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MATH

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Whether your students are into *iCarly*, reading, the Internet, figure skating, baking, comics, or LeBron James... there's something for them in this issue! And of course, we uncover the crucial math behind every topic. I'd especially like to point out our popular "CalcuLIT" feature on pages 6–7. Literacy across the content areas is so important in schools these days. By subscribing to *MATH*, you're already meeting that need! But in CalcuLIT, we take it a step further by featuring popular young-adult books that incorporate math. We hope it will inspire students to take a trip to the library—and learn some math at the same time!

Take care,

Jack Silbert
Jack Silbert, Editor

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SKILLS GUIDE

= Calculator Use Suitable = Critical Thinking = Writing in Math

ARTICLE	MAJOR FOCUS	REAL-LIFE CONNECTIONS	SUPPLEMENTARY SKILLS	NCTM STANDARDS*
ACTIVITY: cover <i>iCarly?</i> Isosceles!	Geometry: isosceles triangle	• <i>iCarly</i> 's Miranda Cosgrove	• Vocabulary: congruent • Solving for a missing number	1, 2, 3, 4, 8
FAST MATH: p. 2	Mixed skills	• New EPCOT math attraction • President Obama on math	• Metric system; square roots; rate: feet per second; etc.	1, 4, 6, 8, 9
MATH FOR YOUR DAILY LIFE: p. 4 Cosgrove's <i>iCosts</i>	Money math: costs of starting a Web site	• <i>iCarly</i> 's Miranda Cosgrove • Running a Web site	• Money +, -, × • Reading a chart	1, 4, 6, 7, 8, 9, 10
STATISTICS: p. 6 CalcuLIT!	Math in literature	• Popular young-adult fiction and nonfiction	• Elapsed time; exponents; perfect numbers; degrees longitude; etc.	1, 2, 4, 6, 7, 8, 9
MATH AT WORK: p. 8 Cake and Pi	Geometry: circumference and area of circles	• <i>Cake Boss</i> Buddy Valastro • Career: Baker	• Vocab: diameter, radius, pi • Decimal ×	1, 3, 4, 6, 8, 9
SPORTS BY THE NUMBERS: p. 10 Great Skates!	Figure-skating scoring: decimal addition	• 2010 Winter Olympics • Figure skater Rachael Flatt	• Completing a chart • Ordering decimals	1, 5, 6, 8, 9, 10
PRACTICE TEST: p. 12 Graph My Life!	Graph review: bar, line, circle	• Standardized test practice	• Median and mean • Writing a fraction	1, 5, 6, 8, 10
MATH WIZ COMICS: p. 14 Ratio Racing	Equivalent ratios	• Comic strips as a literacy tool	• Cross-multiplying • Three ways to write ratios	1, 2, 8
STAR WRAP: back page LeBron Leads the Division	Fraction division	• NBA star LeBron James	• Reciprocals • Simplest form	1, 2, 8

***NCTM Middle School Curriculum Standards**

- | | |
|--------------------------------|------------------------|
| 1. Number and Operations | 6. Problem Solving |
| 2. Algebra | 7. Reasoning and Proof |
| 3. Geometry | 8. Communication |
| 4. Measurement | 9. Connections |
| 5. Data Analysis & Probability | 10. Representation |

For more detailed information about the National Council of Teachers of Mathematics Standards, write to: NCTM, 1906 Association Drive, Reston, VA 20191-9988. Phone: (703) 620-9840. Fax: (703) 476-2970. E-mail: infocentral@nctm.org

COMING UP IN OUR MARCH 1ST ISSUE...

CONTEST: A student's "Mathmaticious" YouTube sensation inspires our latest math music-video contest! Get those cameras ready!

SPORTS BY THE NUMBERS: Top skateboarder Ryan Sheckler discusses **degrees in a circle**, the basis for naming many skate tricks.

STATISTICS: Teen volunteering is on the rise in the U.S.! Our **circle graph** breaks down the types of organizations that do volunteer work.

MATH FOR YOUR DAILY LIFE: Nat and Alex Wolff (TV's *Naked Brothers Band*) talk about **costs of concert and sports tickets**.

...AND MUCH, MUCH MORE!

SUPPLEMENT TO SCHOLASTIC MATH



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TEACHING TIPS

COVER

iCarly? Isosceles!

Remind students to read carefully and they'll have no problem. A diagram may help some students.

PAGES 2 – 3

Fast Math

Critic's Corner: Wizards of Waverly Place: As a hint for students, have them think of equation solving. Divide both sides of the "equation" 1 mile \approx 1.61 kilometers by 1.61 and this results in 0.62 miles \approx 1 kilometer.

