

Action Plan #3: Problem Solving	Last updated: 2017
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: <ul style="list-style-type: none"> • All students will compute accurately with and without a calculator • All students will demonstrate problem-solving skills in mathematics • All students will use technology research tools to locate, evaluate, and collect information in order to process data and report results • All students will use technology resources in developing strategies and making informed decisions for solving problems 	
Target Participants: All students in the Hobart Middle School Target Groups: Students who are achieving below and above proficiency level. Student Support: Students will participate in MTSS based on achievement and behavior levels. Students will participate in enriched, DI (differentiated instruction) and HA courses based on achievement levels.	
Interventions: <ol style="list-style-type: none"> 1. All students will demonstrate an increased ability to collect, organize, interpret, and display data using charts, tables, plots, and graphs across the curriculum. 2. All students will demonstrate an increased ability to compute and estimate with real numbers across the curriculum. 3. All students will demonstrate an increased ability to choose and apply appropriate problem solving strategies across the curriculum. 	
Evaluation: ISTEP Rubrics -Pivot -PSAT 8 -Khan Academy -Curriculum Maps and Pacing Guides -CFAs -Springboard-Embedded Assessment -Portfolios	
Timeframe for Implementation: 2017-2021	

Target Area of Improvement-Problem Solving

Actions	Schedule	Responsibilities	Monitoring	Resources
<p>1. Intervention: All students will demonstrate an increased ability to collect, organize, interpret, and display data using charts, tables, plots, and graphs across the curriculum. A. Students will create concept maps and graphic organizers.</p>	September 2017-2021	6-8 Math Teachers 6-8 Science Teachers	-Classroom assessments, -Common Formative Assessments -Formal Scales -Google Apps	-Templates, professional development, -Worksheets -Google Apps -Ask Rose -Khan Academy -Pivot -CFAs
B. Students will construct box-and-whisker graphs based on test scores.	September 2017-2021	7 Math Teachers	-ISTEP -Classroom assessments	-Student Test Scores -Pivot -Khan -DOE Resources
C. Students will use measurements in a variety of labs or activities.	2017-2021	6-8 Science, Family, and Consumer Science, and Project Lead The Way teachers	-ISTEP	-Meter Sticks -Science measuring instruments
D. Students will construct and interpret graphs.	2017-2021	6-8 Math, Science, Social Studies, Art, and Foreign Language teachers	-ISTEP Classroom assessments,	-Graph paper -Graphing calculators -Graph wall charts -Graph white boards -Rulers -Internet access -Textbooks
E. Students will understand the use of probability, data analysis, and statistics to support daily decision-making. Students will participate in project-based learning including STEM and STEAM. Students will use project based and problem solving.	2017-2021	6-8 Project Lead The Way teachers	-Classroom assessments	-Data / Statistics PLTW Resources
F. Students will analyze and interpret data to write expository/argumentative responses.	2017-2021	8 th grade Language Arts Teachers	-Classroom assessments	-Charts/graphs -Data -Google Apps

Target Area of Improvement-Problem Solving

Actions	Schedule	Responsibilities	Monitoring	Resources
2. Intervention: All students will demonstrate an increased ability to compute and estimate with real numbers across the curriculum.	2017-2021	6-8 Math Teachers 7 th grade Science Teachers	-ISTEP -Classroom Assessments	-Calculators -Teacher's Smart Board -Chromebooks -Khan Academy
A. Students will estimate before and check after problem solving.	September 2017-2021	6-8 Math Teachers	-ISTEP -Classroom Assessments -	-Hands-on-Equations -Algebra Tiles -Counters -Professional development -Chromebook -Pivot
B. Students will solve algebraic equations	September 2017-2021	6-8 th Math Teachers	-ISTEP -Classroom Assessments -Chromebook	-Calculators -Teacher's Smart Board -Pivot
C. Students will use calculators in a variety of labs or activities.	2017-2021	7-8 Science Teachers	-ISTEP	-Calculators -Teachers' smart board -calculators
D. Students will utilize mental math and estimation.	2017-2021	6-8 Project Lead The Way teachers	-Classroom Assessments	-Graph paper -Rulers -Tiles on floor
E. Students will practice math computation with nutrition facts.	2017-2021	8 th grade family and consumer science teachers	-Classroom assessments	-Classroom materials
F. Students will do math reading in music	2017-2021	6-8 Music Teachers	-Classroom assessments	-Worksheets -ChromeBooks
G. Students will work with note values and counting rhythms.	2017-2021	6-8 Music Teachers	-Standard of Excellence	-Read note values and counting

