The National Council of Teachers of Mathematics

Situation

The National Council of Teachers of Mathematics (NCTM), based in Reston, VA, is the world's largest mathematics education organization. It provides resources, guidance, and advocacy for its membership which comprises math educators, math tutors, staff development professionals, school and district administrators, and others.

NCTM needed a firm with the expertise and capacity to assume most of the design and production responsibilities previously handled by its in-house creative services department. One of its most immediate needs was finding a creative partner to develop a new annual meeting brand identity that better conveyed the spirit and energy of the event and organization.

Solution

A key challenge of the assignment was designing a conference brand that not only conveyed a more dynamic presence but also easily accommodated updates for ensuing years and meeting locations. Examples of our work can be seen on the following pages.

As part of the new meeting brand identity, we developed a style guide as well as save-the-date materials that included postcards, print ads, and a suite of online graphics. We are continuing to create conference support and communications materials through next year that include emails, digital ads, website updates, various templates, signage, and more.

In addition to the conference work, TDC has created an extensive range of branding and marketing communications assets for NCTM's internal and external clients and stakeholders. These include:

- Updated website graphics
- Digital banner graphics
- Social media materials
- Print ads
- Email templates and PPT graphics
- Annual reports, workbooks, and collateral materials
- Classroom support materials and more

Results

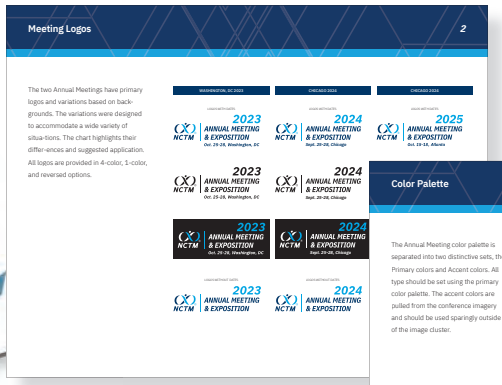
NCTM has been extremely pleased with our delivered work and support to date. The organization has extended its relationship with TDC beyond the original contract time period and continues to expand the scope of projects it entrusts to us.

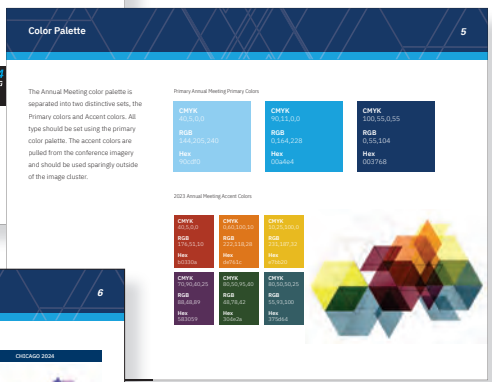
- identities
- annual meeting graphic
- brand standards

2023
ANNUAL MEETING & EXPOSITION
Oct. 25-28, Washington, DC

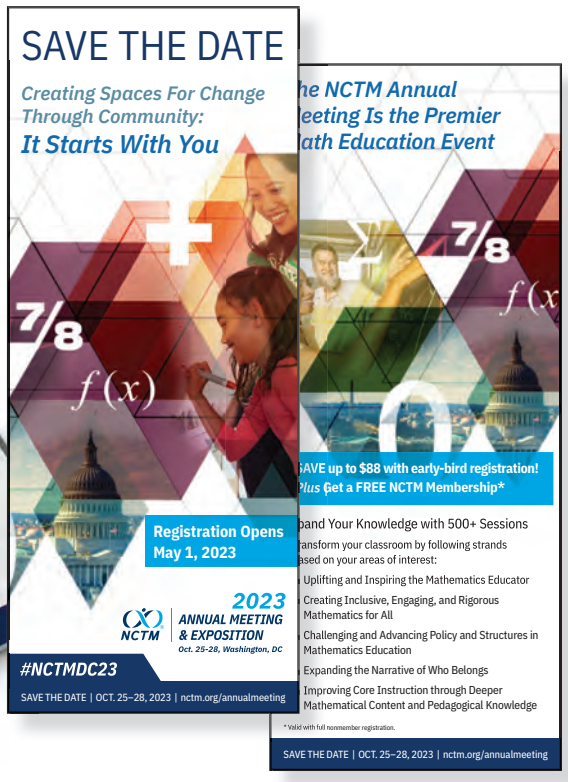
2024
ANNUAL MEETING & EXPOSITION
Sept. 25-28, Chicago

