

# Joan Martin Elementary School

## **Action Plan #3: Problem Solving**

### **Improvement Goal:**

All students will use problem solving skills to think critically and apply knowledge and reason to solve problems.

### **Expectation(s) for Student Learning:**

All students will compute accurately with and without a calculator.

All students will think and reason effectively.

All students will solve problems accurately and efficiently.

All students will demonstrate problem-solving skills in mathematics and science.

All students will use technology research tools to locate, evaluate, and collect information in order to process data and report results.

All students will communicate clearly using mathematical language and representations by demonstrating skills and knowledge.

All students will use technology resources in developing strategies and making informed decisions for solving problems.

### **Target PaMTSScipants:**

All students in Joan MaMTSSn Elementary School

Subgroups:

Students who are achieving below proficiency level.

Students who are achieving above proficiency level.

### **Interventions:**

#### **Curriculum, Instruction and Assessment:**

All students will increase skills in mathematics and science by monitoring progress on academic and Indiana Academic Standards (IAS) to determine instructional needs.

All students will increase problem solving skills through differentiated instruction across the mathematics curriculum that emphasizes conceptual understanding.

# Joan Martin Elementary School

All students will use reasoning and critical thinking to solve problems that provide relevant, concrete, and everyday problems across the curriculum.

All students will increase problem solving skills by using technology tools across the curriculum.

## **Student Support:**

Students will participate in Multi-Tiered Support System (MTSS) based on achievement levels.

Students may participate in after school clubs and extracurricular activities.

Students will participate in enriched and high ability courses based on achievement levels.

All students will increase problem solving skills through opportunities for family/community participation via Pearson Realize and Home/School connection.

Students who qualify for services will be provided additional instructional support.

Students will participate in afterschool clubs and extracurricular activities.

## **Staff:**

All students will increase problem solving skills as a result of teacher participation in professional learning communities.

## **Evaluation:**

School City of Hobart's Balanced Assessment System Framework

Curriculum calendar

Report Card

Conferring

Classroom assessments-Checklists/Rubrics, quizzes, unit tests, formal scales

Common Formative Assessments-Formal Scales, Rubrics, Checklists, Compass Learning Odyssey

Benchmark Assessments-Pivot

External Summative Assessments-ISTEP+, IREAD 3, WIDA, ISTAR, Portfolios

## **Timeframe for Implementation:**

2017-2021

# Joan Martin Elementary School

Target Area of Improvement: Mathematics - Computation, Problem-Solving, and Data Analysis

ACTIONS	SCHEDULE	RESPONSIBILITIES	MONITORING	RESOURCES
<p>Intervention: Assessment/Differentiated Instruction for Conceptual Understanding</p> <p>1. All students will increase skills in mathematics and science by monitoring progress on the Indiana Academic Standards and Mathematical Practices to determine instructional needs.</p> <p>A. PIVOT will be administered to grades one through five every fall and spring with periodic benchmarks to determine goal areas needing remediation for each student.</p> <p>B. ISTEP data will be analyzed to determine skill areas needing remediation for each student.</p> <p>C. School City of Hobart’s Balanced Assessment System Framework</p> <p>2. All students will increase problem solving skills through differentiated instruction across the curriculum that emphasizes conceptual understanding.</p> <p>A. Students will learn basic math facts.</p> <p>B. Students will understand units of measurement and apply appropriate techniques and formulas.</p> <p>C. Students will understand and solve algebraic equations and understand patterns and relationships between numbers.</p>	<p>2017-2021</p>	<p>-Elementary Staff, as appropriate</p> <p>-Administrators</p>	<p>-Classroom assessments</p> <p>-SCOH Balanced Assessment System Framework</p> <p>-Journals</p> <p>-Rubrics</p> <p>-Conferring</p> <p>-Checklists</p>	<p>-Classroom assessments</p> <p>-Manipulatives</p> <p>-Calculators</p> <p>-Software</p> <p>-Flash cards</p> <p>-Classroom Texts</p> <p>-Time for data analysis</p> <p>-MTSS</p> <p>-Professional Development Catalog</p> <p>-Purdue Problem Centered Mathematics Project</p> <p><i>-Indiana Department of Education</i> web site,</p> <p>ISTEP+ practice</p> <p>-SCOH Balanced Assessment System Framework</p> <p>-Fastt Math</p> <p>-Xtra Math</p> <p>-Prodigy</p> <p>-Front Row</p> <p>-Fraction Nation</p>