Target Area of Improvement-Problem Solving

Actions	Schedule	Responsibilities	Monitoring	Resources
H. Students will know basic math facts.	2017-2021	6-8 Math Teachers	-ISTEP -Classroom assessments	-Flashcards -Software -Chrome Books
I. Students will practice math skills through recipe amounts and sewing skills,	2017-2021	6-8 FACS Teacher	Teacher Created Assessment Tools	Tests and quizzes created by teacher Classroom Materials

<p>3, Intervention: All students will demonstrate an increased ability to choose and apply appropriate problem solving strategies across the curriculum.</p> <p>A. Students will draw pictures with labels for problem solving.</p>	2017-2021	6-8 Math Teachers	<ul style="list-style-type: none"> -ISTEP -Classroom Assessments -Formal Scales 	<ul style="list-style-type: none"> -Calculators -Professional development -Chrome Books -Google Apps -Ask Rose -Khan Academy -Math 180 -CCR
<p>B. Students will measure and draw angles and geometric shapes</p>	2017-2021	8 th grade Math Teachers, 6-8 PLTW teachers, 6-8 Art teachers	<ul style="list-style-type: none"> -ISTEP -Classroom assessments -ChromeBook 	<ul style="list-style-type: none"> -Safety compasses -Protractors -Rulers -Professional development -Chrome Books
<p>C. Students will demonstrate geometric transformations.</p>	2017-2021	8 th grade Math teachers	<ul style="list-style-type: none"> -ISTEP -Classroom assessments -CFAs 	<ul style="list-style-type: none"> -Tetris software -Graph paper -Graph wall chart -Graph white board -Dry-erase markers -Professional development -ChromeBooks
<p>D. Students will use the basic counting principle and tree diagrams for solving probability problems.</p>	2017-2021	7 th grade Math Teachers	<ul style="list-style-type: none"> -ISTEP -Classroom assessments 	<ul style="list-style-type: none"> -Spinners -Dice -Playing cards -Coins -ChromeBooks
<p>E. Students will use the concept of independent and dependent events for probability problems</p>	2017-2021	8 th grade Math Teachers	<ul style="list-style-type: none"> -ISTEP -Classroom assessments 	<ul style="list-style-type: none"> -Spinners -Dice -Playing cards -Coins -Chrome Books
<p>F. Students will convert Fahrenheit temperature to Celsius (and vice versa).</p>	2017-2021	8 th grade Science Teachers	<ul style="list-style-type: none"> -ISTEP -Classroom assessments 	<ul style="list-style-type: none"> -Calculators

Target Area of Improvement-Problem Solving

Actions	Schedule	Responsibilities	Monitoring	Resources
G. Students will solve equations by using Pass the Pen (error analysis).	2017-2021	Algebra Teachers	-ISTEP -Classroom assessments -CFAs	-Whiteboards -Dry-erase markers -Professional development -Chrome Book -Pivot
H. . Students will use proper math terms in a variety of labs or activities.	2017-2021	6-8 Science Teachers	-ISTEP -CFAs	- <i>Building Academic Vocabulary</i> by Marzano and Pickering --PIVOT
I. Students will have daily opportunities to connect math with everyday activities.	2017-2021	6-8 PLTW Teachers 6-8 P.E. Teachers	-Classroom assessments -Individual self check	-Classroom materials -Cardio and strength labs and equipment
J. Students will use unit pricing.	2017-2021	8 th grade Family and Consumer Science Teachers	-Classroom Assessment	-Classroom materials
K. Students will practice using metric measuring units.	2017-2021	6,8 grade Family and Consumer Science teachers	-Classroom Assessment	-Classroom Materials