

Substitute Guide: Multiplication and Fair Shares

Grade: 3 **Subject:** Mathematics **Time:** ~45 min core + ~15 min extension Math

Learning goal (plain language)

Students practice **multiplication as equal groups and arrays** and **division as fair sharing**, with small numbers within 100. **You do not need a math background to run this.** Every method and a picture example are printed in the student packet. Students **show their work** (they may draw dots or arrays); **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 §111.5 (Grade 3 Mathematics). Number and operations — multiplication and division.

- **Multiplication:** represent multiplication as equal groups and as arrays (rows $\times$ columns).
- **Division:** represent division as sharing a total into equal groups (fair shares).
- **Connections:** multiplication and division are related ($3 \times 4 = 12$, so $12 \div 3 = 4$).

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.)

Setup Before class (5 min)

- Count and hand out one **student packet** per student.
- Confirm each student has a **pencil**. A **calculator is not required**; a basic calculator is allowed for any student who has one.
- 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 (about 4 pages) per student.
- Pencil per student; a basic four-function calculator is optional (not required).
- This guide and the separate answer key (teacher only).
- No technology, no internet, no special supplies, no physical manipulatives — students draw to model.

Timing Suggested pacing (~45–60 min)

Segment	Time	What students do
Start — Warm-up	5 min	Q1–Q2 (skip-count by 5; count 3 groups of 4)
Build — Study the math	5–10 min	Read reference box, worked example, array picture; Q3

Segment	Time	What students do
Apply — Use what you know	20–25 min	Q4–Q7 (equal-groups story, array match, fair share, find the mistake)
Explain — Tell how you know (Answer/Picture/Why)	5–10 min	Q8 short explanation
Close — ACE	5 min	Articulate / Connect / Extend
Continue — early finishers	optional ~15 min	Draw 6×2 as groups and as an array

Script Read aloud to start

"Today's work is a paper math packet called *Multiplication and Fair Shares*. You will work by yourself with a pencil. You do not need a calculator, but you may use a basic one if you have it. The most important rule: **show your work** — you may draw dots or groups to help you. Everything you need is printed in the packet, including a picture that shows how it works. Start with the warm-up, then read the Build part before the Apply questions. If a problem is tricky, skip it and come back. Put your name and the date at the top now. You have about 45 minutes. Raise your hand if you need help **reading** a question — I can read any part out loud."

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 **array picture (Figure 2)** — the method is right there.
- **You may read any part aloud** to a student or the whole class.
- If a student is stuck, prompt with "Can you draw the groups?" or "How many are in each group?" rather than giving the answer.
- For a fair-share problem, suggest they draw the groups and "deal out" one at a time, like dealing cards.
- 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 — this packet is written to be read aloud.
- Point students to the **worked example**, the **array picture**, and the **sentence starters** for Q8 and ACE.
- A **calculator is allowed** (not required) for any student who wants one, so the focus stays on the groups-and-sharing idea, not the arithmetic.
- Extended time is fine; the core can stop after Q8 if time runs short.
- Students may answer with **drawings and numbers** instead of full sentences if writing is a barrier, as long as the thinking is clear.
- The packet is grayscale-safe — pictures are plain black-and-white dots and arrays, so they print and read clearly in black and white.

Tools Allowed & not allowed

Allowed: pencil, the printed packet, drawing dots/arrays, 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 **find-the-mistake item (Q7)** and the **fair-share explanation (Q8)**, which reveal the "unequal groups" and " $\times/\div$ mix-up" misconceptions. Watch for **adding instead of multiplying** in Q4 and **skip-counting by 1** in Q1. The separate answer key lists worked steps, alternate strategies, common misconceptions, and a 3-point rubric for Q8.

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