# Middle School Math Long-Term Sub Plans, 4 Weeks

Four complete week binders of middle school math, grades 6 to 8. Every day has individual work and a team task, and every task has a "say this" script.

**PREVIEW**

## What is included

- Four week binders (64, 66, 65, 64 pages): 259 pages
- 52 front pages: binder cover, important information, note to the sub, the week plan filled in, schedule, set index, class list, how it went, Monday opener
- 40 solo blocks (20 math sets, 20 calm blocks) and 20 team tasks for groups of four
- A "say this to the class" script for all 84 tasks: 2 or 3 sentences the sub reads out
- A core task and a ★ challenge in every math set and team task
- 20 optional games, each on that day's math lesson, a fun way to end the class
- Answer keys for everything; color and ink-saver B&W, US Letter and A4

## How it works

1. Leave the four binders out. Each has its own filled-in plan with page numbers.
2. The sub reads the "say this" box out, then runs the day's math set in every period; students work on their own. Everyone does the core task, early finishers go on to the ★ challenge.
3. The calm block fits any gap, the team task fills a block period or extra time, the game the last 15 minutes.
4. No prep and no tech: print and go.

## The 20 days, 20 topics: a math set, a team task and a game each day

- **Week 1, days 1 to 5. Math:** Ratios, Rates and Percent, Integers and Order of Operations, Fractions and Decimals, Area and Perimeter, Data and Graphs. **Team tasks:** The Number Line-Up, The Garden Plot Plan, Design the Dog Park, Time Capsule Code, The Calculator Debate.
- **Week 2, days 6 to 10. Math:** Unit Rates and Proportions, Expressions and the Distributive Property, One-Step Equations, Area of Triangles and Polygons, Mean, Median, Mode and Range. **Team tasks:** Snack Order Showdown, Expression Match-Up, Locker Combination Relay, Plaza Tile Planner, Class Survey Lab.
- **Week 3, days 11 to 15. Math:** Discount, Tax, Tip and Percent Change, Multiplying and Dividing Negative Numbers, Two-Step Equations, Circumference and Area of Circles, Probability. **Team tasks:** Sale Day Store, Temperature Trek, Number Machine Makers, Round Garden Design, Fair Game Carnival.
- **Week 4, days 16 to 20. Math:** Proportional Relationships in Tables and Graphs, Inequalities, Angle Relationships, Volume and Surface Area of Prisms, Box Plots and Spread. **Team tasks:** Map Scale Expedition, Field Day Limits, Laser Maze, Package Designer, Paper Airplane Test Flight.

**Optional game every day, on that day's math lesson:** Mon **Whiteboard Quiz Game** Tue **Paper Password** Wed **Class Feud** Thu **Classroom Millionaire** Fri **Mystery Box**

**What this preview shows:** the note to the substitute, the Week 1 plan, more front pages, one page of every daily part, a full math set with its answer key, a calm block, a team task, the game types and one ink-saver page. Every product page is watermarked. The full product has 259 pages.

# Note to the Substitute

Grades 6 to 8 · five days · every set runs from the printout alone

## Thank you for covering my classes this week

Everything you need is in this binder. The front pages (important information, weekly schedule, class list) are filled in for this week. After them come the work sets, one per day: **Math 1** is Monday's set, **Math 2** is Tuesday's, and so on to **Math 5** on Friday. Run the day's set in every period you teach that day. Each set is one period (45 to 55 minutes), stands alone, and has its own answer key at the back of the binder, so you never have to make anything up or know the subject. Every task starts with a short **Say this to the class** box under its title: read it out, and the class knows what to do and how to start.

**Every student page has a core task first, then a ☆ challenge.** Every student does the core task. Students who finish early go on to the ☆ challenge; it fills a few extra minutes, and nobody has to finish it.

After the subject sets come the shared blocks, one of each per day. The **calm block** is always allowed: for a period that runs short, a loud class, or anyone who finishes early. The **team task** fills a period on its own. The **game** is optional: a fun way to end the class, or something for extra time. Fifteen minutes, from the script.

## Each day has

- One Math set (one period, core task + ☆ challenge on every page)
- A calm and quiet block: a math puzzle and a self-checking practice page
- A team task for groups of four
- A paper game from the script

## If the class is loud

- Set a voice level with a number, 0 to 3, and use it all week (the Day 1 opener explains it).
- Switch to the calm block. Nobody needs to move.
- Every student page has a ☆ challenge, so fast finishers always have something.
- If a set is not working, stop it and use the calm block or the team task. Every set starts cold.

## At the end of each day

Please fill in that day's line on the "How it went" page. It takes two minutes and I read every word.

Did this kit work well for your class? A quick review helps other teachers find it and earns you TpT credits. Thank you!

