

Jefferson City Public Schools–Curriculum

SUBJECT: Elementary

COURSE: EER

STRAND: Mathematical Minds and Scientific Psyches

Objectives	Assessment/Evaluation	Instructional Activities
<p>(A) Learn about the life of Sophia Germaine</p> <p>Discover number patterns using exponents</p> <p>Performance: 1.10 Knowledge: (MA) 1 MAGLE: NO.2.C (Gr. 6) SCGLE: SC8.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<p>Students will self-assess:</p> <ul style="list-style-type: none"> • Four Fours assignment • crossword puzzle 	<ul style="list-style-type: none"> • Read information on Sophia Germaine • Label France on a world map • Assignment: “Four Fours” – check together • Find dollar words • Students will work on a crossword puzzle of Sophia Germaine while waiting for other students to finish their work
<p>(B) Learn about the life of Sonya Kovalevsky</p> <p>Discover formulas for patterns and write them using assigned pages</p> <p>Performance: 1.6 Knowledge: (MA) 4 MAGLE: AR.1.B (Gr. 6) SCGLE: SC8.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<p>Students will self-asses:</p> <ul style="list-style-type: none"> • Snowflake Curve • Paper Punching Patterns 	<ul style="list-style-type: none"> • Read information on Sonya Kovalevsky • Label Moscow, Russia on a world map • Complete “Snowflake Curve”, discovering patterns and writing an algebraic statement • Predictable patterns – adding to patterns of infinite sequences • Complete “Paper Punching Patterns” and write an algebraic sentence to describe the pattern

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<p>(C) Learn about the life of Rachel Carson</p> <p>Learn about the effects of DDT on eagle eggs</p> <p>Use scientific inquiry to discover the meaning of parts per million</p> <p>Performance: 1.3 Knowledge: (SC) 3,7 SCGLE: SC4.1.D (Gr. 6); SC7.1.A (Gr. 4); SC8.2.A,B (Gr. 6) NETS: (3-5) 8 DOK: 2</p>	<p>Teacher will assess observations of experiment using a scoring guide</p>	<ul style="list-style-type: none"> • Watch a DVD of Rachel Carson (50 min.) • Mark home state on a map • Fill out an information sheet • Take a pre-test on eagles - check together • Read an information sheet on Bald Eagles and on DDT • Discover amount of 1 p.p.m & 1 p.p.b using scientific inquiry
<p>(D) Learn about the life of Maria Agnesi</p> <p>Performance: 1.10 Knowledge: (MA) 2 MAGLE: GSR.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<ul style="list-style-type: none"> • Teacher will evaluate areas and formulas – assessed using a scoring guide • Self-evaluate crossword puzzles 	<ul style="list-style-type: none"> • Read about Maria Agnesi • Label Italy on a world map • Plot x & y on a graph using an algebraic formula • Find areas of isoperimetric shapes given the formulas • Complete a crossword puzzle about Agnesi
<p>(E) Learn about the life of Marie Curie</p> <p>Identify parts of an atom</p> <p>Connect atoms to the numbers on a periodic table</p> <p>Performance: 4.6 Knowledge: (SC) 1 SCGLE: SC8.2.A SCCLE: SC1.1.E (Chemistry I) NETS: (3-5) 8 DOK: 2</p>	<p>Teacher will assess atom structure quiz</p>	<ul style="list-style-type: none"> • Watch Marie Curie VHS • Label the country of origin on a map • Fill out a question sheet • Play atomic musical chairs

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<p>(F) Learn about the life of Mary Somerville</p> <p>Use the Pythagorean Theorem to calculate the distance a person can see of the ocean</p> <p>Determine and continue a pattern</p> <p>Performance: 1.6 Knowledge: (MA) 2 MAGLE: AR.1.A,B (Gr. 5); GSR.2.A (Gr. 8) NETS: N/A DOK: 3</p>	<p>Teacher will assess distances and patterns – assessed using a scoring guide</p>	<ul style="list-style-type: none"> • Read about Mary Somerville • Label Scotland on a world map • Experiment with the Pythagorean Theorem using p. 50: <i>Historical Connections In Mathematics, Vol. III</i> • Use calculators and the Pythagorean Theorem to determine distance • Determine the relationship between ant speed and temperature by identifying and continuing a pattern
<p>(G) Learn about the life of Emily Noether</p> <p>Write algebraic formulas to explain mathematical tricks</p> <p>Performance: 3.3 Knowledge: (MA) 4 MAGLE: AR.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<ul style="list-style-type: none"> • Teacher will assess algebraic formulas – assessed using a scoring guide • Students self-assess “Puzzling Mystery” 	<ul style="list-style-type: none"> • Read about Emily Noether • Label Germany on a world map • Learn “algebra magic” using p. 73 (<i>Historical Connections In Mathematics, Vol. III</i>) and write an algebraic formula for a number trick • Write an algebraic formula for a given card trick • Solve “Puzzling Mystery” using p. 75: <i>Historical Connections In Mathematics, Vol. III</i>
<p>(H) Learn about the life of Barbara McClintock</p> <p>Performance: 1.3 Knowledge: (CA) 3 (SC) 3,7 SCGLE: SC8.2.A (Gr. 6) NETS: (3-5) 8 DOK: 2</p>	<p>Teacher will assess written hypothesis and conclusions of chromatography experiment – assessed using a scoring guide</p>	<ul style="list-style-type: none"> • Label Connecticut on a US map • Read about Barbara McClintock • Watch the video <i>Good Cells Gone Bad</i> • Complete an information sheet on <i>Good Cells Gone Bad</i> • Participate in a chromatography experiment to discover how substances can be separated

