

# MATH<sup>®</sup>

Where Math  
Gets Real<sup>™</sup>

## GEOMETRY

Get ready for  
a snowball fight!

## PROPORTIONS

How do artists  
make giant murals?

This meerkat is  
a spy! Its camera  
eye can record  
for 2 hours.

Robots with  
hidden cameras  
are helping  
scientists spy  
on wildlife

## UNDERCOVER

# Meerkat

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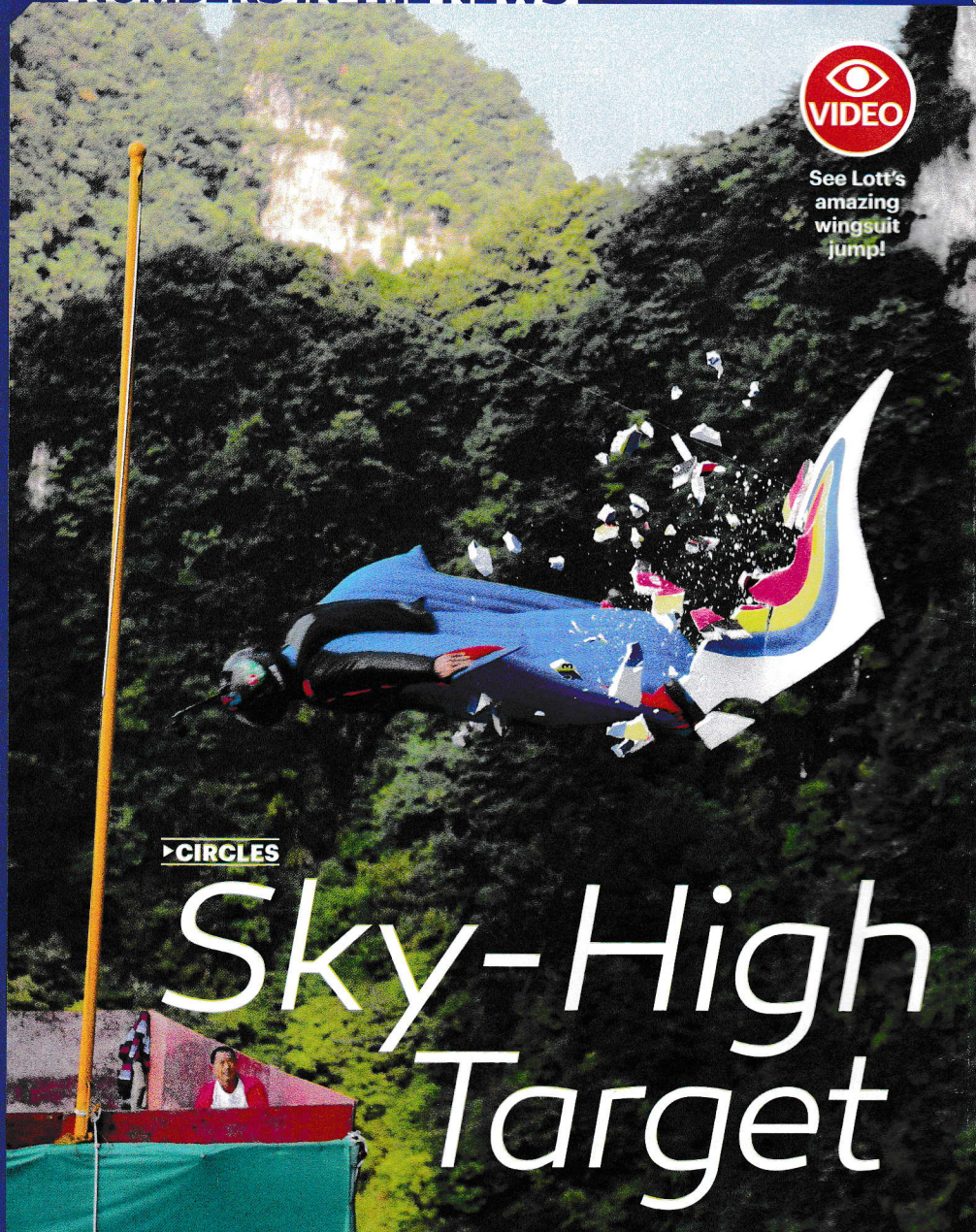
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JOHN DOWNER PRODUCTIONS (MEERKATS)



See Lott's amazing wingsuit jump!



**CIRCLES**

# Sky-High Target

This past fall, a group of elite skydivers jumped off a 4,780-foot cliff in Tianmen Mountain National Park in China. They flew using specialized wingsuits—garments that help skydivers glide long distances. These daredevils were competing in the 6th Carabao World Wingsuit Championship. In the contest, participants whiz through the air and try to hit as many polystyrene targets with their bodies as possible. Gabriel Lott of Brazil took home the top prize.

It takes years of training to prepare for a wingsuit jump. You need to be an experienced skydiver first. In Brazil, you must log 250 plane jumps with parachutes before your first wingsuit jump. Lott loves the thrill of the sport. "Every time I'm there, I still get adrenaline no matter how many jumps I've done." And that's saying something—Lott has more than 600 wingsuit jumps under his belt!

