

SCHOLASTIC

MATH

Where Math Gets Real™

TEACHER'S GUIDE
MARCH 23, 2015

VOL. 35, NO. 10 ISSN 1041-1410
SUPPLEMENT TO SCHOLASTIC MATH



CONTAINS A
MINIMUM OF 10%
POST CONSUMER FIBER

ISSUE DATES	9/1	9/15	10/6	10/27	11/17	12/8	1/12	2/2	3/2	3/23	4/13	5/4
-------------	-----	------	------	-------	-------	------	------	-----	-----	------	------	-----

Registration is now required for access to your online resources.

YOUR ACCESS CODE: **NUMBER101**

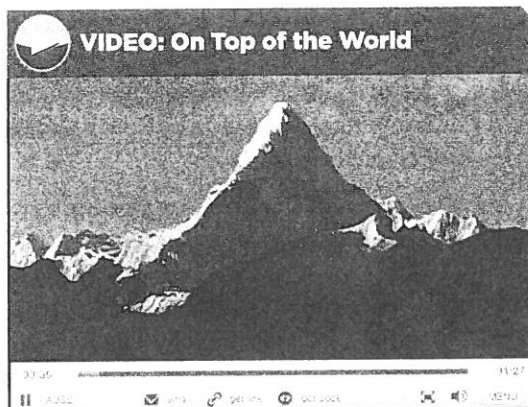
Dear Teacher,

This issue of *MATH* covers a lot of ground. Readers will voyage from the depths of the ocean in a deep-sea sub to the summit of the world's highest mountain. They'll learn about the physics that power Hollywood's most epic stunts and meet Chicagoans' wild new neighbor, the urban coyote. And they'll tackle a range of new and review skills, from coordinate grids to functions, ratios to cumulative line graphs, and more.

All of these exciting features can be supplemented with online resources including skills sheets, videos, and games. As always, you'll find these materials online at www.scholastic.com/math.

Enjoy!

Best wishes, the Editors
mathmag@scholastic.com



SKILLS GUIDE

PAGE	SKILL & ARTICLE TITLE	COMMON CORE STATE STANDARDS	ONLINE RESOURCES www.scholastic.com/math
4	Coordinate Grids DEEP DIVE	Number System: Position pairs of integers on a coordinate plane, and understand signs of numbers in ordered pairs as indicating locations in quadrants.	<ul style="list-style-type: none"> Download a differentiated Common Core skills sheet, plus 5 More Questions. Watch a background video.
6	Functions STUNT MATH	Functions: Understand that a function is a rule that assigns to each input exactly one output; define and evaluate functions based on real-world scenarios.	<ul style="list-style-type: none"> Download a differentiated Common Core skills sheet, plus 5 More Questions. Watch an instructional video.
8	Cumulative Line Graph WILD IN THE CITY	Statistics & Probability: Summarize numerical data sets in relation to their context.	<ul style="list-style-type: none"> Download a differentiated Common Core skills sheet, plus 5 More Questions. Watch a background video.
12	Statistics CLIMBING MOUNT EVEREST	Statistics & Probability: Summarize numerical data sets in relation to their context.	<ul style="list-style-type: none"> Watch a background video. Learn more with Web Links.
14	Ratios GAME CHANGERS	Ratios & Proportional Relationships: Use ratio language to describe a relationship between two quantities.	<ul style="list-style-type: none"> Download a differentiated Common Core skills sheet, plus 5 More Questions. Learn more with Web Links.
16	Least Common Denominator STILL GRUMPY	The Number System: Apply previous understandings of multiplication and division to find common factors and multiples.	<ul style="list-style-type: none"> Play a game.

Problem of the Day

TRY ONE OF THESE QUICK EXERCISES EACH DAY AS A FAST, FUN WAY TO START YOUR MATH LESSON!

