Standards Aligned SystemPennsylvania Department of Education

**Attend to precision.**

\*Develop their mathematical communication skills.

\*Use clear and precise language in their discussions with others and when they explain their own reasoning.

**Model with Mathematics.**

\*Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc.

\*Connect the different representations and explain the connections.

\*Use all of these representations as needed.

**Construct viable**

**arguments**

**and critique the reasoning of others.**

\*Construct arguments using concrete referents, such as objects, pictures, drawings, and actions.

\*Practice their mathematical communication skills as they participate in mathematical discussions involving questions like, “How did you get that?” “Explain your thinking,” and “Why is that true?”

\*Explain their own thinking, but listen to others’ explanations.

\*Decide if the explanations make sense and ask questions.

**Grade 1**

**Grade Level Emphasis**

**PA Core Standards**

**Standards for Mathematical Practice**

***Tool Developed by***

**Central Intermediate Unit # 10**

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**Reason abstractly and quantitatively.**

\*Recognize that a number represents a specific quantity.

\*Connect the quantity to written symbols.

\*Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning).

**Make sense of problems**

**and persevere in solving them.**

\*Realize that doing mathematics involves solving problems and discussing how they solved them.

\*Explain to themselves the meaning of a problem and look for ways to solve it.

\*Use concrete objects or pictures to help them conceptualize and solve problems.

\*Check their thinking by asking themselves, “Does this make sense?”

\*Willing to try other approaches.

**Use appropriate tools**

**strategically.**

\*Begin to consider the available tools (including estimation) when solving a mathematical problem.

\*Decide when certain tools might be helpful.

\*Decide it might be best to use colored chips to model an addition problem.

**Look for and express**

**regularity in repeated**

**reasoning**.

\*Notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract, “ten” and multiples of “ten,” they notice the pattern and gain a better understanding of the place value.

\*Continually check their work by asking themselves, “Does this make sense?”

**Look for and make use of structure.**

\*Begin to discern a pattern or structure. For instance, if students recognize 12+3=15, then they also know 3+12=15 (Commutative property of addition). To add 4+6+4, the first two numbers can be added to make a ten, so 4+6+4=10+4=14.

**MP 2**

**MP 8**

**MP 3**

**MP 1**

**MP 7**

**MP 5**

**MP 6**

**MP 4**