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## This Week's Plan

Filled in for you: run the day's set in every period you teach. Keep it as it is, or use the blank schedule on the next page for your own order.

| WHEN | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| **Start of class** | **Meet Your Sub**<br>p. 11 · 15 min, every period | Attendance, voice level | Attendance, voice level | Attendance, voice level | Attendance, voice level |
| **Main work, every period** | **Math 1**<br>Ratios, Rates and Percent<br>p. 14 | **Math 2**<br>Integers and Order of Operations<br>p. 22 | **Math 3**<br>Fractions and Decimals<br>p. 31 | **Math 4**<br>Area and Perimeter<br>p. 40 | **Math 5**<br>Data and Graphs<br>p. 49 |
| **Early finishers or a loud moment** | **Word Search and Quiet Practice**<br>p. 17 | **Term Match and Quiet Practice**<br>p. 25 | **Code Breaker and Quiet Practice**<br>p. 34 | **Word Scramble and Quiet Practice**<br>p. 43 | **Cross-Number and Quiet Practice**<br>p. 52 |
| **Block period or extra time** | **The Number Line-Up**<br>p. 19 | **The Garden Plot Plan**<br>p. 27 | **Design the Dog Park**<br>p. 36 | **Time Capsule Code**<br>p. 45 | **The Calculator Debate**<br>p. 54 |
| **Last 15 minutes (optional): a fun way to end the class, or for extra time** | **Whiteboard Quiz Game**<br>p. 20 | **Paper Password**<br>p. 29 | **Class Feud**<br>p. 38 | **Classroom Millionaire**<br>p. 47 | **Mystery Box**<br>p. 56 |

### How to use this plan

- Page numbers point to the first page of each set. Copy one per student.
- The calm block is always allowed: a period that runs short, a loud class, or anyone who finishes early.
- The game is optional: a fun way to end the class, or something for extra time.

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# MATH SUB PLANS WEEK 1

Middle School Math, 5 Days of Print and Go Work

Teacher _____

Room _____

Grade and classes _____

Week of _____

Everything a sub needs for five days is in this binder: a filled-in weekly plan, a blank schedule, the class list, and for every day one Math set, a calm block, a team task and a paper game. Each set is one period, stands alone, and has its own answer key. Nothing needs subject knowledge, a login or a projector.

## Important Information

The page the sub reads first. Fill it in once and keep it current.

**People to call**

Office _____

Teacher next door _____

Nurse _____

Principal / admin _____

Tech help _____

**Emergency procedures**

Fire: exit and meeting point _____

Lockdown _____

Severe weather _____

Medical _____

Where the first aid kit is _____

**Helpful students**

_____

_____

_____

**Students who need extra support**

_____

_____

_____

**Where things are**

Attendance / how to take it _____

Paper, pencils, supplies _____

Hall passes _____

Copier, if the sub may use it _____

**Class routines**

Start of class _____

Bathroom _____

Phones _____

End of class _____



## Weekly Schedule (Blank)

Your own order: write the set for each period (Monday: Math 1, Tuesday: Math 2, and so on) and the class next to each period. Cross out or rename periods to match the school day.

| PERIOD / CLASS | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| **Period 1** ___ – ___ Class: _____ | | | | | |
| **Period 2** ___ – ___ Class: _____ | | | | | |
| **Period 3** ___ – ___ Class: _____ | | | | | |
| **Period 4** ___ – ___ Class: _____ | | | | | |
| **Period 5** ___ – ___ Class: _____ | | | | | |
| **Period 6** ___ – ___ Class: _____ | | | | | |
| **Period 7** ___ – ___ Class: _____ | | | | | |

**How to fill it in**

- One set per period. Each set runs 45 to 55 minutes; if a period runs longer, the ☆ challenges fill a few minutes, or add that day's team task.
- Same subject all day? Write the day's set in every period you teach. Planning, lunch and duty periods: cross them out.
- On Monday the opener (15 minutes) comes first in every period, then the set.
- The game is optional: put it in the last period as a fun way to end the class, or use it for extra time. The calm block goes in any gap.

**Set naming**

Sets are named by subject and day: **Math 1** is Monday's set, **Math 2** is Tuesday's, and so on to **Math 5** on Friday. The set index lists every set with its minutes and page.



## Class List and Dismissal

Names, what a sub must know, and how every student goes home. Copy one per class.

(B) bus (write the number) (W) walks (P) picked up (write who) (A) after-school program (O) other

☆ in the notes: a student who finds the core task easy may start with the challenge

| # | STUDENT NAME | NOTES (ALLERGIES, NEEDS, HELPFUL, LEAVES EARLY) | HOME | BUS # / PICKED UP BY / PROGRAM |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
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| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |



## How It Went

For the substitute. One line per day, two minutes at the end of each day. Check the boxes and go.

**Monday**

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

**Tuesday**

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

**Wednesday**

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

**Thursday**

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

**Friday**

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____



## Meet Your Sub

Day 1 opener. 15 minutes at the start of every period on Monday, before the set. Nothing to prepare.

Opener

**SAY THIS TO THE CLASS**

"Hi everyone, I am your sub for math this week, and every day has one set of math work for this period. First I will tell you a little about me and take three questions, then we read the class agreement together. Every page has a core task and a star challenge, so start with the core task and keep going when you finish."

**Sub script (same routine for every class)**

1. **Before first period, fill in the introduction sheet** (next page) once. Keep it honest and short. Students read a sub in ten seconds; give them something real to read.
2. **Introduce yourself** from the sheet: two minutes. Then hold up the "Ask the Sub" list and take three questions from hands. Three, not ten.
3. **Read the class agreement** out loud. Ask the class to add one line of their own and write it on the board for that period. That line is theirs; they will keep it better than yours.
4. **Set the voice level** with a number, 0 to 3 (bottom of the sheet). Say which level the set needs. Use the numbers all week.
5. **Start the set:** "This is today's math. Do the core task first. When you finish, try the star challenge, and the calm block is always allowed."