<p>DAY 1</p> <p>A deep-sea submersible dives 1,514 feet below sea level before descending another 3,256 feet toward the ocean floor. Express its final depth as a negative integer.</p>	<p>DAY 2</p> <p>What number multiplied by 20 results in a product of -20?</p>	<p>DAY 3</p> <p>Find the LCD of $\frac{3}{8}$ and $\frac{7}{12}$.</p>	<p>DAY 4</p> <p>A hockey puck has a 3-inch diameter. A regulation hockey net is 6 feet wide. What is the ratio of the net's width to the puck's width? (Hint: Use equivalent measurements.)</p>	<p>DAY 5</p> <p>Angle A is supplementary to angle B. What is their sum?</p>
<p>DAY 6</p> <p>Using the formula Force = Mass X Acceleration, find the force on an object with a mass of 20 kg as it accelerates at 3 m/s^2.</p>	<p>DAY 7</p> <p>Which has a greater value? A. 9^2 B. $\sqrt{144}$</p>	<p>DAY 8</p> <p>Tilting your head at an angle of 60° adds 60 pounds of weight to your spine. What is this weight in kilograms? Round to the nearest tenth. (Hint: A kilogram is about 2.2 pounds.)</p>	<p>DAY 9</p> <p>$25 - -4 =$</p>	<p>DAY 10</p> <p>What is the greatest common factor of the following integers? 9, 33, 51</p>
<p>DAY 11</p> <p>If a mini-pig weighed 8 ounces at birth and 40 pounds on its first birthday, what was its percent increase in weight?</p>	<p>DAY 12</p> <p>Solve for x: $7x + 22 = 71$</p>	<p>DAY 13</p> <p>Divergent earned \$150 million at U.S. box offices last spring. If <i>Insurgent</i> brings in 1.5 times that amount, what will be its box office earning?</p>	<p>DAY 14</p> <p>What is the length of the hypotenuse of a right triangle with a base of 3 inches and a height of 4 inches?</p>	<p>DAY 15</p> <p>Simplify the following expression by factoring: $4r + 12$</p>
<p>DAY 16</p> <p>Of the 661 people who summited Mount Everest in 2013, 55% were Nepalese. How many climbers was that? Round to the nearest whole number.</p>	<p>DAY 17</p> <p>A healthy house cat weighs about 8 to 12 pounds. Express this range as an inequality where w represents weight.</p>	<p>DAY 18</p> <p>What is the value of 4^5?</p>	<p>DAY 19</p> <p>A veggie burger and fries costs \$6 at a diner. If you tip your server 17%, how much will you pay in total?</p>	<p>DAY 20</p> <p>Find the perimeter of a rectangle that is 12 inches wide and 17 inches long.</p>

ISSUE SKILLS REVIEW

For use with the March 23, 2015, issue of Scholastic *MATH* magazine.

FILL IN THE CORRECT ANSWER ON THE LINE.

1 On a coordinate grid with origin (0,0), the location of a deep-sea worm site is plotted at the coordinate (25, -100). In which quadrant is this coordinate located?

2 The location of a second worm site is plotted at the coordinate (25, -20). If each unit on the coordinate grid represents 1 meter, what is the distance between the two worm sites?

3 Complete the function table below, which describes the relationship between mass and force at a constant acceleration of 3 m/s^2 .

Input	Function Rule	Output
Mass (m) (kg)	$m \times 3$	Force ($\text{kg}\cdot\text{m/s}^2$)
45		
50		
55		

4 Based on the function rule above, what would be the force on an object with a mass of 35 kg at an acceleration of 3 m/s^2 ?

5 A Chicago-area coyote traveled 8,080 meters between midnight and 4 a.m.; 1,243 meters between 4 a.m. and 8 a.m.; and 30 meters between 8 a.m. and noon. What was the coyote's cumulative distance between midnight and 8 a.m.?

6 If the same coyote traveled 235 meters between noon and 4 p.m. and 1,996 meters between 4 p.m. and 8 p.m., what was its total travel distance during the 12-hour span between 8 a.m. and 8 p.m.?

7 A cross-section of a golf ball at its widest part has an area of about 2.2 square inches. If the size of a circular golf hole were increased to a diameter of 10 inches, what would be the ratio of the area of the hole to the area of the ball? (Hint: Use the formula $\pi(\frac{d}{2})^2$ to find the area of the golf hole.)

8 If the golf hole were increased to a diameter of 12 inches, what would be the new ratio of the hole to the ball?

9 Find the LCD of $\frac{3}{14}$ and $\frac{5}{7}$:

10 Find the LCD of $\frac{2}{9}$ and $\frac{4}{21}$:

ANSWERS

TG PAGE 5

SKILLS REVIEW

1. Quadrant IV
2. 80 meters
- 3.

Input	Function Rule	Output
Mass (m) (kg)	$m \times 3$	Force (kg·m/s ²)
45	45×3	135
50	50×3	150
55	55×3	165

