

ver there!

An Out-of-Your-Seat Math Review

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Contents

Correlations to the Math Standards	ii
Introduction	1
Show Your Work	4
Recording Sheet	5
 ANSWERS	
8.1 Rational and Irrational Numbers	6
8.2 Equations	7
8.3 Expressions	8
8.4 Functions	9
8.5 Geometry	10
8.6 Statistics and Probability – Part 1	13
8.7 Statistics and Probability – Part 2	15



Grade 8

Correlations to the Math Standards

	The Number System	
8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.	Module 8.1
	Expressions and Equations	
8.EE.A	Work with radicals and integer exponents.	Module 8.3
8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.	Module 8.2
8.EE.C	Analyze and solve linear equations and pairs of simultaneous linear equations	Module 8.2
	Functions	
8.F.A	Define, evaluate, and compare functions.	Module 8.4
8.F.B	Use functions to model relationships between quantities.	Module 8.4
	Geometry	
8.G.A	Understand congruence and similarity using physical models, transparencies, or geometry software.	Module 8.5
8.G.B	Understand and apply the Pythagorean theorem.	Module 8.5
8.G.C	Solve real-world and mathematical problems including volume of cylinders, cones, and spheres.	Module 8.5
	Statistics and Probability	
8.SP.A	Investigate patterns of association in bivariate data.	Module 8.6 Module 8.7

Introduction

Welcome to *Over There!*

Congratulations on your purchase of *Over There!*

Over There! is a whole-class, out-of-your-seat math activity that promotes collaboration between students and reinforces the idea of solving problems through “mental math.”

This box contains:

1. Grade 8 activity cards organized by the 5 domains of the Math Standards.
2. This booklet, which includes,
 - Correlations to the Grade 8 Math Standards
 - The Getting Started with *Over There!* pages for the teacher.
 - Recording Sheet reproducible student blackline master
 - Show Your Work reproducible student blackline master (optional)
 - Answer sheets for the teacher

Over There! asks students to apply the math skills they have acquired in class in a whole new context. In doing so, they learn to work collaboratively with their peers to solve the questions. By verbalizing the math with their peers, students are better able to comprehend the solution and improve their “mental math” skills.

How to Use *Over There!* in Your Classroom

These activities can be used as a unit review for the end of the week, or after the class has been given instruction on that particular topic.

These activities can also be administered prior to teaching a topic within the math curriculum. If used in this way, the activity can function as a gauge to determine how well the class understands a particular skill or skills.

The cards are sturdy and are printed with a special coating, so they can be taped to the wall, although many teachers may opt to display the cards on desks

at the front of the room or even on the ledge of the blackboard or whiteboard.

The cards should be distributed around the room and faced so they can be seen by the students. This way the student pairs can move around to find the card whose answer matches the question on the card they are holding.

Make sure there are no obstacles on the floor that could impede students’ movement or cause injury.

Getting Started

1. Put the students into pairs or threes. Then, have students file to the front of the room.
2. Distribute one copy of the Recording Sheet and one or more copies of the (optional) Show Your Work sheet to each pair. Decide which team member will fill out each of these sheets.

Note: The Answer sheets at the back of this booklet are intended for the teacher's use only.

3. Give a brief description of the activity and how the cards work:

“Each card is numbered clearly. It has a question at the top and an answer at the bottom.

Remember, the answer to the question on the top of the card is on a totally different card. You must find the card with the correct answer. If you have played ‘I Have, Who Has?’ you are familiar with this idea.”

Then say, “We will have one pair begin the game by reading their assigned card. Read the ‘Question’ part of the card at the top. Discuss with your partner. Many of these problems are ‘mental math.’ For word problems, it may be necessary to work out the answer on the Show Your Work sheet. Once you know the answer, go around the room to find the card with that answer written on the bottom of the card.”

“Write the correct answer in the Team Answer column of the sheet. Then, read the question on that card and find the card that has the appropriate answer. Once

you've completed all the cards, you can return to your seats."

Before students begin, assign each pair their "start card," making sure each pair starts with a different card.

