This lesson can be adapted for younger students to practice other computational math concepts. In addition to the content math standards, students will strengthen logical thinking skills and time management.

**Common Core Standards:**

- **CCSS.MATH.CONTENT.6.NS.B.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **CCSS.Math Practice 6** Attend to precision.

**Objectives:**

Students will practice adding, subtracting, and multiplying multi-digit numbers with decimals.

**Materials:**

- 3x3 Rubik’s Cubes
- Pencils & paper for math calculations

**Background Knowledge:**

Students should already know the procedures and rules for adding, subtracting, or multiplying multi-digit numbers with decimals.

**Procedure:**

**With students:**

1. Assign a numerical value to each color on the Rubik’s Cube. For the first activity, these will be single digit numerals. *(Example: Yellow = 1, Red = 3, Blue = 5, Green = 7, Orange = 9, and White = 0)*
   - Record these assignments on the board where students can reference them, and where they can be changed if desired.

2. Explain that the center tile on each face will be used to identify the face ("green face" means the face with the green tile in the center) and will also be the decimal point in the number.

3. Show students how to ‘read’ the face of the cube, by starting at the top row, reading from left to right (see example).
4. Create problems for the students and challenge them to be the student with the largest (or smallest) answer.

Example:
Red face + White face

\[
\begin{align*}
\text{Red face:} & \quad 3195.3170 \\
+ \quad & \\
\text{White face:} & \quad 0517.9371 \\
= \quad & \\
\text{Total:} & \quad 3713.2541
\end{align*}
\]

5. Students can also be challenged to create the largest (or smallest) answer by being allowed a few seconds to manipulate (twist) the cube after the problem is announced.

Technology Connection:
If you do not have a Rubik’s Cube for each student, or want all students to use the same scramble, you can use an online Rubik’s Cube that can be scrambled:
https://www.grubiks.com/puzzles/rubiks/cube-3x3x3/
Or

Variations
- Depending on the ability levels of your students, you can choose the operations to be used, the value of the colors, and the number of tiles to be included.
- You can use single digit numbers and practice problem solving across just one row of the cube. Start with + + and just one row of the cube, increase to + x, and then beyond. You could also focus on the four corners and use all four operations. Recommended order is + - x
- Require that all students make at least three twists to their cube before announcing the next sequence. Allow students to make twists to create the best scenario (largest sum/product), or just to search the six sides to find their best outcome.

Notes to Teacher:

3x3 Rubik’s Cubes are available to borrow from the *You CAN Do the Rubik’s Cube* Lending Program at no cost other than return shipping.
[www.youcandothecube.com/lending-library](http://www.youcandothecube.com/lending-library)