

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 Participants:

All students in Joan Martin 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.

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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 Response to Instruction (RtI) tiers 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:

2016-2017

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

| ACTIONS | SCHEDULE | RESPONSIBILITIES | MONITORING | RESOURCES |
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| <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> | 2012-2017 | <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>-RtI</p> <p>-Professional Development Catalog</p> <p>-Purdue Problem Centered Mathematics Project</p> <p><i>-Indiana Department of Education web site, ISTEP+ practice</i></p> |

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| <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>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>-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> <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</p> | 2012-2017 | <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> |

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| <p>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> <ol style="list-style-type: none"> 1. READ What is the question? 2. REREAD What is the necessary information? 3. THINK Putting together = addition Taking apart = subtraction Do I need all the information? Is it a two-step problem? 4. SOLVE Write the equation. 5. CHECK Recalculate Label Compare <p>E. Students will problem solve by using probability, data analysis, and statistics across the curriculum.</p> | | | | <p>-Textbook</p> <p>-SCOH Balanced Assessment System Framework</p> <p>-Envisions</p> <p>-Pivot</p> <p>-Google Apps</p> <p>-SeeSaw</p> |
| <p>Intervention: Defined Curriculum – National or Academy Curriculum</p> <ol style="list-style-type: none"> 1. Students will participate in project/problem based learning. <ol style="list-style-type: none"> A. IDOE STEM | | | | <p>-Google Apps</p> <p>-SeeSaw</p> |

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| B. Lego Robotics | | | | |
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| <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>C. Students will use computer simulations to solve problems</p> | 2012-2017 | <p>-Elementary Staff Cross-Curricular</p> <p>-Administrators</p> | <p>-Classroom Assessments</p> <p>-Teacher Observation</p> <p>-Student Presentations</p> <p>-Odyssey Compass Learning</p> <p>-SCOH Balanced Assessment System Framework</p> | <p>-Calculators</p> <p>-Computers and Simulation Software</p> <p>-Professional Development Calendar</p> <p>-Challenger Learning Center (Space Simulation)</p> <p>-Khan Academy</p> <p>-Harry Kindergarten on YouTube</p> <p>-Tablets</p> <p>-iPads</p> <p>-vBrick</p> <p>-BrainPop Jr.</p> <p>-Google apps</p> <p>-Chromebooks</p> <p>-Envisions</p> <p>-Pivot</p> <p>-SeeSaw</p> |

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| <p>Intervention: Response to Instruction (RtI)</p> <p>1. Students will participate in RtI Tiers based on achievement levels.</p> <p>A. A district-wide RtI policy is implemented with guidelines.</p> <p>B. Tier II will be implemented through the intervention of "Increased Academic Learning Time" within the classroom including the following:</p> <ul style="list-style-type: none"> -Achievement Groups - Strategy Groups -Double Blocked Subjects -Computerized Intervention Software <p>C. Tier II and Tier III will be implemented through intense intervention with additional support services.</p> <ul style="list-style-type: none"> -Computerized Intervention Software -Intense Reading Intervention -Individual Instruction -Small Group Instruction | 2012-2017 | <ul style="list-style-type: none"> -Principals -K-12 Teachers -LRE Facilitators -Interventionists -RtI Teams | <ul style="list-style-type: none"> -SCOH Balanced Assessment System Framework -RtI Forms -RtI Meetings | <ul style="list-style-type: none"> -SCOH Balanced Assessment System Framework -Professional Learning Communities -Common Planning Time -RtI Policy & Guidelines -RtI Forms & Meetings -Skyward -Leveled Literacy Intervention (LLI) -System 44 -Read 180 -Professional Development RtI -Curriculum Materials RtI -TRC -RAZ Kids -Envisions MDIS -Pivot -Study Tables -ISTEP Boost |
| <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"> -Small Group Instruction -Enriched Courses <p>B. High Ability</p> <ul style="list-style-type: none"> -Magnet High Ability Grades 2-5 | 2012-2017 | <ul style="list-style-type: none"> -Lead: Central Office Administrators -Principals -Teachers | <ul style="list-style-type: none"> -School City of Hobart's Balanced Assessment System Framework | <ul style="list-style-type: none"> -School City of Hobart's Balanced Assessment System Framework -Professional Learning Communities -Common Planning Time -Skyward -TRC -High Ability Policy and Guidelines |