## Joan Martin Elementary School

<p>D. Students will identify, describe, and compare geometrical shapes.</p> <p>E. Students will construct and interpret graphs throughout the curriculum as part of data analysis.</p> <p>F. Students will learn and apply inquiry-type strategies.</p> <p>G. Students will have the opportunity to participate in study tables and ISTEP Boost.</p>				<p>-Khan Academy</p> <p>-Envisions</p>
<p>Intervention: Reasoning and Critical Thinking To Solve Problems</p> <p>1. All students will use reasoning and critical thinking to solve problems that provide relevant, concrete, and everyday problems across the curriculum.</p> <p>A. Students will build academic vocabulary across the curriculum.</p> <p>B. Students will understand and choose the correct mathematical operation to solve problems across the curriculum. (Example: "Similarities and Differences/Graphic Organizers" - Marzano)</p> <p>C. Students will use mental math/estimation to understand when an exact answer or an estimate is sufficient.</p> <p>D. Students will develop a set of problem solving strategies across the curriculum.</p> <p>Example:</p> <p>1. READ What is the question?</p>	<p>2017-2021</p>	<p>-Elementary Staff Cross-Curricular</p> <p>-Administrators</p>	<p>-Classroom assessments</p> <p>-Journals</p> <p>-Rubrics</p> <p>-SCOH Balanced Assessment System Framework</p>	<p>A. <i>Classroom Instruction That Works</i> by Robert Marzano</p> <p>B. <i>Choice Words</i> by Peter Johnston</p> <p>C. <i>The Art and Science of Teaching</i> by Robert Marzano</p> <p>-Manipulatives</p> <p>-Textbook</p> <p>-SCOH Balanced Assessment System Framework</p> <p>-Envisions</p> <p>-Pivot</p> <p>-Google Apps</p> <p>-SeeSaw</p>

## Joan Martin Elementary School

<p>2. REREAD What is the necessary information?</p> <p>3. THINK Putting together = addition Taking apart = subtraction Do I need all the information? Is it a two-step problem?</p> <p>4. SOLVE Write the equation.</p> <p>5. CHECK Recalculate Label Compare</p> <p>E. Students will problem solve by using probability, data analysis, and statistics across the curriculum.</p>				
<p>Intervention: Defined Curriculum – National or Academy Curriculum</p> <p>1. Students will participate in project/problem based learning.</p> <p>A. IDOE STEM B. PLTW Launch C. Lego Robotics</p>		<p>-Elementary PLTW Teachers</p>		<p>-Google Apps -SeeSaw -PLTW Resources -Hour of Code site</p>
<p>Intervention: Technology Tools</p> <p>1. All students will increase problem solving by using technology tools across the curriculum.</p> <p>A. Students will construct, interpret, and analyze graphs.</p> <p>B. Students will use calculators to solve mathematical equations.</p>	<p>2017-2021</p>	<p>-Elementary Staff Cross-Curricular -Administrators</p>	<p>-Classroom Assessments -Teacher Observation -Student Presentations -Odyssey Compass Learning</p>	<p>-Calculators -Computers and Simulation Software -Professional Development Calendar</p>

