ENVISION SCHOOLS GRADUATION PORTFOLIO PERFORMANCE OUTCOMES
Mathematics Problem Solving Application

To fulfill the mathematics problem solving application graduation portfolio requirements, students must produce an artifact that includes a final solution of a unit problem. The artifact must include identification of concepts and procedures used, and explanations of problem solving approaches and steps in reasoning.

The work selected for this entry must be IMP III or IMP IV (minimum Algebra II, Advanced Geometry), and should include evidence that the student can creatively present the final solution to the problem. The artifact, together with the reflection, must demonstrate the following in a written or multimedia format:

PROBLEM SOLVING:

- apply and adapt a variety of appropriate strategies, such as using diagrams, looking for patterns, or trying special values or cases, to solve problems;
- monitor and reflect on the process of mathematical problem solving;
- select and use mathematical procedures to accurately solve the problem.

REASONING AND/OR PROOF:

- select and use various types of reasoning and methods of proof;
- develop and evaluate mathematical arguments and/or proofs;
- justify the completeness of a solution.

COMMUNICATION:

- communicate their mathematical thinking coherently and clearly through diagrams, graphs, symbols, and words;
- use the language of mathematics to express mathematical ideas precisely.

CONNECTIONS:

- recognize and use connections among mathematical ideas;
- explain how mathematical ideas interconnect and build on one another;
- apply mathematics in contexts outside of mathematics.