Work in Progress

STEVENS POINT
AREA PUBLIC
SCHOOL DISTRICT

K-12 Mathematics Overarching Understandings

MATHEMATICAL PROCESSES

Students will understand that:

- Reasoning and logic can help them to perceive patterns, identify relationships, questions, evaluate and pursue ideas that lead to further understanding and deeper insight
- They can communicate the reasoning, process and result of the mathematical argument
- There are a variety of strategies that they can use to analyze real world applications
- Mathematics can be communicated using a variety of methods
- Mathematics is systematically organized
- To effectively study mathematics it is necessary to use reading and writing

NUMBER OPERATIONS AND RELATIONSHIPS

Students will understand that:

- Numerical information can be represented in many different forms
- The ability to express the relationship amongst sets of numbers provides the foundations for the rules of mathematics
- Estimation should be used to check the reasonableness of answers
- The problem in front of you is the member of a family of problems
- Number sense is a matter of necessity

GEOMETRY

Students will understand that:

- We can visualize the physical world by considering an object's position, orientation, and attributes
- Relationships exist among geometric figures
- The properties of geometric figures determine the construction of man-made objects and explain the structure of objects found in nature
- Geometric figures can change size and/or position while maintaining proportional attributes
- We can use tools and/or technology to determine relationships between geometric figures

MEASUREMENT

Students will understand that:

- What we measure influences how we measure
- Standard units of measure allow us to describe objects, interpret events and make comparisons in a way that can be universally understood
- You can use indirect measurements to measure inaccessible distances
- Estimation can be used to determine unknown quantities and check the reasonableness of solutions

STATISTICS AND PROBABILITY

Students will understand that:

- Citizens need to be well versed in the concepts and procedures of data analysis in order to make informed decisions
- The probability of an event occurring can be described numerically and used to make predictions about other events
- There are a variety of factors that impact the validity and reliability of data

ALGEBRAIC RELATIONSHIPS

Students will understand that:

- Algebra is the language of mathematics
- Much of the observable world can be characterized as having patterned regularity where a change in one quantity results in changes in other quantities
- Relationships help us formulate potential solutions for real-life problems
- Abstraction is what makes mathematics work