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<p>(I) Listen to cancer specialist and guest speaker</p> <p>Write a thank-you note to the guest speaker</p> <p>Demonstrate appropriate listening behaviors</p> <p>Performance: 1.5, 1.8, 2.1, 2.2 Knowledge: (CA) 1,4-6 CAGLE: W.1.Aa-e (Gr. 6); LS.1.B (Gr. 5) NETS: N/A DOK: 3</p>	<p>Teacher will assess</p> <ul style="list-style-type: none"> • student behavior using teacher observation • thank-you notes using a scoring guide 	<ul style="list-style-type: none"> • Actively listen to a guest speaker • Ask appropriate questions • Compose a thank-you note in correct friendly letter format
<p>(J) Learn about the life of Maria Mitchell</p> <p>Use scientific inquiry to discover the content of a comet</p> <p>Performance: 1.3 Knowledge: (CA) 3 (SC) 1,6,7 SCGLE: SC8.2.A (Gr. 6) NETS: N/A DOK: 3</p>	<p>Teacher will assess written summary experiment using a scoring guide</p>	<ul style="list-style-type: none"> • Read about Maria Mitchell • Label a map • Participate in the construction of a laboratory comet, then make and record observations of its decomposition
<p>(K) Learn about the life and works of Jane Goodall</p> <p>Comprehend difficulties of preserving endangered animals</p> <p>Performance: 1.5 Knowledge: (CA) 3 (SC) 3,8 SCGLE: SC8.2.A,B (Gr. 6) NETS: (3-5) 8 DOK: 2</p>	<ul style="list-style-type: none"> • Students will self-assess the Wild Chimpanzee sheet • Teacher will assess the map using a scoring guide 	<ul style="list-style-type: none"> • Watch Jane Goodall's <i>Wild Chimpanzees</i> • Complete an information sheet • Class discussion • Label a map – Gombe National Park Tanzania

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<p>(L) Create mind maps of scientists and mathematicians</p> <p>Performance: 1.8, 2.2 Knowledge: (CA) 1,3,4 CAGLE: W.2.Ea,d-f (Gr. 5) NETS: N/A DOK: 2</p>	<p>Teacher will assess mind maps using a scoring guide</p>	<p>Organize biographical information of scientists and mathematicians into a mind map</p>
<p>(A) Learn about the life and works of John Napier</p> <p>Discover numerical patterns</p> <p>Compute multiplication using Napier bones</p> <p>Performance: 1.6 Knowledge: (MA) 1 SCGLE: SC8.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<p>Students will self-assess:</p> <ul style="list-style-type: none"> • crossword puzzles • double to single digit multiplication page 	<ul style="list-style-type: none"> • Read and discuss the life of Napier • Complete a crossword puzzle • Use Napier rods to complete double to single digit problems
<p>(B) Compute multiplication using Napier bones</p> <p>Identify modern uses of Napier's discovery</p> <p>Performance: 1.6 Knowledge: (MA) 1 MAGLE: NO.3.C (Gr. 5) NETS: N/A DOK: 2</p>	<ul style="list-style-type: none"> • Teacher will assess double digit multiplication – assessed using a key • Students will self-assess earthquake mathematics 	<ul style="list-style-type: none"> • Review double to single multiplication using rods • Practice doing double to double multiplication using rods • Complete earthquake mathematics using calculators
<p>(C) Learn about the life and works of Fibonacci</p> <p>Identify numerical patterns found in nature</p> <p>Performance: 1.6, 3.2 Knowledge: (MA) 1,4 (SC) 3,7 MAGLE: NO.3.D (Gr. 6); AR.1.A (Gr. 5) SCGLE: SC8.2.A (Gr. 6) NETS: N/A DOK: 2</p>	<ul style="list-style-type: none"> • Teacher will assess mathematical patterns – assessed using a key • Students will self-assess the Golden Rectangle activity 	<ul style="list-style-type: none"> • Read about Fibonacci • Count and chart rabbits • Complete mathematical patterns • Observe items and record Fibonacci sequences • Golden Rectangle activity

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