**? The foam target that Lott hit had a circumference of 2.6 feet. What was its area, rounded to the nearest hundredth? (Hint: The formula for a circle's area is  $\pi r^2$ .)**



## EQUATIONS

### A NEW TYPE OF

# Chocolate

Looking for a special treat for your Valentine? Now you can buy chocolate in a new rosy hue. Ruby chocolate is made from a type of cacao bean that is processed to remain pink. The result tastes fruity and a bit sour, not sweet or bitter.

The world's largest chocolate manufacturer, Barry Callebaut in Switzerland, spent 10 years developing it. If ruby chocolate is accepted by the Food and Drug Administration, it will be the first new variety since white chocolate.

**? Ruby chocolate debuted in 2017. That's the sum of the year white chocolate was first sold in the U.S. and 72. Write and solve an equation to find when white chocolate was first sold in the U.S. using  $w$  as the variable.**



## METRIC CONVERSIONS

# Rice Sculpture



After you harvest rice, what do you do with the leftover straw? In northern Japan, participants in the Wara Art Festival use *wara*—the Japanese word for “rice straw”—to make sculptures.

Traditionally, the Japanese recycle *wara* for many things, like floor mats, ornaments, and feed for livestock. But 10 years ago, the region's farming community asked students at the nearby Musashino Art University to make art out of *wara*. And the festival was born!

**? The top of the gorilla's head is about 20 feet high. What's that in meters, rounded to the nearest tenth? (Hint: 1 meter = 3.3 feet.)**





Robot designer John Nolan works on the Spy Pup's camera eye.



accepted by the dogs by mimicking their body language. With its 24 moving parts, the robot wagged its tail and made a bow, signifying it wanted to play. "When you look back at the footage, you go, 'Wow, I can't imagine we managed to capture that behavior'," says Michael Gordon, one of the producers of the TV series.

Other animal robots needed extra help to blend in. Meerkats in Africa have a superstrong sense of smell. They can even smell food when it's hidden underground! So Gordon's team smeared meerkat poop on Spy Meerkat to cover its unnatural smell.

Sometimes wild spies are funny. When the team was filming in India, a real monkey started pulling Spy Macaque Monkey's tail. So the team made the robot react. It raised its eyebrows and opened its mouth.

"These expressions make the robot come alive even more," says Gordon.

—Cici Zhang

# Wild Spies

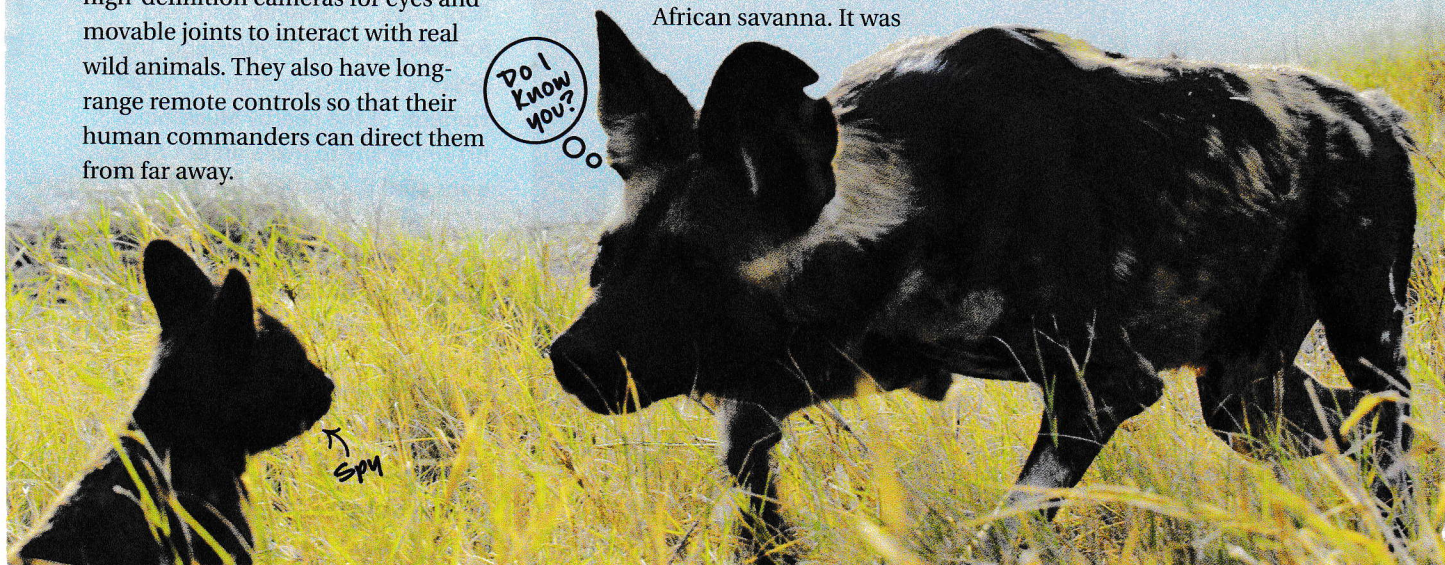
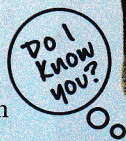
**Meet the high-tech robots that give us an insider's view of the animal kingdom**

**S**cientists have an extremely hard time observing wild animals in their habitats. Suspicious and elusive, some creatures scurry into hiding when a big, noisy human gets too close. To outsmart these wild animals, documentary filmmakers from U.K.-based John Downer Productions deploy lifelike robots to do candid-camera work.