That's "Sum" Roller Coaster: Students should write the information as a rate: 780 feet per minute and use dimensional analysis to change this to an equivalent rate with different units:

$$\frac{780 \text{ ft}}{1 \text{ min.}} \Sigma \frac{1 \text{ min.}}{60 \text{ sec.}} = \frac{13 \text{ ft}}{1 \text{ sec.}}$$

You might also ask students to write 12 feet per second as an equivalent rate in feet per minute:

$$\frac{12 \text{ ft}}{1 \text{ sec.}} \Sigma \frac{60 \text{ sec.}}{1 \text{ min.}} = \frac{720 \text{ ft}}{1 \text{ min.}}$$

PAGES 4 – 5

Cosgrove's iCosts

It might be helpful to review vocabulary with students: annual, monthly, initial cost. Discuss general costs with students, such as the computer and Internet access. Ask if any students have tried to design their own Web site, as some students may have set up their own wikispace.

PAGES 6 – 7

CalcuLIT!

Pair students together to work these problems. They will need to read slow and carefully!

PAGES 8 – 9

Cakes and Pi

Work through a sample problem with students. Hold up a circular object (plastic lid works well) and ask students to estimate the circumference. If you have a piece of string to wrap around the object, it will help students remember the meaning of the term circumference. Now ask a student to measure the radius. Calculate the area and circumference. My students often use the wrong formula and have difficulty remembering which formula is for area and which formula is for circumference. Students do remember the area formula for a rectangle. I try to make the connection that length \times width (rectangle) is similar to radius \times radius (circle).

PAGES 10 – 11

Great Skates!

Students only need to add decimals for this activity so they should not need to review an example.

PAGES 12 – 13

Graph My Life!

Review the basic concepts behind the three types of graphs. Bar graphs compare quantities of different items. Line graphs show us a change in data over time. Circle graphs show us how a total amount is divided in categories.

PAGES 14 – 15

Ratio Racing

Discuss equivalent ratios with students. In the sample, a method shown to determine if two ratios are equal is to check if the cross products are the same. Ask students if there is another way to check if $\frac{2}{5} = \frac{6}{10}$. Hopefully, a student will explain that if you multiply 2 by 3 you get 6, but multiplying 5 by 3 you do not get 10. Similarly, multiplying 5 by 2 you get 10, but multiplying 2 by 2 you do not get 6. Students using this method are thinking about how you write equivalent fractions.

BACK PAGE

LeBron Leads...Division

Ask students how many halves are in a fourth and most will answer 2. Two is the correct answer to how many fourths are in a half, but not how many halves are in a fourth. This may help to focus attention on what division of fractions means.

$\frac{1}{4} \div \frac{1}{2} = \frac{1}{2}$ How many halves in a fourth?

$\frac{1}{2} \div \frac{1}{4} = 2$ How many fourths in a half?

Review fraction division with students. If possible have students try the applet at http://nlvm.usu.edu/en/nav/frames_asid_265_g_1_t_1.html?open=activities&from=topic_t_1.html. It's an interesting applet that uses a number line model for dividing fractions.

For a list of
ONLINE RESOURCES
related to this issue, visit:
www.scholastic.com/math

EXTENSION ACTIVITIES

COVER

iCarly? Isosceles!

The word isosceles is of Greek origin, from *isos* meaning equal and *skelos* meaning leg. This prefix is common in medicine and science (isotonic solution, isotope, and isocellular), mathematics (isometric and isometry), and government (isonomy).

PAGES 2 – 3

Fast Math

Critic's Corner: Wizards of Waverly Place: In our next issue, we'll have a contest asking students to make a math music video! So they might want to get a head start thinking of original math songs (or parodies of popular songs).

That's "Sum" Roller Coaster: Use dimensional analysis (see "Teaching Tips" for pages 2–3) to change 12 feet per second to miles per hour. (answer \approx 8.2 mph)

PAGES 4 – 5

Cosgrove's iCosts

Ask your school's webmaster to discuss Web site design and maintenance with your students. There's more to it than your students may suspect!

PAGES 6 – 7

CalculIT!

Check if your language arts teachers have copies of any of the books mentioned. Share the list with your librarian so that the books might be purchased. Check out more information about perfect numbers at http://en.wikipedia.org/wiki/Perfect_number. Along with perfect numbers your students could also research abundant and deficient numbers.

PAGES 8 – 9

Cakes and Pi

Are there students in class interested in baking or cooking? (Or just like to eat?) There are many, many possibilities

for a "food math" unit, from equivalent measurements to unit prices to increasing a recipe, and much, much more. Several cross-curricular projects with the science teacher as well.

PAGES 10 – 11

Great Skates!

Each Olympic medal must be at least three millimeters thick and 60 millimeters in diameter. Use this information and ask students to find the circumference of a medal and the area of the circular faces.

PAGES 12 – 13

Graph My Life!

Students may enjoy writing their own poll questions for decisions in their lives, surveying the class, and graphing the results!

Teaching tips and extension activities written by Laurie Boswell

*Laurie is a teacher and the headmaster of
Riverside School in Lyndonville, Vermont.*

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