## Joan Martin Elementary School

<p>C. Students will use computer simulations to solve problems</p>			<p>-SCOH Balanced Assessment System Framework</p>	<p>-Challenger Learning Center (Space Simulation)          -Khan Academy          -Harry Kindergarten on YouTube          -Tablets          -iPads          -vBrick          -BrainPop Jr.          -Google apps          -Chromebooks          -Envisions          -Pivot          -SeeSaw</p>
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<p>Intervention: Multi-Tiered Support System (MTSS)          1. Students will participate in MTSS Tiers based on achievement levels.          A. A district-wide MTSS approach is implemented with guidelines.          B. Tier II will be implemented through the intervention of "Increased Academic Learning Time" within the classroom including the following:          -Co-Teaching</p>	<p>2017-2021</p>	<p>-Principals          -K-12 Teachers          -LRE Facilitators          -Interventionists          -MTSS Teams</p>	<p>-SCOH Balanced Assessment System Framework          -MTSS Forms          -MTSS Meetings</p>	<p>-SCOH Balanced Assessment System Framework          -Professional Learning Communities          -Common Planning Time          -MTSS Policy &amp; Guidelines</p>
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## Joan Martin Elementary School

<ul style="list-style-type: none"> <li>-Achievement Groups</li> <li>- Strategy Groups</li> <li>-Summer School</li> <li>-Double Blocked Subjects</li> <li>-Counseling</li> <li>C. Tier II and Tier III will be implemented through intense intervention with additional support services. -</li> <li>Small Group Instruction</li> <li>-Individual Instruction</li> <li>-Small Group Counseling</li> </ul>				<ul style="list-style-type: none"> <li>-MTSS Forms &amp; Meetings</li> <li>-Skyward</li> <li>-Professional Development MTSS</li> <li>-Curriculum Materials MTSS</li> <li>-TRC</li> <li>-Envisions MDIS</li> <li>-Pivot</li> <li>-Study Tables</li> <li>-ISTEP Boost</li> <li>-Front Row</li> <li>-Khan Academy</li> <li>-XtraMath</li> <li>-Prodigy</li> <li>-Fastt Math</li> <li>-Do The Math</li> <li>-Fraction Nation</li> <li>-Study Ladder</li> </ul>
<p>Intervention: Enriched and High Ability</p> <p>1. Students will participate in Enriched and High Ability courses based on achievement levels.</p> <p>A. Enriched Curriculum</p> <ul style="list-style-type: none"> <li>-Small Group Instruction</li> <li>-Enriched Courses</li> </ul> <p>B. High Ability</p> <ul style="list-style-type: none"> <li>-Magnet High Ability Grades 2-5</li> </ul>	<p>2017-2021</p>	<ul style="list-style-type: none"> <li>-Lead: Central Office Administrators</li> <li>-Principals</li> <li>-Teachers</li> </ul>	<ul style="list-style-type: none"> <li>-School City of Hobart's Balanced Assessment System Framework</li> </ul>	<ul style="list-style-type: none"> <li>-School City of Hobart's Balanced Assessment System Framework</li> <li>-Professional Learning Communities</li> <li>-Common Planning Time</li> <li>-Skyward</li> <li>-TRC</li> <li>-High Ability Policy and Guidelines</li> </ul>

# Joan Martin Elementary School

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<p>Intervention: Clubs and Extracurricular</p> <p>1. Students will participate in clubs and extracurricular activities</p> <ul style="list-style-type: none"> <li>A. Academic Support</li> <li>B. Academic Enrichment</li> <li>C. Athletics</li> <li>D. Performing Arts</li> <li>E. Leadership/Lifeskills</li> <li>F. Maker Fair</li> </ul>	2017-2021			<ul style="list-style-type: none"> <li>-ISTEP Boost</li> <li>-Study Tables</li> <li>-Robotics</li> <li>-Math Bowl</li> <li>-Stacking Club</li> <li>-Student Council</li> <li>-Brickie Leaders</li> <li>-Pivot</li> <li>-Hour of Code</li> </ul>
<p>Intervention: Instruction Support Services</p> <p>Students who qualify for additional services will be provided extra instructional support.</p> <ul style="list-style-type: none"> <li>A. Special Education</li> <li>B. English Learners (EL)</li> <li>C. 504</li> <li>D. Double Blocking</li> </ul>	2017-2021	<ul style="list-style-type: none"> <li>-Principals</li> <li>- Teachers</li> <li>-EL Coordinator</li> <li>-Special Education Staff</li> <li>-Nurses</li> </ul>	<ul style="list-style-type: none"> <li>-School City of Hobart's Balanced Assessment System Framework</li> </ul>	<ul style="list-style-type: none"> <li>-School City of Hobart's Balanced Assessment System Framework</li> <li>-Professional Learning Communities</li> <li>-Common Planning Time</li> <li>-Skyward</li> <li>-TRC (District Web site)</li> <li>-IEP</li> <li>-504</li> <li>-Case Conferences</li> <li>-Pivot</li> </ul>