Each "spy animal" robot has high-definition cameras for eyes and movable joints to interact with real wild animals. They also have long-range remote controls so that their human commanders can direct them from far away.

The filmmakers teamed up with scientists to learn more about the animals they wanted to follow. They built 34 spy creatures—including Spy Meerkat and Spy Pup. These robot agents star in *Spy in the Wild*, a TV series that aired on PBS last year. The footage the team shot recorded some behaviors that had never been filmed or even witnessed before.

For example, Spy Pup was sent to infiltrate a pack of wild dogs on the African savanna. It was





# EXPRESSIONS FROM TABLES

online



PLAY A GAME

2 SKILLS SHEETS

When you have a table of data that shows a relationship between two quantities, an algebraic expression can sometimes represent that relationship.

**EXAMPLE:** At one of the film sites, the team spent several hours per day filming. The chart below shows the number of total hours they filmed after each day. Write an expression in the chart for how many total hours they spent filming after  $d$  days. How many hours would they have spent filming in 7 days?

**Step 1** Determine the relationship between the total hours spent filming and the number of days.

DAYS	TOTAL HOURS FILMING
1	7
2	14
3	21
$d$	?

$$1 \times 7 = 7$$

$$2 \times 7 = 14$$

$$3 \times 7 = 21$$

So the total hours spent filming is equal to the number of days times 7.

**Step 2** Write the relationship as an expression.

$$\text{Hours spent filming} = \text{Days} \times 7 = d \times 7$$

**Step 3** Evaluate the expression for  $d = 7$ .

$$7 \times 7 = 49$$

→ So after 7 days, the team spent 49 hours filming.



Use the tables below to write and evaluate algebraic expressions about the *Spy in the Wild* documentary TV miniseries.

**1 A.** The documentary team spent years filming *Spy in the Wild*. The table below shows how many hours of footage were shot each year. Complete the table with an expression for the amount of footage shot after  $y$  years.

FOOTAGE BY YEAR	
YEARS	TOTAL FOOTAGE (HOURS)
1	2,500
2	5,000
3	7,500
$y$	

**1B.** How much footage would they have after 5 years?

**2 A.** It took many cameras to capture the special moments in the series. The table below shows the hours of footage shot for each episode. Complete the table with an expression for the amount of film shot after  $e$  episodes.

FOOTAGE BY EPISODE	
NUMBER OF EPISODES	TOTAL FOOTAGE (HOURS)
2	2,500
3	3,750
4	5,000
$e$	

**2B.** How many hours of footage would be shot for 7 episodes?

**3 A.** The table below shows how many total minutes it takes to watch several episodes of *Spy in the Wild* in a row. Complete the table with an expression for the time needed to watch  $n$  episodes.

BINGE-WATCHING THE SPIES	
NUMBER OF EPISODES	TOTAL TIME TO WATCH (MINUTES)
2	120
4	240
6	360
$n$	

**3B.** If they expanded the series to 9 episodes, how many hours would it take to watch them all?





See a  
Yukigassen  
fight in  
action!

# SNOWBALL FIGHT!

**Professional snowball fighters battle it out at this month's world championships in Japan**



**E**very February, Ky McMaster travels 4,350 miles from his home in Alberta, Canada, to Sobetsu, Japan. There, at the foot of a smoking volcano, he prepares for battle.

In the center of a snow-covered court, he and his six teammates face their rivals. The members of the two teams shake hands and wish each other "Good fight." Then they retreat to opposite ends of the court and wait for the countdown: "3, 2, 1 . . . Yukigassen!"

*Yukigassen* means "snow battle" in Japanese. The sport is a cross between dodgeball and capture the flag. There are three ways to win a match: capturing your opponents' flag, tagging all of your opponents out with snowballs, or having the most players left after a three-minute match. The team that wins two matches out of three takes the game.

**6** FEBRUARY 12, 2018

Officials in Sobetsu created Yukigassen 30 years ago to draw tourists to the snowy region. The sport has since gained a worldwide following, with teams in Canada, Finland, Australia, and other countries. More than 100 teams will face off this month at the world championships in Sobetsu.

But so far, no team from outside Japan has ever won the tournament. "The Japanese are very intimidating," says McMaster, who's the captain of the Canadian Snowbattlers. "Their aim is deadly accurate—they can hit an opponent 8 out of 10 times!"

