St. Theresa Catholic School
2025 Summer Math Requirements
Students Entering Grade 8

Welcome to St. Theresa!
Congratulations on completing 7th grade — you're officially an 8th grader!

As you begin this exciting new chapter, remember that success in 8th-grade math depends on a strong foundation in the skills you learned last year. This summer you will practice your 7th-grade math concepts to a proficient level.

Step 1: Choose Your Summer Math Option (With a Parent)

Pick one of the following options with your parent in the **first week of summer**:

1. 👩 **Brophy Camp** – You must bring the certificate of completion on your first day of school to receive full credit without taking a test. Students who don't bring the certificate will be expected to take the summer requirement test.

2. 💻 **Independent Review Using Online Resources**: To practice 6th–grade skills, use websites like the following:
    - Mathnasium
    - IXL
    - Math Antics
    - Khan Academy https://www.khanacademy.org
    - Math with Mr J (on YouTube), such as https://www.coolmath4kids.com/quizzes, for practicing math fact fluency

3. 📘 **Summer Math Workbook**: Buy the Spectrum Math 6th-grade review book and complete a few pages each week. You can use your math book or journal as well. On the first day of school, a test that includes all of the skills will be given. It's recommended that you complete about **20 pages a week** rather than cramming this all in at the end of summer. If you are focused, each page should take **1–3 minutes**. Use this link if you would like to order the **7th Grade Spectrum book**

4. 👩 **Tutoring** – Work with a tutor to review and practice these skills.

🌞 Step Two - Review Summer Essential Skills

🎯 **Goal:** Practice 1–2 skill areas each week. Work 3–4 times per week for 30-45 minutes.

Rational Numbers (All Four Operations)

Addition/Subtraction

- ***Addition***- *Example: 3.175 − (−2.486) + 0.045 = 5.706*
- **Add and subtract fractions with unlike denominators and mixed signs.**
  Example: −7/8 + 3/4 − 1/6 → Common denominator is 24 → −21/24 + 18/24 − 4/24 = −7/24

- ***Combine operations using parentheses and multiple signs.***
  Example: −5.32 + (3.6 − 7.48) = −5.32 + (−3.88) = −9.2

Multiplication

- ***Multiply multi-digit decimals with both positive and negative values.***
  Example: −12.45 × 3.6 = −44.82

- ***Multiply multiple fractions and mixed numbers in a single expression (then simplify).***
  Example: 1¾ × (−2/3) × 3½ = (7/4 × −2/3 × 7/2) = −49/12 = −4 1/1

Division

- ***Divide multi-digit decimals with remainders and negative values.***
  Example: −134.25 ÷ 2.5 = −53.7

- ***Divide complex fractions involving mixed numbers and improper fractions.***
  Example: (−1 3/4) ÷ (2/5) = (−7/4) × (5/2) = −35/8 = −4 3/8

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2. Integers - Use rules for each operation i.e. Song - Row, Row your Boat

a) Calculate: −15 + 28 - 15

b) Calculate: 36−(−19)

- c) Calculate: −7×(−8)-7
- d) Calculate: −144÷12-144

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3. One-Step and Two-Step Equations

- Identify the variable.

- Use **inverse operations** to isolate the variable (undo addition/subtraction or multiplication/division).
- Follow the **reverse order of operations**.
- **Example**
  X + 5 = 12x + 5 = 12x +5 =12

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4. Functions: Tables, Equations, and Graphs

- Given an **equation**, complete a **function table** (input/output).
- Given a **graph** or **table**, write the corresponding **equation**.
- Understand how to:
  - Identify **rate of change** - pattern and y-intercept.
  - Graph linear equations from a table or equation.
  - *Example: Equation: y = 2x + 1 - Create function table and graph*

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5. Pythagorean Theorem

- Know the **formula**: a2+b2=c2 where cc is the hypotenuse.
- A right triangle has legs measuring **9 units** and **12 units**.
  Find the length of the
- **A** = 9 in
  b = 12 in
  You are solving for cc
- Use a calculator when needed, don't forget to label

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6. Transformations

- ***Translations (slides)***
  Example: (2,3) → (2+4, 3−1) = (6,2)
- ***Rotations (turns around a point)***
  Example: Rotate (1,2) 90° clockwise around the origin → (2, −1)
- ***Reflections (flips across a line of symmetry)***
  Example: Reflect (3,−4) over the x-axis → (3,4)

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7. Area and Volume

Area - know all 2D formulas for area**:** squares, rectangles, triangles, circles, parallelograms, and trapezoids.

- Find the area of a square with side length 7 cm.
- Find the area of a Triangle with a base of 12 and a height of 9
- Circle - Radius of 7
- Parallelogram - base is 16, height is 12

Volume of cubes, rectangular prisms, and cylinders.

- Cube - 53cm =125cm3 - L x W x H
- Rectangular Prism - 8×3×2 =48m3 - LxWxH
- Cylinder - Volume = A cylindrical container has a radius of 3 cm and a height of 12 cm. πr2h

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8. Order of Operations Problems (with All Operations)

*(Use **PEMDAS**: Parentheses, Exponents, Multiplication/Division, Addition/Subtraction)*

8+(32−5)×2÷48 + (3^2 - 5) × 2 ÷ 48+(32−5)×2÷4

- ☐ *Exponents: 32=93^2 = 932=9*
- ☐ *Parentheses: 9−5=49 - 5 = 49−5=4*
- ☐ *Multiply/Divide: 4×2÷4=24 × 2 ÷ 4 = 24×2÷4=2*
- ☐ *Add: 8+2=108 + 2 = 108+2=10*
  Answer: 10