

Exemplars  
**Preliminary Planning Sheet for a Mathematics Portfolio Piece/Task**

Title of Task \_\_\_\_\_ Content Strand(s) Addressed \_\_\_\_\_  
 State Standard(s) Addressed \_\_\_\_\_ Program Link \_\_\_\_\_

**Underlying Mathematical Concepts**

The basic mathematical concept(s) that a student would need to solve the problem.  
 e.g.-AB pattern but not odd/even numbered pattern.

**Problem Solving Strategies/Representation**

List all possible strategies that a student could use to solve the problem. Most students will use a "typical" strategy but a few may use an unexpected strategy for that grade level.

**Mathematical Language**

List the mathematical terms and/or notation that the student's solution could include. Some students will use terms not expected at their grade level so some should be included on the preliminary planning sheet.

**Possible Solution(s)**

Examples across a range of strategies can be included. It is not expected that a student be able to apply them all. A range is suggested in order to meet the needs of all students.

**Connections**

List possible connections students could make. The connections should include a range from simple mathematically mathematically relevant observations to the more complex.  
 e.g.-the pattern is counting by two vs the rule is  $D + D = B$ .

**Related Tasks**

Other tasks linked to this grade level expectation can be found in the Resource Binder.

## Exemplars Rubric Assessing Student Work Support

**Expert**—The student at this performance level has gone beyond the expectations at her/his grade level in all criteria of the rubric.

- P/S** An efficient or alternate strategy is used or the student brings prior learning to the solution.  
**R/P** All facts, calculations, or conventions are correct and provided to the proper degree of precision or measurement. Correct answers for all parts of the problem are achieved and supported by work.  
**Com.** *Precise, accurate and appropriate mathematical language is used to communicate the solution with no flaws in accuracy. (Uses mathematical terms from the task correctly and brings at least one additional formal term/notation to the solution as well as uses at least one formal mathematical term/notation above the student's grade level.)*  
**Con.** Connections are made to extend the student's solution (i.e. generalize and apply a rule, relate to another problem and state mathematical link(s), verify answer by using another strategy or form of computational thinking. Students at this level bring other math concepts to the problem. For example, a 2<sup>nd</sup> grade student explains that twenty five cents is  $\frac{1}{4}$ , 25% or .25 of a dollar )  
**Rep.** Mathematical representation(s) are sophisticated, contain accurate and appropriate data, are properly executed and are used to analyze, extend thinking, or clarify student thinking.

*Note—A student's Expert solution should contain no errors. Since the student's solution goes beyond the standard, all use of mathematical language, representation(s) and connections noted in the solution should be accurate.*

**Practitioner**—A student at this performance level meets the expectations of her/his grade level.

- P/S** A student's strategy and answer are correct.  
**R/P** Facts, calculations, or conventions may contain minor flaws, but do not affect the outcome of a correct solution.  
**Com.** Accurate and appropriate mathematical language is used to communicate the solution. (Uses at least 2 formal mathematical terms/notations correctly. A student can attempt language, connections, representations etc. and is not "docked" for incorrect use.)  
**Con.** One correct mathematically relevant connection is made.  
**Rep.** The mathematical representation contains appropriate and accurate data and is properly executed.

**Apprentice**—A student at this performance level can range from beginning to meet the standard to almost meeting the standard. This performance level has the widest range of student performance.

- P/S** Inaccuracies occur in important facts, calculations, or conventions that lead to an incorrect answer.  
**R/P** Correct work is present for parts of the problem and those parts are supported by work.  
**Com.** Mathematical language used to communicate the solution may have some minor flaws in accuracy. (Uses at least 1 formal math term/notation correctly.)  
**Con.** Attempts to make a mathematical connection but it is not correct  
**Rep.** The mathematical representation contains appropriate and accurate data, but may not be labeled or executed completely.

**Novice**—A student at this performance level has very little to no understanding of the underlying mathematics of the problem.

- P/S** Major inaccuracies occur in important facts, calculations or conventions that lead to an incorrect answer or a correct answer may be stated but is not supported by the student's work or no work is present.  
**R/P** Mathematical reasoning used to communicate the solution is missing or has major flaws in accuracy.  
**Com.** No formal mathematical terms/notations were used.  
**Con.** No connections were made  
**Rep.** The mathematical representation is inappropriate, contains flawed data, is not labeled, or properly executed, or no representation was attempted.