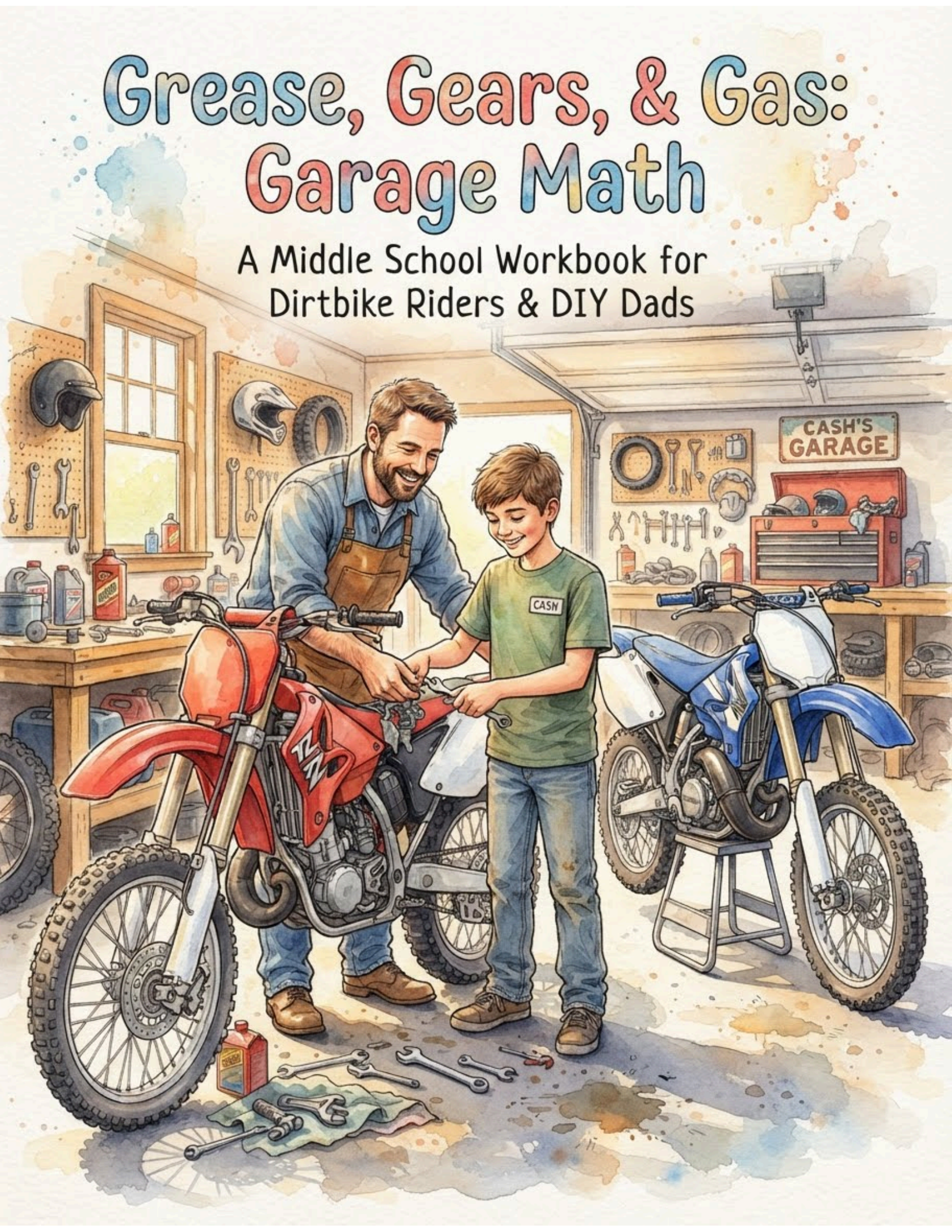
Grease, Gears, & Gas: Garage Math

A Middle School Workbook for Dirtbike Riders & DIY Dads



🔧 GREASE, GEARS, & GAS

Garage Math for Dirtbike Riders (6th Grade Fraction Multiplication)

💡 The Mechanic's Rule of Thumb

> *"A wise man thinks ahead, but a fool flags his own stupidity." —Proverbs 13:16 (The Message)*

A great mechanic always double-checks his specs and measurements before tightening the bolts!

- **To Multiply Mixed Numbers:** Always change them into **improper fractions** first!
  Example: 2 ½ = (2 × 2 + 1)/2 = 5/2
- **Multiply Straight Across:** Multiply the top numbers (numerators) together, and the bottom numbers (denominators) together.
- **Simplify:** Reduce your final answer to its lowest terms so it fits perfectly on your measuring tools.

GARAGE DAD JOKE #1

Dad:"Hey son, why did the dirtbike refuse to start?"
You: "I don't know, bad spark plug?"
Dad:"No, it was just two-tired!"



Problem 1: Mixing the Perfect Two-Stroke Fuel

You and your dad are mixing a fresh batch of fuel for your two-stroke dirtbike. You need to fill up a small auxiliary jug with exactly **2 ½ gallons** of premium fuel mix. Your dad tells you that exactly **⅖ of that total volume** needs to be high-octane racing fuel, and the rest is standard premium gas.

Your Goal: Calculate exactly how many gallons of high-octane racing fuel you need to pour into the jug.

2 ½ × ⅖ = _____ / 2 × ⅖ = _____ Gallons

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GARAGE DAD JOKE #2

Why did the torque wrench go to therapy?

Because it was under too much pressure and always felt completely twisted!

Problem 2: Gapping the Spark Plug

To get the crispest throttle response, you need to gap your dirtbike's spark plug. The factory specifications say the gap should be exactly **$3/32$ of an inch**. However, your dad's custom heavy-duty racing ignition system requires a wider gap that is exactly **1 ⅓ times the factory width**.

Your Goal: Find the new width needed for your custom spark plug gap.

(Hint: Change 1 ⅓ into an improper fraction before multiplying!)

$3/32 \times 1\ 1/3 = 3/32 \times$ _____ / 3 = _____ of an Inch

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Problem 3: The Rear Sprocket Upgrade

You are changing out your rear sprocket to get more low-end torque for trail riding. Your stock rear sprocket has **48 teeth**. The heavy-duty climbing sprocket you picked out has **1 ⅛ times as many teeth** as the stock one.

Your Goal: Calculate how many teeth are on your new climbing sprocket.

48 × 1 ⅛ = 48 / 1 × ____ / 8 = _____ Teeth

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"As iron sharpens iron, so one man sharpens another." — Proverbs 27:17
There is nothing better than working side-by-side in the garage,
sharpening your skills and building things that last!

🗝️ MECHANIC'S ANSWER KEY

(For Dad / Grading Reference)

1. Mixing the Perfect Two-Stroke Fuel

Correct Answer: 1 Gallon

Steps: 5/2 × 2/5 = 10/10 = 1

2. Gapping the Spark Plug

Correct Answer: ⅛ of an inch

Steps: 3/32 × 4/3 = 12/96. Both numbers divide perfectly by 12, simplifying to 1/8.

3. The Rear Sprocket Upgrade

Correct Answer: 54 Teeth

Steps: 48/1 × 9/8 = 432/8 = 54

Grease, Gears, & Gas:

Garage Math – My JNCO Jeans, JNCO

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