Challenge

Planning Notes

- Discuss the rubric and expectations for this Challenge.
- Students may benefit from doing this Challenge over two class periods.
- Read the instructions for #1 aloud. Demonstrate one example of solving and matching after the pieces are cut out.
- Provide students with **BLM 7–7 Polynomial Puzzle**. Have students first complete #1, then read and discuss the assignment for #2.
- Students who struggle with dexterity may benefit from having **BLM 7–8 Blank Puzzle Pieces** copied onto 11 × 17 paper, or using index cards cut into squares.
- Have students write six multiplication questions and six division questions. After they have solved the questions, correct their work before they make their puzzles. This will ensure the puzzles are correct before they give them to another student.
- Allow students to create questions according to their ability, even if the expressions are simple.

Common Errors

- Some students may rush through writing and solving 12 different expressions, resulting in errors.

R$_x$ Encourage students to use questions from their examples and assignments. Allow them to work in pairs to create questions.

The chart below shows the Rubric for the Challenge and provides notes that specify how to identify the level of specific answers for this project.

Score/Level	Holistic Descriptor	Specific Question Notes
5 **(Standard of Excellence)**	❑ Applies/develops **thorough** strategies and mathematical processes for making **significant** comparisons/connections that demonstrate a **comprehensive** understanding of how to develop a complete solution ❑ Uses **efficient** and **effective** procedures that may contain a **minor mathematical error** that does not affect understanding ❑ Uses **significant** mathematical language to explain understanding and provides **in-depth** support for the conclusion	• provides a complete and correct solution
4 **(Above Acceptable)**	❑ Applies/develops **thorough** strategies and mathematical processes for making **reasonable** comparisons/connections that demonstrate a **clear** understanding ❑ Uses **reasonable** procedures that may contain a **minor mathematical error** that may hinder the understanding in one part of a complete solution ❑ Uses **appropriate** mathematical language to explain understanding and provides **clear** support for the conclusion	• provides a complete response with one or two minor errors *or* • provides a correct and complete solution with a maximum of two repetitions
3 **(Meets Acceptable)**	❑ Applies/develops **relevant** strategies and mathematical processes for making **some** comparisons/connections that demonstrate a **basic** understanding ❑ Uses **basic** procedures that may contain a **major mathematical error** or **omission** ❑ Uses **common** language to explain understanding and provides **minimal** support for the conclusion	• correctly matches equivalent expressions for #1 and makes an initial start to #2 (begins writing expressions but they do not vary in type) *or* • attempts to match some pairs in #1, but few are correct; completes at least 12 equivalent pairs with some repetition for #2 *or* • correctly completes either #1 or #2 **Note:** Twelve pairs correctly completed with no further work earns a maximum score of 3.
2 **(Below Acceptable)**	❑ Applies/develops **some relevant** mathematical processes making minimal comparisons/ connections that lead to a **partial solution** ❑ Uses **basic** procedures that may contain **several major mathematical errors** ❑ Communication is **weak**	• correctly matches 5 to 11 equivalent expressions in #1 *or* • completes a list of equivalent expressions for #2 with errors or repetitions in the use of constant, monomial, or polynomial terms, or all use the same process
1 **(Beginning)**	❑ Applies/develops an **initial start** that may be **partially correct** or could have led to a correct solution ❑ Communication is **weak** or **absent**	• completes a maximum of five pairs correctly matched for #1 *or* • begins #2 by writing some expressions but does not match them