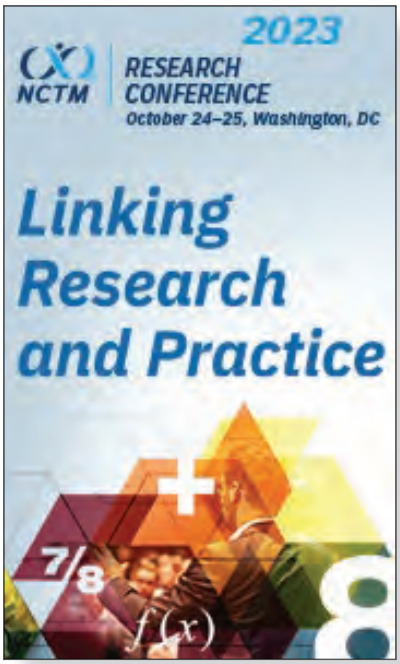
2025
ANNUAL MEETING & EXPOSITION
Oct. 15-18, Atlanta

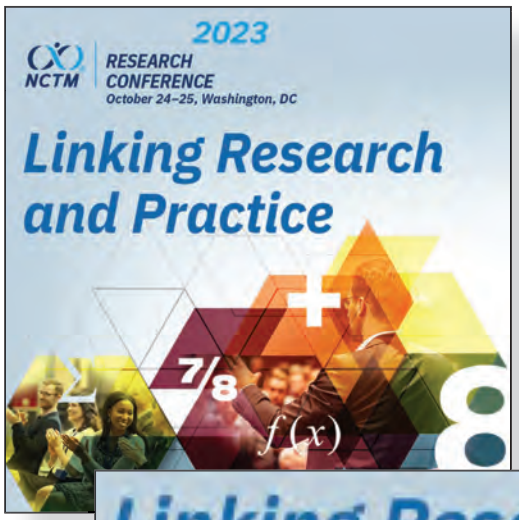




- postcard
- print ad
- buckslip




2023
NCTM
RESEARCH
CONFERENCE
October 24–25, Washington, DC
Linking
Research
and Practice


2023
NCTM
RESEARCH
CONFERENCE
October 24–25, Washington, DC
Linking Research
and Practice


Linking Research
and Practice
2023
NCTM
RESEARCH
CONFERENCE
October 24–25, Washington, DC


Linking Research
and Practice
2023
NCTM
RESEARCH
CONFERENCE
October 24–25, Washington, DC

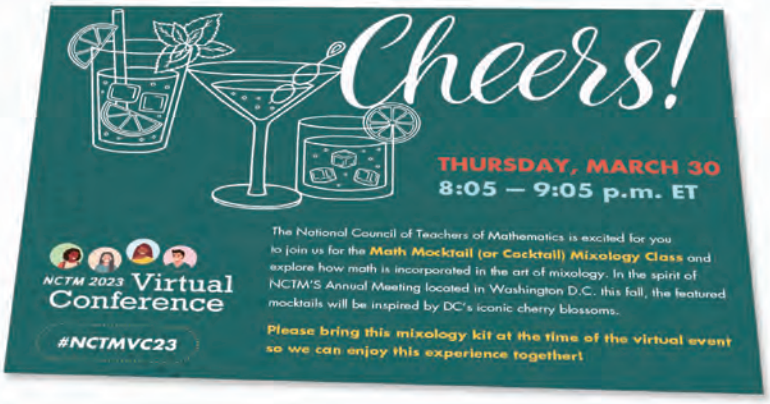

Creating Spaces For Change
Through Community:
It Starts With You
2023
NCTM
ANNUAL MEETING
& EXPOSITION
Oct.25–28, Washington, DC

