Graphic Organizer

- You may wish to copy the Graphic Organizer onto 11 × 17 paper to allow more room for students to work.

Math Link: Wrap It Up!

Planning Notes

- Discuss the possible dimensions (radius and depth) of a cylindrical wading pool.
- Use a visual to show students that the sand area for beach volleyball is in the shape of a rectangular prism. Discuss what the depth of the sand might be.
- Provide students with metre sticks so they can state realistic dimensions for each shape.
- Provide students with rulers and compasses for drawing their park designs. You may wish to use 11 × 17 paper for this activity.
- Some students may benefit from working in pairs. Each person can be responsible for one shape.
- Remind students that for part d), they need to substitute an expression into a formula. In part e), they will use the expression and a depth of their choice.

Common Errors

- Some students will have difficulty substituting polynomials into formulas and simplifying.

R$_x$ Post an example. Encourage students to use brackets. Review the distributive property. Encourage students to rewrite expressions when multiplying polynomials so that the monomial is first.

The chart below shows the Rubric for the Math Link: Wrap It Up! 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 **Note:** A response that has a complete and correct response with all dimensions correctly labelled in part c) but not in parts a) or b) still receives a 5.
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 weak communication or missing justification in one part of the exercise; may solve the question without stating the depth of one of the objects, or the depth of one is unreasonable *or* • provides a complete response with one multiplication error in part d) which is used correctly in part e) *or* • provides a complete response with a calculation error in part e)
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 completes parts a) to d); one of the values in part b) may not be reasonable for the shape, but demonstrates a basic understanding of the problem; communication may be weak *or* • provides a correct response to parts a) to c) and part e) based on an incorrect part d) *or* • provides partial correct answers to all parts of the exercise
2 **(Below Acceptable)**	❑ Applies/develops **some relevant** mathematical processes for making minimal comparisons/ connections that lead to a **partial solution** ❑ Uses **basic** procedures that may contain several major mathematical errors ❑ Communication is **weak**	• correctly completes parts a) and b) *or* • provides a correct response to part c) leaving parts a) and b) blank or incomplete **Note:** Values in part b) should be reasonable.
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**	• provides a correct response to part a) or b) *or* • provides a correct start to part c) *or* • provides a correct start to part d); writes the expression but does not multiply it, or the multiplication is incorrect **Note:** Values in part b) should be reasonable.