The Canadian Snowbattlers have had to come up with strategies to try to beat the Japanese teams. "They are a quiet and respectful people," says McMaster. "The teams always communicate with hand signals. So one of our tactics is to be loud and obnoxious to confuse them."

The team's efforts have paid off. In 2016, the Canadian Snowbattlers were the first international team to advance to the second day of the tournament. Their success has made them minor celebrities in Japan. "Everyone's always asking for our autographs," says McMaster. "We're like movie stars over there."

This year, the Snowbattlers hope to make their fans proud. "We're playing to win," he says.

—Ariel Bleicher

**90**  
Number of  
snowballs each  
team gets per  
match





# DISTANCE USING THE PYTHAGOREAN THEOREM

online



2  
SKILLS  
SHEETS

The Yukigassen court is like a coordinate grid. You can use the Pythagorean theorem to find the distance you need to run or throw snowballs at your opponents.



**The grid at the bottom shows the dimensions of a**

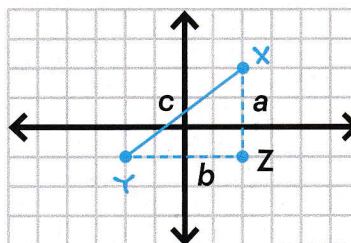
**Yukigassen court. Your team's snow shelters are marked in green and your opponent's are orange. Each unit on the grid is 1 meter. Use the grid to answer the questions that follow. Round distances to the nearest tenth.**

**1** At the start of the match, your team is lined up at the back line (vertical blue line at each end). You're at  $(-12, -4)$ . How far is your team's flag at  $(-10, 0)$ ?

**2** Your teammate is at  $(0, 1)$ , near the center shelter. She wants to throw a snowball at an opponent behind the shelter at  $(5, -2)$ . How far is that?

**EXAMPLE:** How far is point  $X(2, 2)$  from point  $Y(-2, -1)$ ?

**Step 1** Plot both points on the coordinate grid.



**Step 2** Draw a vertical ray down from point  $X$ . Then draw a horizontal ray from  $Y$  to intersect with the first ray in a right angle. Label this point  $Z$ .

**Step 3** Find the distance between points  $X$  and  $Z$ . This is  $a$ .

$$a = |2 - (-1)| = 3$$

**Step 4** Find the distance between points  $Y$  and  $Z$ . This is  $b$ .

$$b = |-2 - 2| = |-4| = 4$$

**Step 5** Use the Pythagorean theorem to calculate the distance between points  $X$  and  $Y$  along the triangle's hypotenuse ( $c$ ).

$$a^2 + b^2 = c^2$$

$$3^2 + 4^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

$$\sqrt{25} = c$$

$$5 = c$$

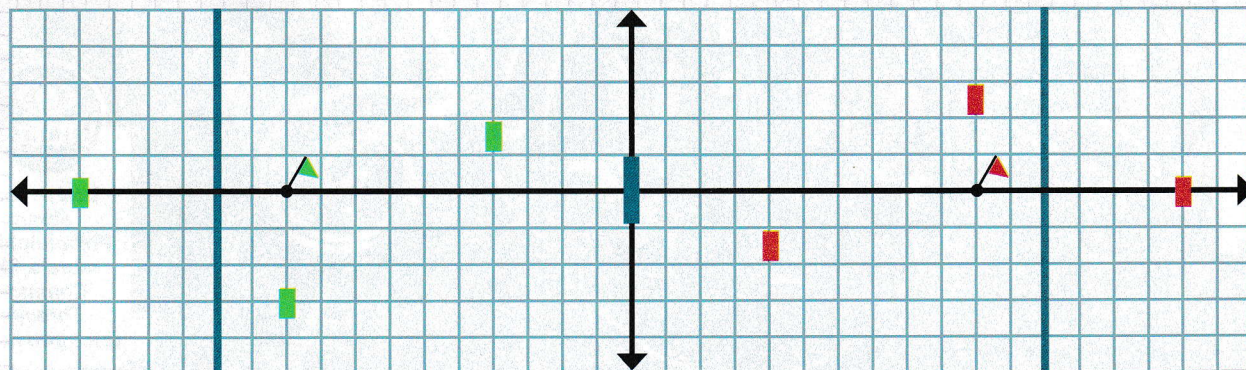
→ So point  $Y$  is 5 units away from point  $X$ .

**3** Each team receives 90 snowballs, which are stored behind the shelter at each end of the field. Your team's stash is at  $(-17, 0)$ . If you grab a snowball and run to  $(1, 4)$ , how far did you go?

throws a snowball at you. How far will it have to travel to hit you?