4. 105 kg·m/s²
5. 9,323 meters

6. 2,261 meters
7. $\frac{78.5}{2.2}$
8. $\frac{113.04}{2.2}$
9. 14
10. 63

TG PAGE 6

PROBLEM OF THE DAY

1. -4,770 feet
2. -1
3. 24
4. $\frac{72}{3}$ or $\frac{24}{1}$
5. 180°
6. 60 kg·m/s²

7. A
8. 27.3 kilograms
9. 21
10. 3
11. 7,900%
12. 7
13. \$225 million
14. 5 inches
15. $4(r + 3)$
16. 364 climbers
17. $8 \leq w \leq 12$
18. 1,024
19. \$7.02
20. 58 inches

DATA ANALYSIS FOR GRADES 7-8. SCHOLASTIC.COM/UNEXPECTEDMATH

GO ONLINE!

Don't miss out on the digital resources that come with your subscription at:

www.scholastic.com/math

- **DOWNLOADABLE SKILLS SHEETS** provide more math problems.
- **INSTRUCTIONAL VIDEOS** teach step-by-step math lessons.
- **BACKGROUND VIDEOS** give real-world and cross-curricular tie-ins.
- **MATH GAMES**

The screenshot displays the Scholastic Math website interface. At the top, there's a navigation bar with 'SUBSCRIBERS' and a button that says 'Click to read your digital issue'. Below this, there are several featured content blocks:

- WATCH THIS!**: A section titled 'Percent Increase' featuring an instructional video that shows students how to calculate percent increase and evaluate real-world scenarios.
- ONLINE MATH EXTRAS**: A section with three sub-items:
 - Background Videos**: Our videos show how there's real-world math all around. One issue's videos included an overview of U.S. wildfires.
 - Math Games**: Each issue has a new game paired with one article. In this game, Solving Variables Equations with Jared, students practice variable equations.
 - Printable Skills Sheets**: Most feature articles are paired with downloadable skills sheets. This sample skills sheet on scientific notation goes with an article on tiny objects.
- NUMBERS IN THE NEWS**: A section featuring an article about 'Space Voyager!' with a sub-headline 'Rates & Proportions: Set up a proportion to find the number of miles that Voyager travels per year.'

If you're prompted to register online to access your materials, all you need is your access code: **numerator**

SCHOLASTIC MATH Editor: Karina Hamalainen Associate Editor: Jacqueline Barba Art Director: James Sarfati Photo Editor: Lois Safrani Production Editor: Allan Molho Senior Marketing Manager: Alicia Clark Senior Copy Editors: Ingrid Accardi, Suzanne Bilyeu Copy Editor: Troy Reynolds Media Editor: Marie Morreale Education Editor: Matt Friedman Executive VP, Scholastic: Hugh Roome Creative Director: Judith Christ-Lafond Editorial Director: Patricia Janes Executive Director of Production and Operations: Barbara Schwartz Publishing Systems Director: David Hendrickson Executive Editorial Director, Copy Desk: Craig Moskowitz President, Chief Exec. Officer, and Chairman of the Board of Scholastic Inc.: Richard Robinson. © 2015 Scholastic Inc. SCHOLASTIC and SCHOLASTIC MATH and associated logos are trademarks and/or registered trademarks of Scholastic Inc. All rights reserved. Materials in this issue may not be reproduced in whole or in part in any form or format without special permission from the publisher.

POSTAL INFORMATION: SCHOLASTIC MATH MAGAZINE (ISSN 0198-8379; in Canada, 2-c no. 9386; USPS 567-350) is published 12 times during the school year; biweekly September, October, March; monthly November, December, January, February, April, May; by Scholastic Inc., 2931 E. McCarty St., P.O. Box 3710, Jefferson City, MO 65102-3710. Periodical postage paid at Jefferson City, MO 65102 and additional mailing offices. POSTMASTERS: Send notice of address changes to SCHOLASTIC MATH MAGAZINE, 2931 East McCarty St., P.O. Box 3710, Jefferson City, MO 65102-3710. **PUBLISHING INFORMATION:** U.S. prices: \$8.25 each per year, \$5.45 per semester, for 10 or more subscriptions to the same address. Fewer than 10 subscriptions, each: \$24.95 student, \$29.99 Teacher's, per school year. Single copy: \$5.50 student, \$6.50 Teacher's. Communications relating to subscriptions should be addressed to SCHOLASTIC MATH MAGAZINE, 2931 East McCarty Street, P.O. Box 3710, Jefferson City, MO 65102-3710, or call toll-free: 1-800-SCHOLASTIC, or on the Web, www.scholastic.com/custsupport. Communications relating to editorial matter should be addressed to Karina Hamalainen, SCHOLASTIC MATH MAGAZINE, 557 Broadway, New York, NY 10012-3999. E-mail address: MathMag@scholastic.com. ©2015 by Scholastic Inc. All rights reserved. Material in this issue may not be reproduced in whole or in part in any form or format without special permission from the publisher.