**If the class is loud**

- Skip the questions, keep the agreement and the voice level.
- Start the set sooner. Leave the voice level number on the board for the whole period.

**If a period has ten minutes left**

- Play Math Two Truths and a Lie (rules on the class page) in groups of six. Each group picks one to share.
- Or hand out the quiet practice page from the calm block.

**Monday morning checklist (before first period)**

- ☐ Read the Important Information page: office number, emergency exits, the nurse.
- ☐ Check the class list for allergies, medical needs and students who leave early.
- ☐ Find today's set on the weekly schedule and count copies for every period.
- ☐ Fill in the About Your Sub sheet and pin it where the class can see it.
- ☐ Write the voice levels 0 to 3 on the board.
- ☐ Put the answer keys somewhere students cannot reach them.



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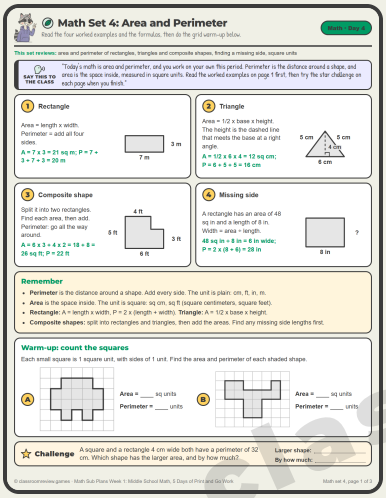
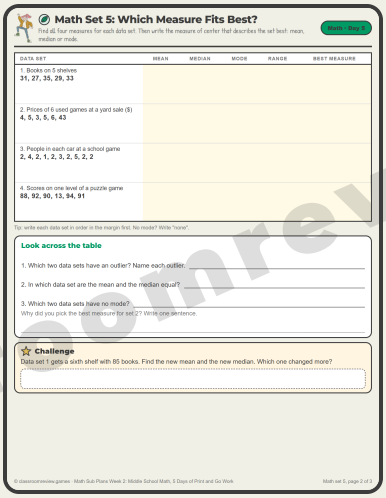
# ONE PAGE OF EVERY DAILY PART

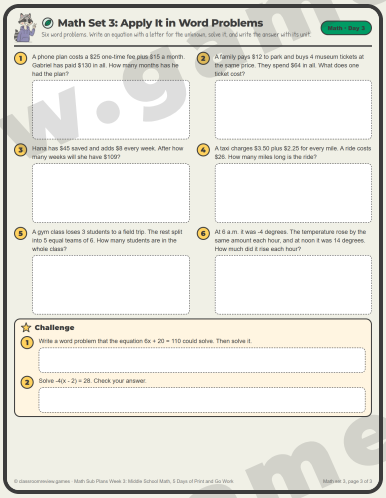




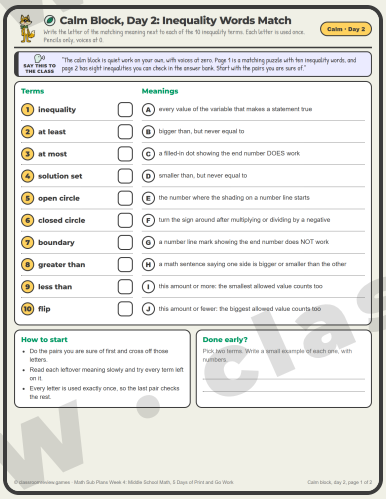

Math set, Week 1 (solo)



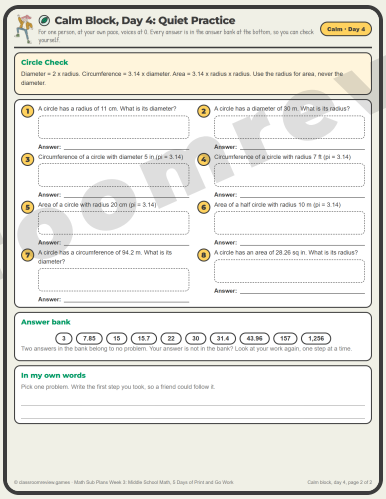

Math practice, Week 2 (solo)



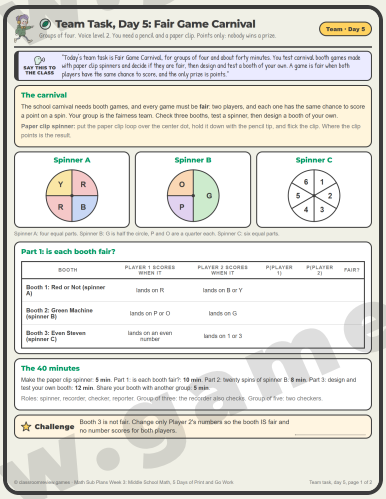

Word problems + challenge, Week 3 (solo)