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| <p>Intervention: Clubs and Extracurricular</p> <p>1. Students will participate in clubs and extracurricular activities</p> <p>A. Academic Support</p> <p>B. Academic Enrichment</p> <p>C. Athletics</p> <p>D. Performing Arts</p> | 2012-2017 | | | <p>-ISTEP Boost</p> <p>-Study Tables</p> |
| <p>Intervention: Instruction Support Services</p> <p>Students who qualify for additional services will be provided extra instructional support.</p> <p>A. Special Education</p> <p>B. English Learners (EL)</p> <p>C. 504</p> | 2012-2017 | <p>-Principals</p> <p>- Teachers</p> <p>-EL Coordinator</p> <p>-Special Education Staff</p> <p>-Nurses</p> | <p>-School City of Hobart's Balanced Assessment System Framework</p> | <p>-School City of Hobart's Balanced Assessment System Framework</p> <p>-Professional Learning Communities</p> <p>-Common Planning Time</p> <p>-Skyward</p> <p>-TRC (District Web site)</p> <p>-IEP</p> <p>-504</p> <p>-Case Conferences</p> |

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| <p>Intervention: Family/Community Involvement</p> <p>1. All students will increase problem solving skills through opportunities for family/community participation.</p> <p>A. Skyward - Assignments/Grades/Discipline/Attendance</p> <p>B. Website - Homework Help and Tips</p> <p>C. Parent/Teacher meetings</p> <p>D. Homework Hotline</p> <p>E. Newsletters</p> <p>F. Facebook</p> <p>G. Google Classroom</p> <p>H. Online Assistance:</p> <ul style="list-style-type: none"> -Khan Academy -FASTT Math -Envisions | 2012-2017 | <ul style="list-style-type: none"> -Principals -Elementary Staff -Central Office Administration -Technology Department | <ul style="list-style-type: none"> -Parent/Teacher Conference Attendance -Monitoring Harmony usage -Monitoring Website usage | <ul style="list-style-type: none"> -Skyward Parent Information Packet -School City of Hobart Website Online Assistance: -Khan Academy -FASTT Math -Envisions - Fraction Nation -Google Classroom -Smore -Facebook -Class Dojo |
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| <ul style="list-style-type: none"> - Fraction Nation -Google Classroom -Smore -Facebook -Class Dojo <p>I. Naviance-Monitoring College and Career Planning</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> | 2012-2017 | <ul style="list-style-type: none"> -Administrators -Elementary Staff -Interventionists | <ul style="list-style-type: none"> -SCOH Balanced Assessment System Framework -Classroom Assessments | <ul style="list-style-type: none"> -Time for Professional Development -Professional Development Calendar -Book Studies |
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| <p>A. Curriculum Planning- Grade Level/Curriculum/Department Meetings</p> <ul style="list-style-type: none"> a. Identification of Critical Standards b. Curriculum Calendar/Curriculum Mapping c. Google Apps d. Skyward e. Web Publishing with SchoolWires <p>B. Data Analysis - ISTEP, Classroom Assessments, Pivot, SCOH's Balanced Assessment System Framework</p> <p>C. Best Practices - Book Studies, Grade Level/Curriculum/Department Meetings/DATA Meetings</p> <p>D. Professional Development - In-House Professional Development Calendar, Conferences</p> <p>E. RtI Teams</p> | | | <p>-Teacher Goal Sheets</p> <p>-Professional Development Enrollment</p> <p>-Grade Level Meetings</p> <p>-District Grade Level Meetings</p> | <p>-SCOH Balanced Assessment System Framework</p> <p>-Google Apps</p> <p>-Envisions</p> <p>-Pivot</p> <p>-Late Start Wednesdays</p> <p>-Common Plan Times</p> <p>-TRC</p> <p>-RTI Training</p> |
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