ANSWERS

PAGES 2-3

NUMBERS IN THE NEWS

Not-So-Mini-Pigs

6,567%

Check Your Neck

$f = 23$ pounds

$t = 41$ pounds

Printed Palace

About 360 layers

Do the Math

2.3

PAGE 4

DEEP DIVE

1. Refer to students' coordinate grids. Please accept all reasonable graph-based measurements.

2. 30 units 3. About 38 meters

4. About 290 meters

PAGE 6

STUNT MATH

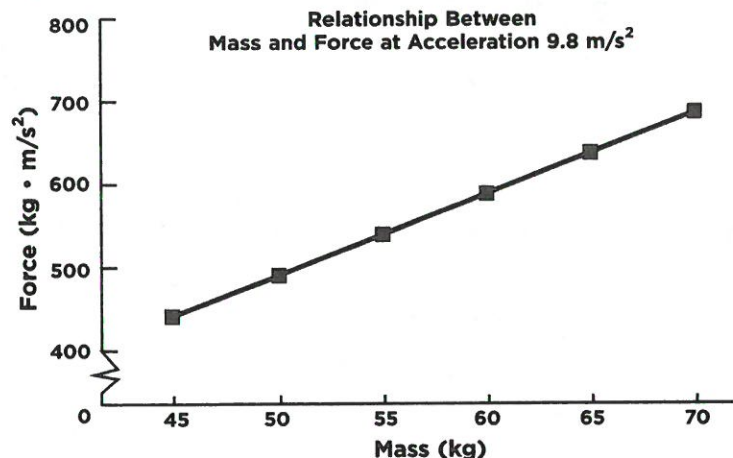
1.

Input	Function Rule	Output
Mass (m) (kg)	$m \times 9.8$	Force ($\text{kg} \cdot \text{m}/\text{s}^2$)
45	45×9.8	441
50	50×9.8	490
55	55×9.8	539
60	60×9.8	588
65	65×9.8	637
70	70×9.8	686

2. $637 \text{ kg} \cdot \text{m}/\text{s}^2$ 3. $980 \text{ kg} \cdot \text{m}/\text{s}^2$

4. $F = 9.8 \times m$

5.



PAGE 8

WILD IN THE CITY

(Please accept all reasonable graph-based estimates.)

1. 15,000 meters

2. 8,000 meters

3. About 7,000 meters

4. 3 a.m.

5. Between 6 a.m. and 7 a.m.

6. Sleeping, eating, or waiting for nightfall to hunt

7a. About 9,000 meters

7b. The Chicago coyote is nocturnal; it has to do most of its traveling and hunting before the city wakes up.

8a. About 1,200 meters

8b. The Chicago coyote needs to hide during the city's morning rush, while the forest coyote is free to roam.

9. The Chicago coyote must go out of its way to avoid non-usable territory, such as buildings and roads, and people.

PAGE 12

CLIMBING MOUNT EVEREST

1. C 2. A 3. B 4. B 5. B 6. D

7. 79 climbers

8. 0 to 19

9. \$55,000

10. \$65,000

PAGE 14

GAME CHANGERS

1. (We used 3.14 for π .)

Sport	Ratio of Goal Area to Ball Area
Standard Golf	$\frac{14.2 \text{ square in.}}{2.2 \text{ square in.}}$
Hack Golf	$\frac{176.6 \text{ square in.}}{2.2 \text{ square in.}}$
Field Hockey	$\frac{12,096 \text{ square in.}}{6.6 \text{ square in.}}$
Basketball	$\frac{254.3 \text{ square in.}}{70.8 \text{ square in.}}$
Soccer (size 5 ball)	$\frac{27,648 \text{ square in.}}{58.7 \text{ square in.}}$

2. Basketball, standard golf, Hack golf, soccer, field hockey

3. 84.7 feet by 28.2 feet, or 1016.5 inches by 338.8 inches

4. Student answers will vary.

BACK PAGE

STILL GRUMPY

1. B

2. A

3. B

4. A

5. B

To find the answers online, click on "Teaching Resources."