**5** You're at  $(5, -2)$ . How far do you have to run to capture the other team's flag at  $(10, 0)$ ?

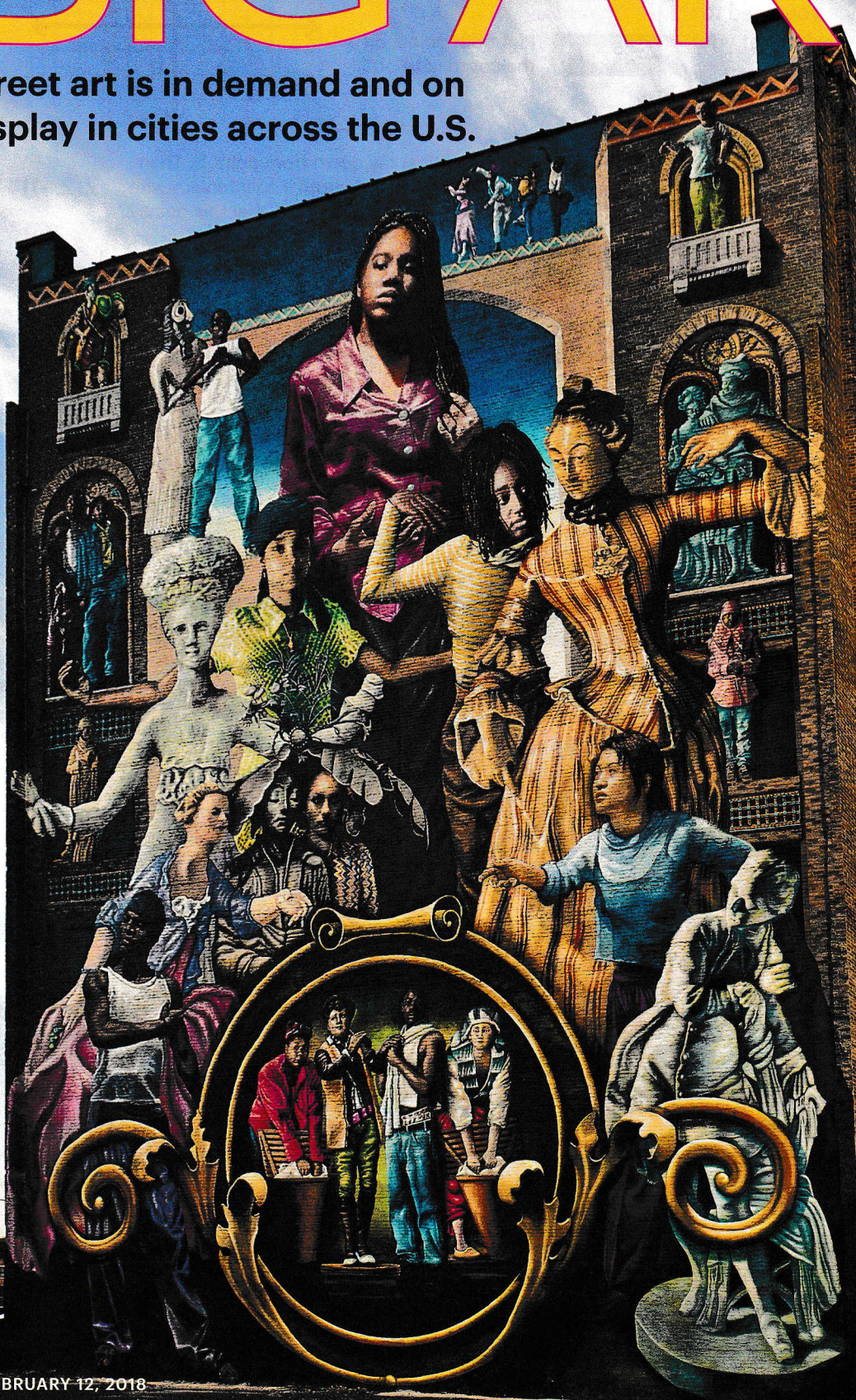
**4** When you reach  $(1, 4)$ , one of your opponents at  $(14, -1)$





# BIG ART

Street art is in demand and on display in cities across the U.S.



Learn more  
about  
Philadelphia's  
murals, like  
*Common  
Threads*  
(pictured here).



**B**ack in 1984, Philadelphia, Pennsylvania, had a graffiti problem. People were illegally spray-painting the city's walls. Local artist Jane Golden came up with an unusual solution: Team up graffiti-makers with professional artists to paint murals on buildings with the owners' permission. This eventually led to Mural Arts Philadelphia, a program that works in collaboration with communities to transform their public spaces into canvases for works of art. Since 1984, Mural Arts has created more than 4,000 murals throughout the city.

And it's not just Philadelphia. Murals have been popping up in cities such as New York, Chicago, Miami, Seattle, and Los Angeles. Building owners eagerly invite famous street artists, like Shepard Fairey and Os Gemeos, to turn their bare walls into beautiful works of art.

Most mural artists start with small sketches. But how do they translate that onto a large wall? New York street artist BK Foxx explains: "Painting a big wall is really the same as painting a small canvas, because proportions are still relative to each other. On a canvas, the increments of measure are inches; on a wall, it's feet."

BK, who has been spray-painting murals since 2013, often starts with a photograph of the actual wall to determine the dimensions for her template. She then takes a picture of the subject she wants to paint and uses Photoshop to superimpose it on the wall photo. Then she prints the image on an 8.5-by-11-inch paper for reference. Before painting, BK marks the center of the wall with a little cross. She then makes more marks to divide the wall into quarters, eighths, sixteenths, and so on. She marks up her printed image in the same way to keep perspective.