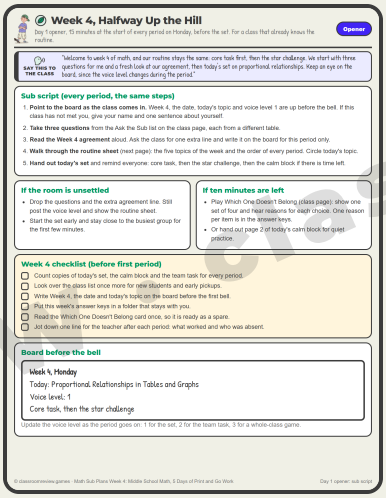

Calm block: math puzzle (solo)



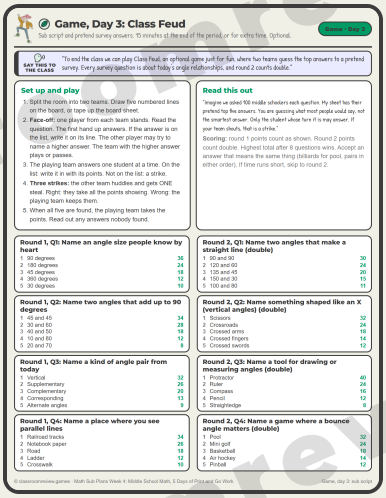

Calm block: quiet practice (solo)



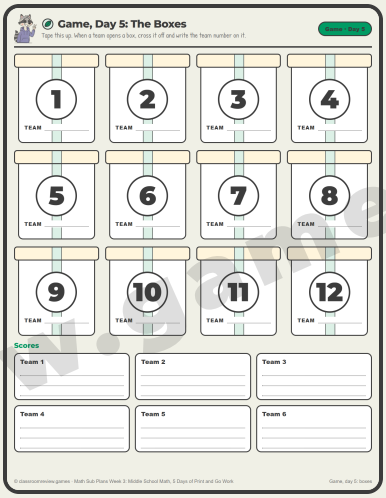

Team task, Week 3 (groups of four)




Monday opener, Week 4 (whole class)




Game: Class Feud (whole class)




Game: Mystery Box (whole class)

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# Math Set 1: Proportional Relationships in Tables and Graphs

Math · Day 1

Study the four worked examples first. Then try the warm-up tables below, one column at a time.

**This set reviews:** proportional tables, the constant of proportionality k, graphs through (0, 0) and equations y = kx

**SAY THIS TO THE CLASS**

"Today you work on your own on proportional relationships, where y is always the same number times x. That number is called k, and you find it by dividing y by x. Read the four worked examples on page 1 first, and try the star challenge when a page is done."

## 1 Proportional or not?

Find y ÷ x in every column. If every ratio is the same, the table is proportional.

| cups of flour | 2 | 3 | 5 |
|---|---|---|---|
| muffins | 24 | 36 | 60 |

**24 ÷ 2 = 12, 36 ÷ 3 = 12, 60 ÷ 5 = 12. All equal, so it is proportional.**

## 2 The constant k from a table

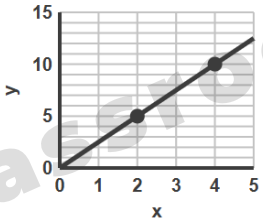
The constant of proportionality k is the ratio y ÷ x that every column shares.

| hours | 2 | 4 | 7 |
|---|---|---|---|
| dollars | 30 | 60 | 105 |

**k = 30 ÷ 2 = 15 dollars per hour. Check: 15 x 7 = 105.**

## 3 The constant k from a graph

A proportional graph is a straight line through (0, 0). Pick a point on the line and divide y by x.




**The point (4, 10) is on the line: k = 10 ÷ 4 = 2.5. The line also goes through (1, 2.5).**

## 4 Write y = kx

A printer prints 18 pages in 3 minutes at a steady speed. Find k, then put it in front of x.

**k = 18 ÷ 3 = 6 pages per minute, so y = 6x (y pages in x minutes).**

## Remember

- **Proportional** means y ÷ x is the same number in every pair. That number is **k**, the constant of proportionality.
- The equation is **y = kx**. The graph is a straight line through **(0, 0)**, and it passes through the point **(1, k)**.

## Warm-up: proportional or not?

Find y ÷ x for each column. Circle yes or no. If yes, write k.

**A**

| x | 2 | 5 | 8 |
|---|---|---|---|
| y | 6 | 15 | 24 |

yes / no k = _____

**B**

| x | 1 | 3 | 6 |
|---|---|---|---|
| y | 4 | 10 | 19 |

yes / no k = _____

**C**

| x | 4 | 10 | 14 |
|---|---|---|---|
| y | 2 | 5 | 7 |

yes / no k = _____

**D**

| x | 3 | 6 | 9 |
|---|---|---|---|
| y | 7 | 14 | 22 |

yes / no k = _____

## Challenge

Jamal says this table is proportional because y goes up by 5 every time x goes up by 1. Is he right? Use y ÷ x to explain.

| x | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| y | 7 | 12 | 17 | 22 |

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# Math Set 1: Find k Four Ways

Find the constant of proportionality k in every problem. Then write the equation y = kx where it asks.