Example:

1. The first pair goes to Card 3 and reads the question at the top. The pair discusses the question and works out the math on the Show Your Work sheet if appropriate. One student writes the answer on the Recording Sheet.

Card 3

?

There are 4 red marbles, 7 blue marbles, and 10 green marbles.
Write the ratio of blue marbles to red and green marbles.

!

40:1

2. Then, students say: "Where is 1 to 2?" (Partner or classmates answer and point: "Over There!")
3. Pairs go around the room to find the card that has the answer (the answer will be at the bottom of the card— in this case, it is Card 2).
4. Students then read the question at the top of Card 2 and repeat all the steps as in Card 3.

Card 2

?

There are 4 red marbles, 7 blue marbles, and 10 green marbles.
What is the ratio of red marbles to blue marbles?

!

1 to 2

5. All pairs follow in the same fashion until the whole class is engaged in the activity. The teacher is there to make sure the pairs are working in a (somewhat) orderly way.
6. All pairs should record their answer on the Recording Sheet, including the names of pairs members.
7. They also complete the Show Your Work sheets if required.
8. When all students have completed the activity, the teacher asks some questions to elicit discussion, such as:

"Did anyone have difficulty finding the answer to any of the cards?"

"Which one?"

"What strategy did you use for solving the problem?"
9. If necessary, the teacher may need to write some notes on the board to illustrate the math-solving strategies.
10. At the end of the session, the teacher collects all recording sheets and Show Your Work sheets and compares them to the Answer sheets, to evaluate students' understanding of the unit/topic.

What if my students are getting stuck on one of the cards?

Occasionally, you may find that several students are stopped at a single card, preventing them from completing the full circuit of the activity.

In this case, the teacher should ask that all students pause and go back to their seats.

Say: *"Several of you seem to be having difficulty with Card number 2 (or whichever card it may be).*

Let's break out the problem."

The teacher then writes the problem on the board, step by step, asking students to participate in finding the answer.

If you find that many students are having difficulty with a particular card, you'll find that this is an opportunity to reteach all or part of this week's unit.

Jump Start Student Learning with Whole-Class Active Engagement

Modern educational research shows that the benefits of collaborative learning are numerous.

In addition to fostering collaborative learning, *Over There!* activity cards require that kids move about the classroom and actively locate the card containing the answer to a given question. In this way, students become more energized and engaged. When they do locate the answer card, their problem-solving efforts become validated. This makes learning math more rewarding and fun!



Is $\sqrt{25}$ rational or
irrational?



no

Go around
the room
to find
the answer



Solve for x .

$$7x - 2 = 19$$



80

Go around
the room
to find
the answer



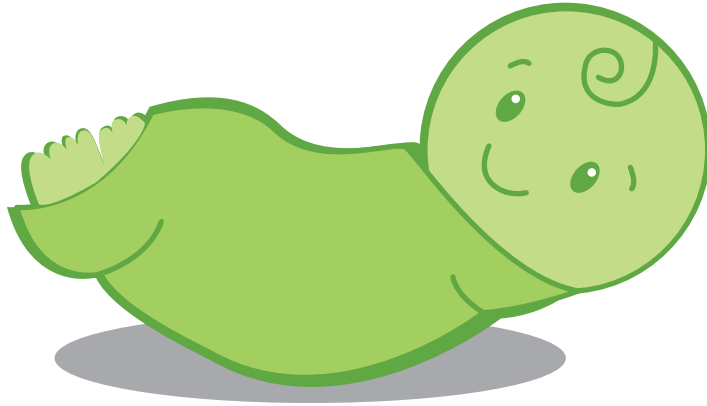
Simplify.