This method proved useful when she painted her biggest mural to date, which was 100 feet tall. "When I discovered I could make these really cool images that were so much bigger than myself, I just wanted to keep doing it," says BK. "Even now, I want to paint bigger and bigger each time."

—Maria L. Chang

## FINDING PROPORTIONS

online

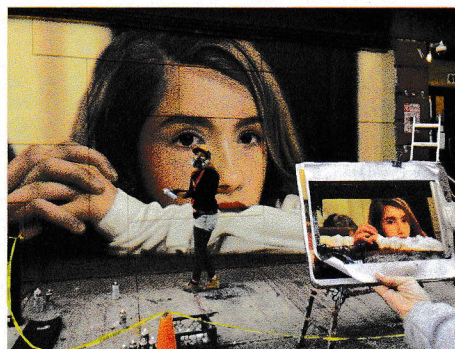


1  
MATH  
VIDEO

2  
SKILLS  
SHEETS

A proportion is an equation that states that two ratios are equivalent. Street artists like BK Foxx use proportions to scale their small sketches to large murals.

**EXAMPLE:** BK Foxx's mural pictured below is on a wall that's about 10 feet tall by 24 feet wide. To make her picture fit on 8.5-by-11-inch paper, BK Foxx made her drawing 10 inches wide. How tall should her drawing be to match the wall's proportion?



**Step 1**

Set up a proportion, using the variable  $w$  to represent the unknown measurement.

$$\frac{24 \text{ ft}}{10 \text{ ft}} = \frac{10 \text{ in.}}{w}$$

**Step 2**

Cross multiply to write the relationship as an expression and simplify.

$$\begin{aligned} 24 \times w &= 10 \times 10 \\ 24w &= 100 \end{aligned}$$

**Step 3**

Divide both sides by 24 to isolate the variable.

$$\begin{aligned} 24w \div 24 &= 100 \div 24 \\ w &= 4.1666... \end{aligned}$$

rounded to 4.17

→ So to match the wall's proportions, BK Foxx had to make her drawing 4.17 inches tall.



**Write and solve proportions to answer the following questions about murals in cities across the U.S. Round all answers to the nearest hundredth when necessary.**

1

At 100 feet tall by 75 feet wide, *Common Threads* (left) by Meg Saligman was the largest mural in Philadelphia when it debuted in 1998. If Saligman's sketch was 10.5 inches tall, what was its width?

2

If Saligman wanted to put a picture of *Common Threads* on a postcard that's 4 inches wide with the mural completely filling the width, how tall would the image on the postcard be?

Do more mural math on the next page. →





## NEW YORK, NY

Last October, this tribute to 1980s hip-hop was completed by street-art duo Os Gemeos. They are twin brothers from Brazil, and their name means “The Twins” in Portuguese. This piece is actually a pair of murals on opposite-facing walls. It’s easy to spot a work by Os Gemeos because most of their murals feature stylized characters and playful imagery.

**3** Each wall measures about 65 feet tall and 80 feet wide. If Os Gemeos did a sketch on paper that was 8 inches tall for one wall, how wide would their sketch have to be to stay in proportion?

**4** If Os Gemeos wanted to fit sketches of both walls side-by-side on a single piece of paper that was 14 inches wide, how tall would the paper need to be?





## COSTA MESA, CA

Shepard Fairey might be best known for designing the “Hope” poster for President Barack Obama’s 2008 campaign. But he’s also painted murals around the world.

This is Fairey’s most recent mural, which he completed last September. It blends his graphic

style with images that have connections to the community.

“Art in public spaces is exciting because it keeps people from having to go to a gallery or a museum,” Fairey told the *Los Angeles Times*. “Maybe it reels some people in to being excited about art.”

- 5** At 55 feet tall by 136 feet wide, Fairey’s mural can be seen from the nearby freeway. If his sketch was 17 inches wide, would it fit on an 11-by-17-inch piece of paper?

- 6** The woman in the middle of the mural takes up about  $\frac{1}{5}$  of the mural’s width. If Fairey wanted to put just that image on a 6-inch-high postcard, how wide would the image be?



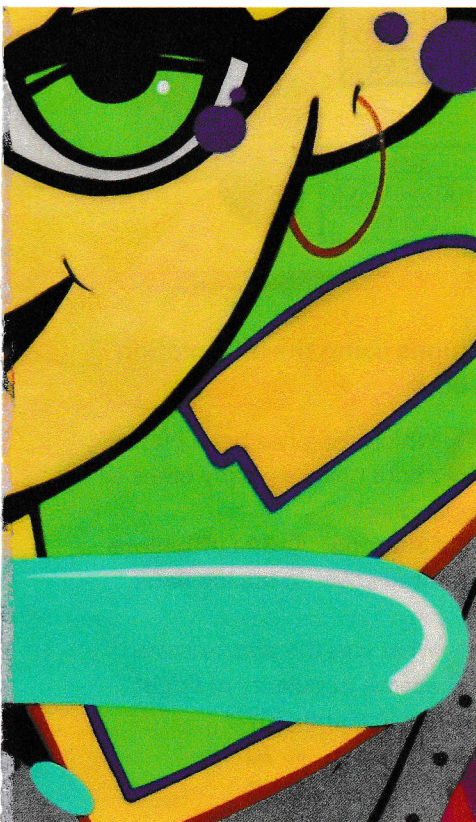
## MIAMI, FL

Ten years ago, the Wynwood neighborhood of Miami was an industrial warehouse district. Today, the six buildings that make up Wynwood Walls are a destination for street artists and tourists. More than 50 artists from around the world have covered the 80,000 square feet of walls with their art.