Math · Day 1

## A. From a table: find k, then write y = kx

1.

| x | 2 | 5 | 9 |
|---|---|---|---|
| y | 16 | 40 | 72 |

k = _____

y = _____

2.

| x | 3 | 7 | 10 |
|---|---|---|---|
| y | 4.5 | 10.5 | 15 |

k = _____

y = _____

3.

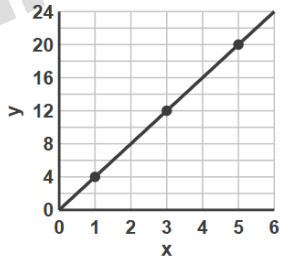
| x | 4 | 8 | 20 |
|---|---|---|---|
| y | 3 | 6 | 15 |

k = _____

y = _____

## B. From a graph: find k, then write y = kx

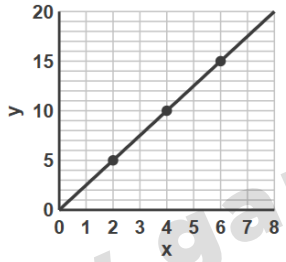
1




k = _____

y = _____

2




k = _____

y = _____

## C. From words: find k, then write y = kx

1. Kofi walks 9 miles in 3 hours at a steady pace. How many miles per hour?

k = _____ y = _____

2. 6 bags of mulch cost $27. Dollars per bag?

k = _____ y = _____

3. A rice recipe uses 5 cups of water for every 2 cups of rice. Cups of water per cup of rice?

k = _____ y = _____

## D. Use the equation

1. y = 6x. Find y when x = 7.

_____

2. y = 0.4x. Find y when x = 15.

_____

3. y = 12x. Find x when y = 84.

_____

4. y = 2.5x. Find x when y = 20.

_____

**Challenge** Lana's printer follows y = 14x (pages in x minutes). Mei's printer prints 48 pages in 3 minutes. Whose printer is faster, and by how many pages per minute?

Faster: _____

By how much: _____

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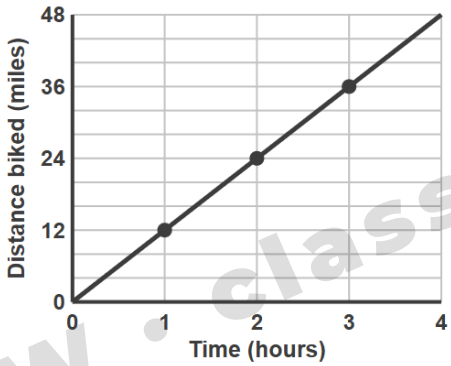
# Math Set 1: Read the Graph and Word Problems

Math · Day 1

First read Malik's bike graph, then solve the six word problems. Show your work in each box.




**Malik's bike ride at a steady speed**

a. What is k? What does the point (1, 12) tell you?

b. Write the equation of the line.

c. How far does Malik bike in 3.5 hours?

1. Jada earns $54 for 6 hours of babysitting. If she keeps the same hourly rate, what does she earn for 10 hours?

2. A car goes 87 miles on 3 gallons of gas. Write an equation for miles y and gallons x. How far does it go on 8 gallons?

3. A gym charges $20 to join plus $15 each month. Is the total cost proportional to the number of months? Explain.

4. Mei uses 4 cups of flour for every 3 batches of muffins. How many cups of flour does she need for 9 batches?

5. Store A sells 4 bottles of juice for $6. Store B's price follows y = 1.4x. Which store is the better buy, and by how much per bottle?

6. A printer prints 135 pages in 9 minutes. At the same speed, how many minutes does it take to print 240 pages?

## Challenge

1. What does the point (0, 0) mean on Malik's graph? Why does every proportional graph go through (0, 0)?

2. A straight line goes through (0, 0) and (5, 8). Find k and the point on the line where x = 1.

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# Answer Keys (1 of 6)

Teacher copy. Keep these pages out of the student sets.

### Opener: Which One Doesn't Belong (one reason for each item)

**A. Numbers:** 4: the only one-digit even number; 9: the only odd perfect square; 15: the only one that is not a perfect square; 16: the only two-digit even number.

**B. Ways to write a number:** 0.5: the only decimal; 1/4: the only one that is not equal to one half; 50%: the only percent; 2/4: the only fraction that is not in simplest form.

**C. Shapes:** the square: the only one with all sides equal and right angles; the rectangle: the only four-sided shape whose sides are not all equal; the hexagon: the only one with more than four sides (and no right angle); the triangle: the only one with an odd number of sides.

**D. Number sentences:** $x + 5 > 8$: the only inequality: it has many solutions; $2x = 6$: the only one where every number is even; $x - 1 = 2$: the only one with subtraction; $3x = 12$: the only equation whose solution is not 3.

Accept any other reason that is true for the chosen item and not for the other three.

### Math Set 1: Proportional Relationships in Tables and Graphs

**Warm-up:** A. yes, k = 3; B. no (4, 3.33, 3.17); C. yes, k = 0.5; D. no (2.33, 2.33, 2.44). **Challenge, page 1:** no: y ÷ x gives 7, 6, 5.67, 5.5, which are not equal. Adding the same amount each time is not the same as multiplying by k (at x = 0, y would be 2, not 0).