$$\left(\frac{1}{4}\right)^3$$



24

Go around
the room
to find
the answer

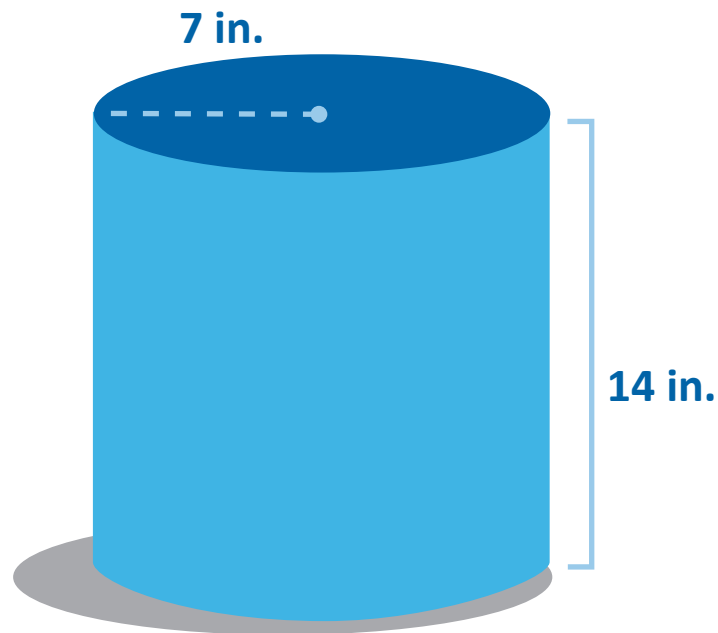


Grace charges \$5.25 per hour to babysit and Sophia charges \$10 upfront plus \$2.25 per hour. Who earns more if they each babysit for 4 hours?



$$y = 3x - 3$$

Go around
the room
to find
the answer



What is the approximate volume of the cylinder?



$(9, 7)$

Go around
the room
to find
the answer



Grade	Played Piano	Did Not Play Piano
A	107	194
B	16	24
C	1081	1428
D	377	921
F	547	965

Use the table to find the percentage of students who earned an A on a math quiz and who also played the piano.

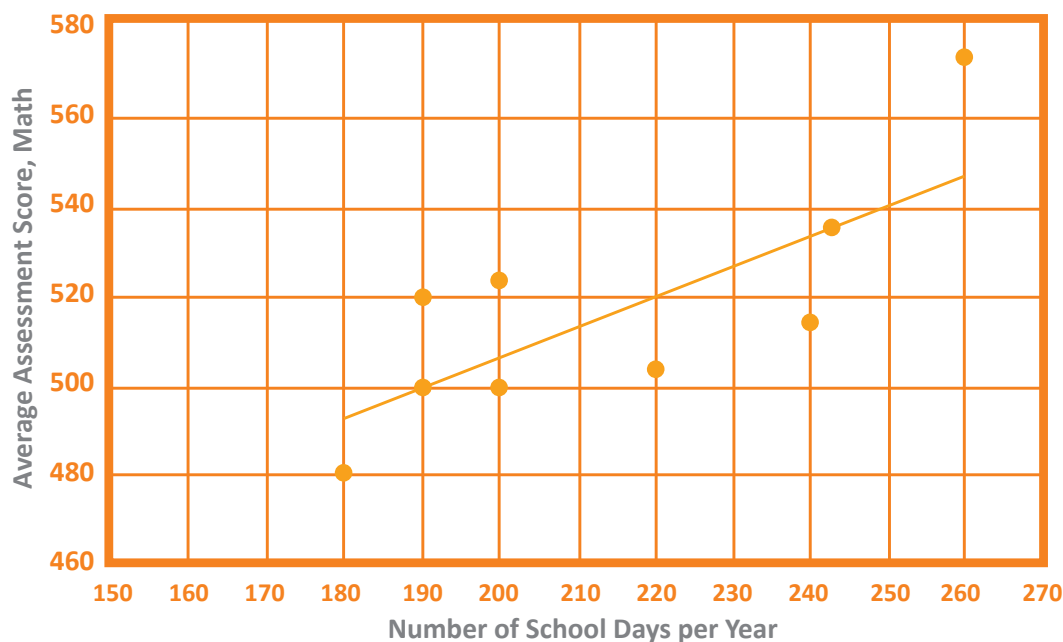


$$y = 3x + 30$$





Number of School Days per Year/Math Assessment Score



The data in the graph show the correlation between the number of school days per year and the average math assessment score for 9 different countries. What type of correlation is shown in the data?



3%

Go around
the room
to find
the answer