Developer Tony Goldman, who created Wynwood Walls, was a big fan of street art. He knew that these warehouse walls—that all had no windows—would be the perfect canvases for an outdoor gallery of street art. Now, Wynwood Walls invites new artists to create new murals every year.

- 7** This mural is by street artist Crash Matos. He got his start in New York City at age 13. The wall is 12 feet tall by 24 feet wide. If Crash made a sketch that was 9.5 inches wide, what would its height be?

- 8** If Crash made another sketch on larger, 11-by-17-inch, paper, what’s the maximum width and height that his sketch could be on this piece of paper?





# Fad Frenzy



Learn about  
the history  
of fads!

**B**ack in 1967, every kid wanted a Troll doll. In 1997, Tamagotchi digital pets were the talk of the town. And in 2017, there was a frenzy for fidget spinners.

If you didn't have one spinning between your index finger and thumb, your classmates probably did. But their popularity faded as quickly as it rose. Cheap and easy to produce, fidget spinners were a classic toy fad.

A fad is an exaggerated interest in something that's short-lived. The word itself dates back to the 1800s, but fads have been around for much longer. And toys aren't the only things that have become fads. In 1637, a tulip craze swept the Netherlands—everyone had to have the flowers. Some even paid more than the cost of a house for a single flower bulb!

"Our desire for novelty fuels our appetite for fads," says Margo Bergman, a fad researcher at the University of Washington. Toy fads usually last about 6 months to a year. They are often successful because they appeal to kids, who crave new experiences more than adults do. Kids also have less-developed decision-making capabilities, Bergman explains, making them more susceptible to impulse buys.

But the same biological mechanism behind toy fads applies to pretty much everything in popular culture. Boy bands in the 1990s, superhero movies in the 2010s, tulips in the 1600s—they are all driven by our desire for things that are new!

—Jeanette Ferrara

## NOT-SO-TIMELESS TOYS

Toy fads have come and gone. Here's a selection with their release year and original price.



Source: Museum of Play

YOUR  
TURN

Answer the following questions using the information in the charts and graphs above.

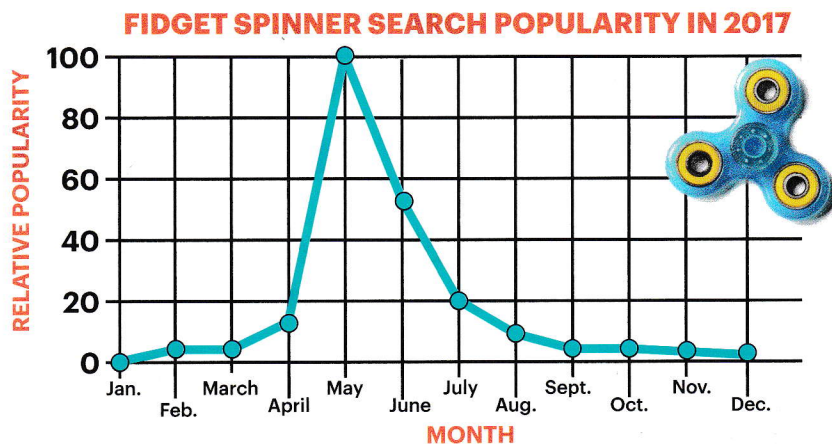
- Which one-hit wonder on the graph has been played the most times on Spotify?  
 (A) My Sharona (C) Ice Ice Baby  
 (B) Take On Me (D) Macarena
- In what month did fidget spinners reach peak search popularity?  
 (A) March (C) May  
 (B) April (D) June
- Which song has been played about twice as many times as "Sugar, Sugar"?  
 (A) My Sharona (C) 99 Luftballons  
 (B) Tainted Love (D) Ice Ice Baby
- What was the approximate search popularity of fidget spinners in March 2017?  
 (A) 4 (C) 20  
 (B) 15 (D) 53



## FIDGET SPINNERS SEARCH POPULARITY

Google measures trends in its online searches on a scale from 0 to 100. A term that is searched for very frequently will have a higher relative popularity. Here's how the search term "fidget spinner" performed in 2017.