regional conference

- powerpoint slide
- print ad
- online graphics

virtual conferenece

- cocktail postcard
- print ad
- online graphics

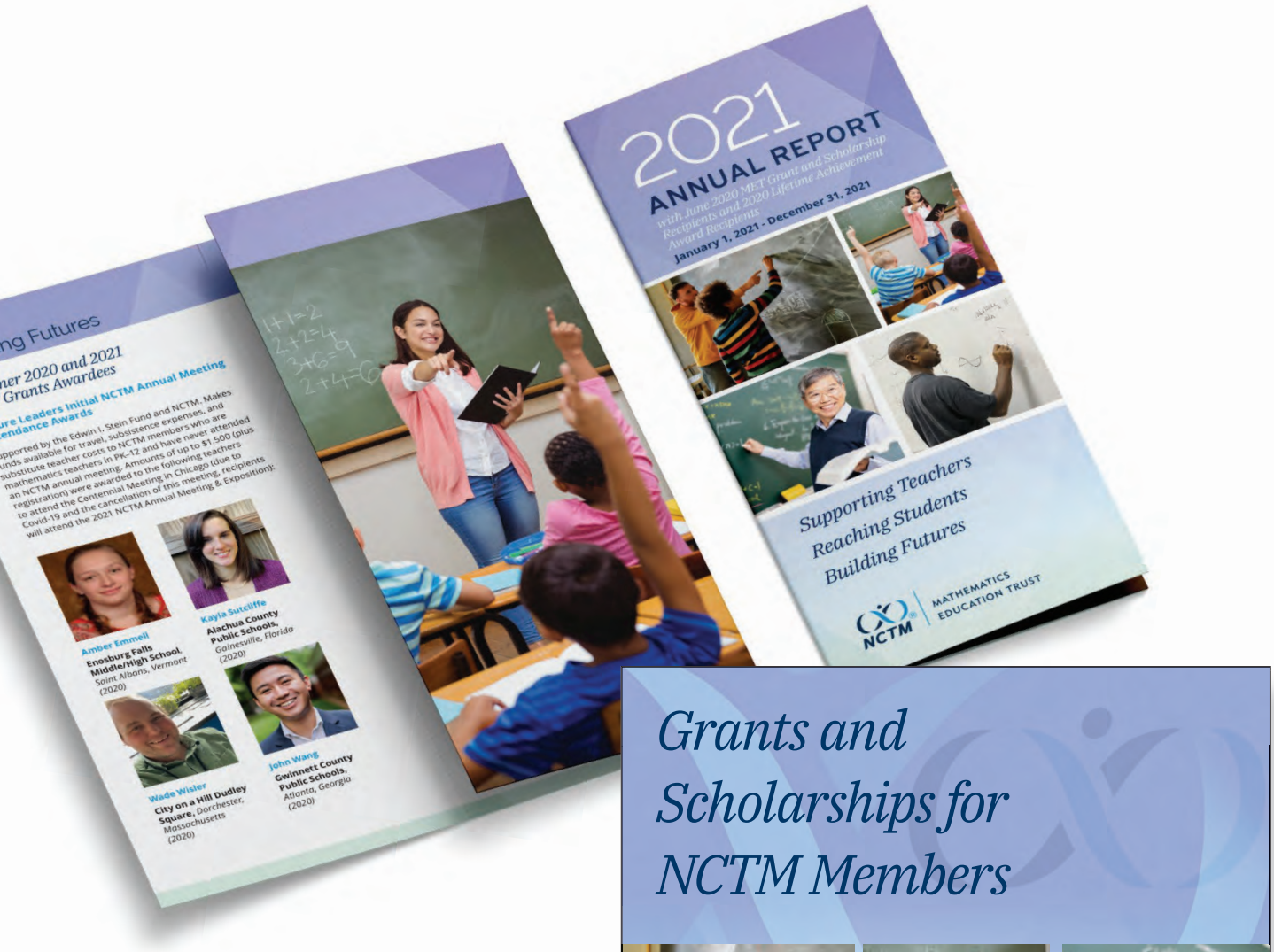


proactive coaching book

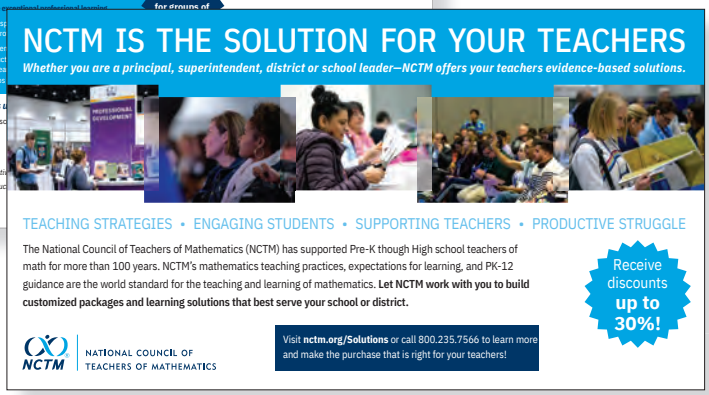
- powerpoint slide
- print ad
- online graphics

mathematics education trust

- annual report
- print ad



- end-of-year postcard
- speaker print ad
- event signage

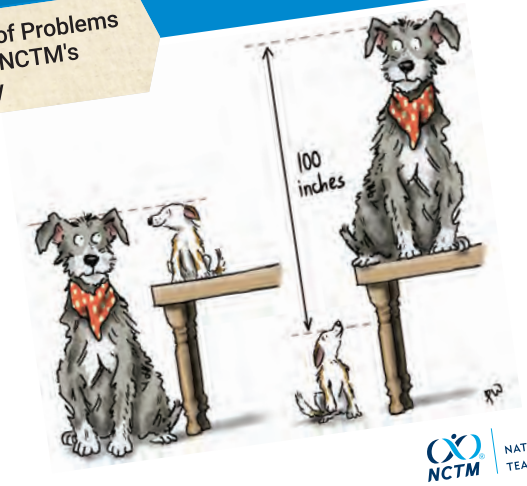


- 100 problems workbook

STUDENT BOOK

One Hundred Problems Involving the Number 100

A Collection of Problems to Celebrate NCTM's First Century



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G. PATRICK VENNEBUSH

STUDENT BOOK

PROBLEM 20

Farey Tales

A Farey sequence F_n is the set of all fractions from 0 to 1 with every possible denominator less than or equal to n. For instance—

$$F_5 = \left\{\frac{0}{1}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{1}{1}\right\}$$

What is the 100th term of F_{100}?

WORK AREA

Celsius and Fahrenheit

The following problem is modified from the Temperature problem appearing on the NRICH website[1].

Temperatures are often measured in degrees Celsius, °C, or degrees Fahrenheit, °F. These two temperature scales are related.

- The freezing point of water is 0°C and 32°F.
- The boiling point of water is 100°C and 212°F.

At what temperature are the Celsius and Fahrenheit scales equal?

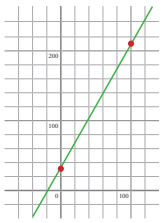
One possibility is to **make a table** showing corresponding temperatures in each scale. The table below started with two known equalities, 0°C = 32°F and 100°C = 212°F, which are shown in italics.