**A:** 1. k = 8, y = 8x; 2. k = 1.5, y = 1.5x; 3. k = 0.75, y = 0.75x. **B:** 1. k = 4 (y = 4x); 2. k = 2.5 (y = 2.5x). **C:** 1. k = 3, y = 3x; 2. k = 4.5, y = 4.5x; 3. k = 2.5, y = 2.5x. **D:** 1. y = 42; 2. y = 6; 3. x = 7; 4. x = 8. **Challenge, page 2:** Mei's printer, by 2 pages per minute (k = 48 ÷ 3 = 16 against k = 14).

**Graph:** a. k = 12; Malik bikes 12 miles in 1 hour; b. y = 12x; c. 42 miles. **Word problems:** 1. $90 (k = 9 dollars per hour); 2. y = 29x; 232 miles; 3. no: 1 month costs $35 and 2 months cost $50; 35 ÷ 1 and 50 ÷ 2 = 25 are not equal (and 0 months still costs $20); 4. 12 cups (k = 4/3 cup per batch); 5. Store B, by $0.10 per bottle (k = 1.5 at Store A); 6. 16 minutes (k = 15 pages per minute).

**Challenge, page 3:** 1. 0 hours of biking means 0 miles; in y = kx, when x = 0, y = k x 0 = 0. Accept any answer that ties (0, 0) to zero time and zero miles; 2. k = 1.6; the point (1, 1.6).

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## Calm Block, Day 1: Word Search

Find all 12 shopping math words. Every direction, including backward. Pencils only, voices at 0.

Calm · Day 1

**SAY THIS TO THE CLASS**

"This calm block is a quiet one for working alone, voices at zero. Page 1 hides twelve shopping math words, and page 2 has eight money problems you can check in the answer bank. Pick either page to start, and go at your own pace."

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | G | N | A | H | C | D | Z | J | U | R | K | S | T |
| T | P | I | E | C | E | R | M | R | N | H | Y | R | E |
| A | R | S | A | U | C | Y | T | I | U | T | A | R | G |
| V | I | D | I | S | C | O | U | N | T | A | L | E | U |
| P | W | V | R | V | G | X | U | C | H | X | K | S | I |
| Q | L | A | T | O | T | N | M | P | U | K | R | A | M |
| B | I | D | G | K | Z | B | I | G | O | S | T | E | A |
| L | A | N | I | G | I | R | O | V | Y | N | P | R | P |
| T | W | T | C | Q | C | C | V | W | A | C | S | C | H |
| I | A | U | S | R | T | N | T | L | W | S | A | E | C |
| R | O | U | M | B | E | O | D | L | C | F | L | D | I |
| Y | V | M | L | J | O | A | Z | B | Z | K | E | V | W |
| B | X | B | S | L | H | H | S | L | A | P | W | B | Z |
| S | D | N | V | S | F | S | Q | E | P | Q | Z | B | S |

DISCOUNT · MARKUP · SALE · ORIGINAL · INCREASE · DECREASE · CHANGE · COUPON · RECEIPT · GRATUITY · SAVINGS · TOTAL

**Done early?**

Pick three of the words. Write a tiny example of each one, like $50 at 20% off is $40 for a discount.

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## Team Task, Day 2: Cards and Strategy

Cut on the dashed lines: 16 cards. After the game, answer the strategy questions together.

Team · Day 2

| | | | |
|---|---|---|---|
| x (-1) | x (-1) | x (-1) | x (-2) |
| x (-2) | x (-2) | x 2 | x 2 |
| x 3 | x 3 | x (-3) | x (-3) |
| ÷ 2 | ÷ 2 | ÷ (-2) | ÷ (-2) |

### Strategy questions

1. The marker is at -6. Team Heat holds **x (-2)** and **x 3**. Which card should they play, and where does the marker land?

2. The marker is at 8. Team Frost holds **÷ (-2)** and **x 2**. Which card should they play, and where does the marker land?

3. The marker is at -5. Team Heat holds **÷ 2** and **x (-1)**. Which card should they play, and where does the marker land?

4. Start at 3 and play **x (-2)**, then **x 3**, then **÷ (-2)**, then **x (-1)**. Where does the marker end? Would a different order change the end?

5. What fraction of the 16 cards would turn a temperature above 0 into one below 0? Which team should hope for those cards late in the game?

**Challenge** The marker is at -10. Team Frost holds **x (-3)** and **÷ (-2)**. Both cards make it positive! Which one is better for Frost, and why?

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## Game, Day 1: The Board

Tape this to the whiteboard or copy it. Cross squares off as they are played.

Game · Day 1

| TABLE K | GRAPH K | Y = KX | MISSING | WORD PROBS |
|---|---|---|---|---|
| 100 | 100 | 100 | 100 | 100 |
| 200 | 200 | 200 | 200 | 200 |
| 300 | 300 | 300 | 300 | 300 |
| 400 | 400 | 400 | 400 | 400 |
| 500 | 500 | 500 | 500 | 500 |

**Scores**

| Team 1 | Team 2 | Team 3 |
|---|---|---|
| | | |
| | | |
| | | |

| Team 4 | Team 5 | Team 6 |
|---|---|---|
| | | |
| | | |
| | | |

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# Game, Day 2: Paper Password

Sub script and math word list. 15 minutes at the end of the period, or for extra time. Optional.

