial • Verbal-Linguistic • Intrapersonal 	<ul style="list-style-type: none"> • Naturalist Journal/Diary • Naturalist Project Work 	<ul style="list-style-type: none"> • Currency Projects • Career Reports & Presentations • Shopping Spree Discount Challenge 	<ul style="list-style-type: none"> • Students will produce a product per week, per reading • Visual • Audio • Skit/bodily • Technology 	<ul style="list-style-type: none"> • 4 different styles of speeches • Stage performance/non-verbal communications 	<ul style="list-style-type: none"> • Road Trip Project • Remodeling Project • Budgeting worksheet

Celebration of Learning

<ul style="list-style-type: none"> • Naturalist Study & Field Work • Rock Climbing at Chapel Rock & Watson Lake • Watson Woods Riparian Exploration • Tour of the Yavapai Humane Society • Service Project at Prescott College with the Butte Creek Restoration Council • Heritage Park Zoo Tour and Embry Riddle tour/Robotics demonstration • Grand Canyon Rafting Trip • 8th Grade Graduation Dinner & Speeches

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School-Wide Theme: Connections

The Arts

FOURTH QUARTER:

1. Sticker project with Mr. Jeff- what is important to you, and what do you want to communicate to the world.
2. Teacher Caricature gratitude project-- paper colored pencil drawings, followed by plastic Shrinky dink gifts for teachers
3. Teacher caricatures

Movement

THIRD QUARTER:

1. Review of dance technique and improvisation
2. Rhythmic study of sustained and sharp movement in improvisation
3. Flash mob: Students learn choreography for an original flash mob to be performed at the end of the year graduation celebration ceremony