Temperature °C							
100	50	10	*0*	–10	–20	–30	–40
Temperature °F							
212	122	50	*32*	14	–4	–22	–40

From there, other corresponding temperatures could be added. Assuming that both scales are linear, which seems like a reasonable assumption, then halfway from 100 to 0 is 50°C, and halfway from 212 to 32 is 122°F. That's reflected in the second column. But then, if 50 – 0 = 50, then 1/5 of the way from 0 to 50 would be 10°C; likewise, 122 – 32 = 90, and 1/5 of 90 is 18, so 32 + 18 = 50°F would correspond to 10°C. That's reflected in the third column.

For all positive temperatures in the table, the Celsius [illegible] heit temperature. That [illegible] dip below 0°C for the [illegible] qual the temperature in [illegible] he table were continued by [illegible] 8 from Fahrenheit in each [illegible] ponded to –40°F.

[illegible] **ed an equation** to solve [illegible] and 100°C = 212°F, the [illegible] 2) could be plotted on a [illegible] resents the temperature in degrees Celsius and the vertical axis represents the temperature in degrees Fahrenheit.



A straight line connecting these points would have a slope of (212 – 32)/(100 – 0) = 180/100 = 9/5. Since the *y*-intercept occurs at (0, 32), the equation showing the correspondence between temperatures is $y = 9/5x + 32$, where y is the Fahrenheit temperature and x is the Celsius temperature. The temperature in both scales will be the same when $x = y$, or when $x = 9/5x + 32$. This happens when $-4/5x = 32$, or when $x = -40$.

Of course, if you already know the relationship between the Celsius and Fahrenheit scales, then the equation $y = 9/5x + 32$ may look familiar. In many reference books, the relationship is written as $F = 9/5C + 32$. If you are familiar with the equation, you can use a formula to solve the problem. The work is the same as above; simply replace F with C, then solve to find $C = -40$.

The temperature in degrees Celsius that equals the temperature in degrees Fahrenheit is –40°C = –40°F.

STUDENT BOOK

PROBLEM 29

The Locker Problem

A school with 100 students has 100 lockers numbered 1 to 100. The first student goes along and opens every locker. The second student closes every even-numbered locker. The third student changes the state (that is, opens it if it's closed, or closes it if it's open) of every locker whose number is a multiple of 3. The fourth student changes the state of every locker whose number is a multiple of 4. And so on, with the *n*th student changing the state of every locker whose number is a multiple of *n*. When all 100 students have finished opening and closing lockers, how many lockers will be open? Which ones?

WORK AREA

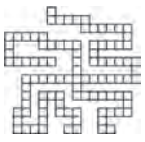
STUDENT BOOK

PROBLEM 66

Around the Squares

This figure consists of 100 square units with adjacent squares sharing a side. What is the perimeter of the figure?

WORK AREA




Notice and Wonder®
NCTM
NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS
I NOTICE
» Glass pyramids. The pyramids are all different sizes.
» There are black lines on each face of the pyramid.
» Each face of the pyramid is in the shape of a triangle, and each glass panel is a quadrilateral.
» The building in the back is made of multi-colored bricks.
» The reflection of the sky and clouds in the glass.
» Lines and geometric shapes around the entryway of the building.
» The glass panels form a tessellation.
» The reflection of trees in the windows of the building.
» The pyramids resemble the pyramids at the Louvre in Paris, France.
I WONDER
» Why are there glass pyramids at this building?
» How many pyramids are there?
» Are the black lines engraved in the glass or painted on the glass?
» Who created the glass pyramids, and what is t heir significance?
» Are the pyramids hollow inside?
» What type of quadrilaterals are the glass panels?
» Are the pyramids all the same size? Do they have the same volume and/or surface area?
» How tall are the pyramids?
» Are the lines on the glass parallel?
» Is every quadrilateral the same size? Are the quadri-laterals all parallelograms?
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I NOTICE
I WONDER
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