Game · Day 2

**SAY THIS TO THE CLASS** "For extra time, we can play Paper Password, an optional word game in pairs, just for fun. Every word is from today's lesson on multiplying and dividing negatives, and fewer clues mean more points."

## Set up (2 minutes)

1. Pairs sit face to face. Give each pair one card page, cut into the four round cards (or folded so one card shows).
2. Partner A is the clue giver in rounds 1 and 3, Partner B in rounds 2 and 4. The guesser never sees the card.
3. Each round lasts 2 minutes. The clue giver says ONE word. The guesser gets ONE guess. Wrong: give another one-word clue.
4. After five clues without a right guess, the word scores 0 and the pair moves on. Say "Go" and "Stop" for each round.

## Read this out

"Your clue is one word only. You may not say the secret word or any part of it. If the word is snowman, you cannot say snow or man. No gestures, no spelling, no rhymes. Break a rule and that word scores zero."

**Scoring:** guessed on clue 1 = 5 points, clue 2 = 4, clue 3 = 3, clue 4 = 2, clue 5 = 1. The clue giver circles the number on the card. After round 4, pairs add their four round totals. Highest total wins; ask pairs to call out totals over 60.

## Referee calls

Two words glued together ("hotdog") count as one clue only if they make a real single word. Plurals and "-ing" forms of the secret word are not allowed. If two pairs argue about a clue, the word scores zero and they move on. The example clues below are allowed and show students what a good first clue sounds like.

## Timing (15 minutes)

| 0:00 | 2:00 | 4:30 | 7:00 | 9:30 | 12:00 |
|---|---|---|---|---|---|
| Set up, rules | Round 1, Partner A | Round 2, Partner B | Round 3, Partner A | Round 4, Partner B | Add totals, winners |

### Round 1: Partner A gives clues

| | |
|---|---|
| MINUS | example clue: negative |
| POSITIVE | example clue: plus |
| HEAT | example clue: warm |
| QUOTIENT | example clue: division |
| SIGN | example clue: symbol |

### Round 2: Partner B gives clues

| | |
|---|---|
| DIVIDEND | example clue: share |
| DIVISOR | example clue: denominator |
| ODD | example clue: strange |
| MAGNITUDE | example clue: size |
| UNDEFINED | example clue: impossible |

### Round 3: Partner A gives clues

| | |
|---|---|
| RATIONAL | example clue: decimal |
| WEATHER | example clue: forecast |
| EVEN | example clue: pairs |
| COUNT | example clue: tally |
| SPLIT | example clue: halves |

### Round 4: Partner B gives clues

| | |
|---|---|
| DEGREES | example clue: thermometer |
| FROST | example clue: icy |
| RULE | example clue: law |
| OWE | example clue: borrow |
| DEPTH | example clue: deep |

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# Game, Day 4: Classroom Millionaire

Sub script and the 12 questions. 15 minutes at the end of the period, or for extra time. Optional.

Game · Day 4

**SAY THIS TO THE CLASS** "For extra time we can play Classroom Millionaire, an optional game where the whole class climbs a ladder of twelve questions together. Every question is about today's volume and surface area of prisms, and a new student takes the hot seat each time."

## How it works

1. Tape up the ladder sheet. The whole class is one player. Pick a student for the hot seat (a new student for every question).
2. Read the question and the four options, then read the options again. The hot seat may listen to quiet advice, then says "final answer" and a letter.
3. Right: the class climbs one rung. Before hearing the next question, the class may vote to walk away and keep what it has.
4. Wrong: the climb ends. Rungs 4 and 8 are safe: the class keeps the last safe amount it passed.
5. Time left over? Play the questions again as a team quiz.

## Three lifelines (one use each)

**Ask the class:** everyone shows 1, 2, 3 or 4 fingers at once for A, B, C or D. The hot seat looks, then decides.

**50/50:** read out the two wrong options listed under the question. Cross them off.

**Phone a friend:** the hot seat picks one classmate, who has 30 seconds to say what they think out loud.

"Only the hot seat's final answer counts. Shout an answer and the class loses a lifeline."

## Rungs 1 to 4, rung 4 is safe

**1. $100** Volume is measured in which kind of units?
A. square B. cubic C. inches D. degrees
**Answer: B. cubic (50/50 removes C and D)**

**2. $250** How many faces does a box have?
A. 4 B. 8 C. 12 D. 6
**Answer: D. 6 (50/50 removes A and C)**

**3. $500** Box 5 by 2 by 6 cm. Volume in cubic cm?
A. 60 B. 13 C. 104 D. 30
**Answer: A. 60 (50/50 removes B and D)**

**4. $1,000** A cube has 6 in edges. Volume in cubic in?
A. 36 B. 18 C. 216 D. 24
**Answer: C. 216 (50/50 removes B and D)**

## Rungs 5 to 8, rung 8 is safe

**5. $2,500** Paper to wrap a box: which do you find?
A. surface area B. volume C. height D. perimeter
**Answer: A. surface area (50/50 removes C and D)**

