

Substitute Guide: Fractions and Decimals: Compare and Combine

Grade: 4 **Subject:** Mathematics **Time:** ~45 min core + ~15 min extension Math

Learning goal (plain language)

Students practice **equivalent fractions**, **comparing fractions**, **adding and subtracting fractions that have the same bottom number**, and **writing tenths and hundredths as fractions and decimals**. **You do not need a math background to run this.** Every method and a worked example are printed in the student packet. Students **show their work**; **you do not need to teach the method** — the packet does the teaching. Your job is to hand it out, read the start script, keep the room on task, and collect the packets. This whole guide takes about 5 minutes to read.

Standards alignment

Framework: 19 TAC §111.6 (Grade 4 Mathematics). Number and operations — fractions and decimals.

- **Equivalence & comparison:** find equivalent fractions and compare two fractions with the same denominator using a model.
- **Fractions:** add and subtract fractions with **like (equal) denominators**.
- **Connections:** relate a fraction with a denominator of 10 or 100 to its decimal (tenths and hundredths).

Provisional — pending educator verification against the current official TAC source.

(Standards are paraphrased here, not quoted. Please confirm codes and wording against your official source. This is **not** a claim of TEKS alignment.)

Setup Before class (5 min)

- Count and hand out one **student packet** per student.
- Confirm each student has a **pencil**. A **basic calculator is allowed but not required**; students who have one may use it.
- Write the date on the board and remind students to fill in the name line.
- Keep the **answer key** with you — it is a separate file and is **not** in the student packet.

Materials What's needed

- Printed student packet (4–6 pages) per student.
- Pencil per student; a basic four-function calculator is optional.
- This guide and the separate answer key (teacher only).
- No technology, no internet, no special supplies, no physical manipulatives.

Timing Suggested pacing (~45–60 min)

Segment	Time	What students do
Start — Warm-up	5 min	Q1–Q2 (name a fraction, which is bigger)
Build — Study the math	5–10 min	Read reference box, worked example, area model; Q3–Q4
Apply — Use what you know	20–25 min	Q5–Q8 (compare, ribbon story, fraction–decimal match, error analysis)
Explain — Justify (Answer/Model/Why)	5–10 min	Q9 short explanation
Close — ACE	5 min	Articulate / Connect / Extend
Continue — early finishers	optional ~15 min	Draw a model for 4/6

Script Read aloud to start

"Today's assignment is a paper math packet called *Fractions and Decimals: Compare and Combine*. You will work by yourself with a pencil. A basic calculator is allowed if you have one, but you do not need one. The most important rule: **show your work** — write down the steps you use, not just a final answer. Everything you need is printed in the packet, including a worked example and a picture that shows how to add fractions. Start with the warm-up, then read the Build section before the Apply questions. If a question is tricky, skip it and come back. Put your name, class period, and date at the top now. You have about 45 minutes; raise your hand if you need help reading a question."

Support When students ask for help

- **Students show their work; you do not need to teach the method.** Point them back to the printed **reference box**, the **worked example**, and the **picture (Figure 2)** — the method is right there.
- **You may read any part aloud** to a student or the class.
- If a student is stuck adding fractions, prompt with "Are the bottom numbers the same?" and "If they match, you add just the tops and keep the bottom" — rather than giving the answer.
- For comparing, remind them that when the bottoms match, the fraction with the bigger **top** is bigger.
- For the decimal match, have them read the fraction aloud: "three tenths" is 0.3; "three hundredths" is 0.03.
- It is fine if a student cannot finish the optional early-finisher challenge.

Access Accommodations & language support

- **Read-aloud** of any question is allowed for all students.
- Point students to the **worked example**, the short numbered **steps** in the reference box, the **area model**, and the **sentence starters** for Q9 and ACE.
- A **calculator is allowed** for any student who wants one — this removes the arithmetic barrier so students can focus on the reasoning.
- Extended time is fine; the core can stop after Q9 if time runs short.
- Students may show work with numbers, simple pictures, and short phrases if writing full sentences is a barrier, as long as the reasoning is clear.
- The packet is grayscale-safe — pictures use patterns, not color, so it prints and reads clearly in black and white.

Tools Allowed & not allowed

Allowed: pencil, the printed packet, a basic (four-function) calculator, quiet self-read-aloud. **Not needed / not allowed:** phones, internet, graphing/AI calculators, or getting answers from another student.

Collect at the end: Collect every packet, whether finished or not, with names on them. Stack them for the teacher. Note on a sticky how far most students got and any questions that caused confusion. Answer key: The **answer key is a separate file** (answerkey.html) and is for the teacher only. Please do not hand it to students.

Teacher follow-up (for the returning teacher)

The highest-value items to review next class are the **error analysis (Q8)** and the **justification (Q9)**, which reveal the "add the denominators" misconception and whether students understand *why* the bottom stays the same when denominators are alike. Watch for "**bigger bottom = bigger fraction**" in Q2 and Q5, and the **0.3 vs 0.03** place-value slip in Q7. The separate answer key lists worked steps, alternate strategies, common misconceptions, and a 3-point rubric for Q9.

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