CCSS Math Practices Alignment Sample
Activity: "Comparing π and Roots" for TI-Nspire™ Technology

Note: This alignment sample is intended to highlight opportunities to use TI Technology to help facilitate students' participation in the CCSS Standards for Mathematical Practice. The prompts and examples provided here are from the Teacher and Student activity documents and demonstrate how the activity can be used to engage students in the Practices. It is possible the activity can be used to engage students in the other Math Practices that are not specified here.

1. Make sense of problems and persevere in solving them.

Students should:
- Understand and explain the meaning of the problem.
- Analyze given information and determine how it may be used in the problem.
- Identify additional information needed to solve the problem.
- Look for entry points into the problem or identify different solution paths.
- Make a plan for solving the problem.
- Check their answers and ask, "Does the answer make sense in terms of the problem?"

TI-Nspire™ Technology and Teaching Tips:
- If students have a hard time coming up with values for the side lengths of the triangle, help them by asking whether we can use irrational numbers for the radius or the sides of the right triangle. Provide students with one example, and let them come up with different examples.

TI-Nspire™ Navigator™ System Extensions:
- Use Class Capture as students work through a problem. Choose an interesting solution to discuss as a class.
- Use Quick Poll to gather students' solutions to a problem. Have students discuss the reasonableness of each response.

2. Reason abstractly and quantitatively.

Students should:
- Understand and explain the meaning of quantities and relationships in the problem.
- Be able to represent a problem using words, numerical expressions or equations, graphs and diagrams.
- Consider the units involved in the problem and use appropriate conversions, as needed.

TI-Nspire™ Technology and Teaching Tips:
- Allow students to discuss how they chose values for the sides of their triangles. Ask them to explain why they would or would not use these methods for solving the problem.

TI-Nspire™ Navigator™ System Extension:
- Take a Class Capture to display student examples. Allow students to discuss how they chose values for the sides of their triangles. Ask them to explain why they would or would not use these methods for solving the problem.

5. Use appropriate tools strategically.	
Students should: - Consider the benefits and limitations of the available tools to decide which are appropriate for solving a given problem. - Understand how technology can help visualize and explore results, find patterns and compare relationships. - Use technology to model problems and to analyze and justify their results. - Use technology to deepen their understanding of concepts.	*TI-Nspire™ Technology and Teaching Tips:* - Ask students whether the calculator provides the exact or the approximated values. Help students realize that computed values are decimal approximations and thus are rational numbers. *TI-Nspire™ Navigator™ System Extension:* - Use Live Presenter to allow students to share their solutions with one another. - Use Quick Poll to assess and then start a discussion about the different tools and strategies the students consider useful to solving the problem.
6. Attend to precision.	
Students should: - Use clear definitions and precise mathematical language when justifying their conclusions. - Use correct symbols in expressions, label graphs accurately, specify correct units and appropriately use estimation to solve problems. - Express numerical answers with the appropriate degree of precision.	*TI-Nspire™ Technology and Teaching Tips:* - Discuss with students why measurements are usually approximations of actual values and why we cannot determine if measured values are an exact value. Let students use a ruler to measure the length of a segment to the nearest inch, half-inch, quarter-inch, and eighth-inch. Students should realize that their measurements are approximations that depend on the precision of the ruler. *TI-Nspire™ Navigator™ System Extension:* - Use Class Capture to view students' strategies for solving a problem and discuss the benefits of the selected strategies. Be sure students use correct symbols and precise mathematical language to express ideas and solutions.
8. Look for and express regularity in repeated reasoning.	
Students should: - Discern patterns in calculations and formulas. - Use previous knowledge to find and apply general methods to solve problems. - Attend to details and evaluate the reasonableness in intermediary results.	*TI-Nspire™ Technology and Teaching Tips*: - Discuss how to approximate the circumference of circles given the length of the radius and the hypotenuse of right triangles given the lengths of the sides. *TI-Nspire™ Navigator™ System Extension:* - Ask students to graph a function that fits certain criteria. Use Class Capture to start a discussion about how the circle and the hypotenuse of the triangle are related.

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