**6. $5,000** Surface area of a cube with edges of 4 m?
A. 64 sq m B. 16 sq m C. 24 sq m D. 96 sq m
**Answer: D. 96 sq m (50/50 removes B and C)**

**7. $10,000** Surface area of a box 8 by 3 by 2?
A. 48 B. 92 C. 46 D. 184
**Answer: B. 92 (50/50 removes C and D)**

**8. $25,000** Prism: triangle base 6, height 5, length 9. Volume?
A. 270 B. 150 C. 135 D. 45
**Answer: C. 135 (50/50 removes B and D)**

## Rungs 9 to 12

**9. $50,000** Volume 168 cubic in, base 7 in by 4 in. Height?
A. 24 in B. 11 in C. 12 in D. 6 in
**Answer: D. 6 in (50/50 removes B and C)**

**10. $100,000** 75 sq in of cardboard at 2 cents per sq in. Cost?
A. $0.75 B. $1.50 C. $1.77 D. $37.50
**Answer: B. $1.50 (50/50 removes C and D)**

**11. $500,000** Ends: 6, 8, 10 right triangles. Length 5. Surface area?
A. 168 B. 144 C. 120 D. 240
**Answer: A. 168 (50/50 removes C and D)**

**12. $1 MILLION** Tank 50 by 20 by 30 cm. 1,000 cubic cm = 1 L. Liters?
A. 300 B. 3,000 C. 30 D. 3
**Answer: C. 30 (50/50 removes B and D)**

## If the class misses

| | |
|---|---|
| Wrong on rung 1 to 4 | **class keeps $0** |
| Wrong on rung 5 to 8 | **class keeps $1,000** |
| Wrong on rung 9 to 12 | **class keeps $25,000** |
| Walk away after rung n | **class keeps rung n** |

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# Math Set 2: Inequalities

Read the four worked examples, then decide true or false in the warm-up. Put the value in for x to test it.

Math · Day 2

**This set reviews:** inequality symbols, number line graphs, one-step and two-step inequalities, flipping the sign, at least and at most

**SAY THIS TO THE CLASS** "Today's math is inequalities, and you work on your own: start with the four worked examples on page 1. An inequality has many answers, so we graph them on a number line with an open or closed circle. Watch for the one big rule on page 1: flip the sign when you multiply or divide by a negative."

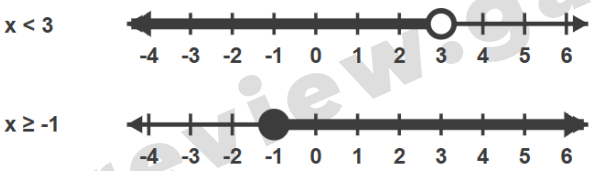
## 1 The four symbols

< less than. > greater than. ≤ less than or equal to, also said at most. ≥ greater than or equal to, also said at least.

**x ≥ 4 means x can be 4 or any number bigger than 4.**

## 2 Graph on a number line

Open circle: the number is NOT a solution (< or >). Closed circle: it IS a solution (≤ or ≥). Shade toward the numbers that work.




## 3 Solve in one step

x + 7 > 12. Undo the + 7: subtract 7 from both sides, just like an equation.

**x > 5. Check with 6: 6 + 7 = 13, and 13 > 12 is true.**

## 4 Two steps and the flip

-3x + 4 ≤ 19. Subtract 4: -3x ≤ 15. Divide both sides by -3, and FLIP the sign because you divided by a negative.

**x ≥ -5. Check with 0: -3 x 0 + 4 = 4, and 4 ≤ 19 is true.**

## Remember

- Solve an inequality like an equation: do the same thing to both sides.
- **Flip the sign** (< becomes >, ≤ becomes ≥) whenever you multiply or divide both sides by a **negative** number.
- Check by testing a number from your answer in the original inequality.

## Warm-up: true or false?

Put the value in for x. Circle T if the inequality is true, F if it is false.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | x > 6, when x = 6 | T | F | 2 | x ≥ 6, when x = 6 | T | F |
| 3 | x < -2, when x = -5 | T | F | 4 | 2x + 1 ≤ 9, when x = 4 | T | F |
| 5 | 3x - 5 > 10, when x = 5 | T | F | 6 | -x < 3, when x = -4 | T | F |
| 7 | x/2 ≥ 3, when x = 7 | T | F | 8 | 10 - x > 4, when x = 6 | T | F |

☆ **Challenge** Find every whole number that makes BOTH x > 3 and 2x + 1 < 15 true. _____

# In the full product

Four weeks of middle school math, planned and ready to print.

**259** pages in color and ink-saver B&W, US Letter and A4

**20** days, each with a math set, a calm block, a team task and an optional game

**84** "say this" scripts: one for every task, read out by the sub

**40 + 20** solo blocks (math sets and calm blocks) + team tasks for groups of four

## Use it your way

- A longer absence: four full weeks of middle school math, ready before you need them.
- Grades 6, 7 and 8: every math set has a core task and a ★ challenge for fast finishers.
- Your sub tub: print it once and keep it all year.
- Any sub: a script to read out for every task and every answer in the key, so no math knowledge is needed.

**Thank you!** If this works for your class, a quick review helps other teachers find it, and earns you TpT credits.

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