# Joan Martin Elementary School

<p>Intervention: Family/Community Involvement</p> <p>1. All students will increase problem solving skills through opportunities for family/community participation.</p> <ul style="list-style-type: none"> <li>A. Skyward - Assignments/Grades/Discipline/Attendance</li> <li>B. Website - Homework Help and Tips</li> <li>C. Parent/Teacher meetings</li> <li>D. Homework Hotline</li> <li>E. Newsletters</li> </ul>	<p>2017-2021</p>	<ul style="list-style-type: none"> <li>-Principals</li> <li>-Elementary Staff</li> <li>-Central Office Administration</li> <li>-Technology Department</li> </ul>	<ul style="list-style-type: none"> <li>-Parent/Teacher Conference</li> <li>Attendance</li> <li>-Monitoring Skyward usage</li> <li>-Monitoring Website usage</li> </ul>	<ul style="list-style-type: none"> <li>-Skyward Parent Information Packet</li> <li>-School City of Hobart Website</li> <li>Online Assistance:</li> <li>-Khan Academy</li> <li>-FASTT Math</li> <li>-Envisions</li> <li>- Fraction Nation</li> <li>-Google Classroom</li> </ul>
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## Joan Martin Elementary School

<p>F. Facebook          G. Google Classroom          H. Online Assistance:          -Khan Academy          -FASTT Math          -Envisions          - Fraction Nation          -Google Classroom          -Smore          -Facebook          -Class Dojo</p>				<p>-Smore          -Facebook          -Class Dojo          -SeeSaw</p>
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<p>Intervention: Professional Learning Communities          All students will increase problem solving skills as a result of teacher participation in professional learning communities.</p> <p>A. Curriculum Planning- Grade Level/Curriculum/Department Meetings</p> <ol style="list-style-type: none"> <li>a. Identification of Critical Standards</li> <li>b. Curriculum Calendar/Curriculum Mapping</li> <li>c. Google Apps</li> <li>d. Skyward</li> </ol>	<p>2017-2021</p>	<p>-Administrators          -Elementary Staff          -MTSS Teams</p>	<p>-SCOH Balanced Assessment System Framework          -Classroom Assessments          -Teacher Goal Sheets          -Professional Development Enrollment          -Grade Level Meetings</p>	<p>-Time for Professional Development          -Professional Development Calendar          -Book Studies          -SCOH Balanced Assessment System Framework          -Google Apps          -Envisions          -Pivot</p>
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# Joan Martin Elementary School

<ul style="list-style-type: none"> <li>e. Web Publishing with SchoolWires</li> <li>B. Data Analysis - ISTEP, Classroom Assessments, Pivot, SCOH's Balanced Assessment System Framework</li> <li>C. Best Practices - Book Studies, Grade Level/Curriculum/Department Meetings/DATA Meetings</li> <li>D. Professional Development - In-House Professional Development Calendar, Conferences</li> <li>E. MTSS Teams</li> </ul>			<ul style="list-style-type: none"> <li>-District Grade Level Meetings</li> <li>-MTSS Teams</li> <li>-Pivot</li> <li>-Portfolios</li> </ul>	<ul style="list-style-type: none"> <li>-Late Start Wednesdays</li> <li>-Common Plan Times</li> <li>-TRC</li> <li>-MTSS Training</li> <li>-SeeSaw</li> <li>-Khan Academy</li> </ul>
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