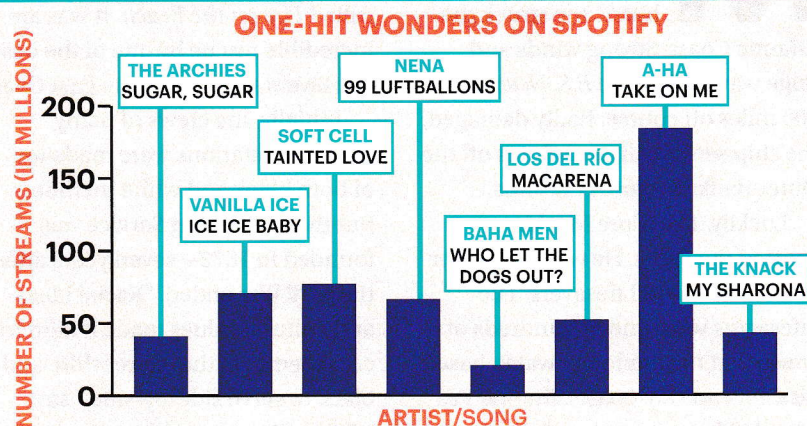
Source: Google Trends



## MUSIC FADS: THE ONE-HIT WONDERS

These artists each have a single song that's been played millions of times on Spotify. But each song accounts for more than 90% of the times the artist has been streamed.

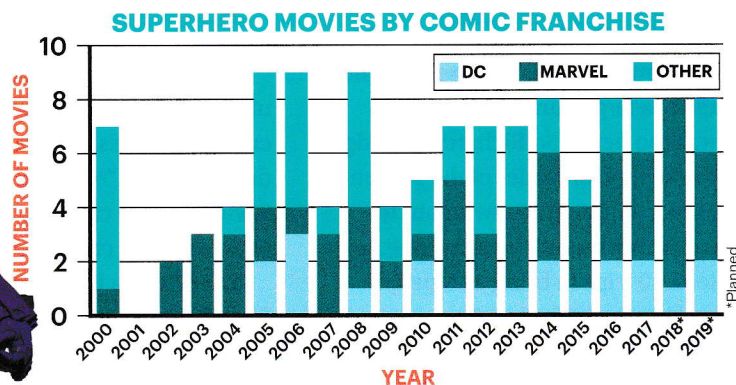
Source: Spotify



## NOT ANOTHER HERO!

Over 100 live-action superhero movies have been released since 2000!

Source: Box Office Mojo



**5** There were 9 original Beanie Babies. How much would it have cost to buy one of each of them in 1995?

- Ⓐ \$17.91      Ⓒ \$44.55  
Ⓑ \$31.50      Ⓓ \$44.91

**6** What was the first year on the chart to have an equal number of Marvel and DC superhero movies (except 2001, which had none)?

- Ⓐ 2005      Ⓒ 2015  
Ⓑ 2009      Ⓓ 2016

**7** Write a ratio comparing the number of superhero movies released by DC and Marvel comic franchises in 2016.

**8** What's the median original sales price for the fad toys in the chart?

**9** How many Pet Rocks could you buy for the same price as a Furby?

**10** What fraction of superhero movies planned to be released in 2018 and 2019 will be Marvel movies?



# Surf Savers

**For 68 years, an all-black crew saved dozens of lives along the Atlantic Coast**

**M**ore than 100 years ago, on October 11, 1896, a terrifying hurricane struck the Atlantic Coast. Strong winds and huge waves blew the *E.S. Newman* 100 miles off course. Badly damaged, the ship sent up distress flares off the Outer Banks in North Carolina.

Luckily, Theodore Meekins spotted the flares. He was a member of the Pea Island Lifesavers. The Lifesavers were one of hundreds of crews that responded to water-based disasters on U.S. coasts. But the Pea Island Lifesavers were unique: They were the only all-black crew.

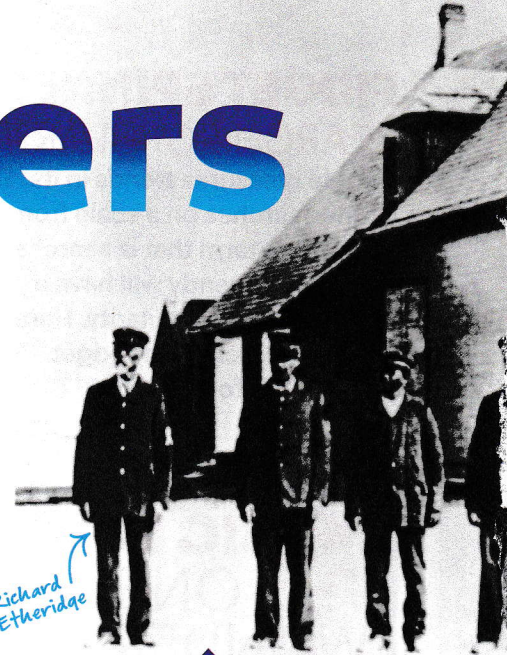
Normally, the Lifesavers would send out a boat or fire a rescue line using a large gun. But this storm was too fierce. So Richard Etheridge, the keeper, or leader of the station, asked volunteers to swim out to the *Newman* with a rescue line. It took 10 trips to bring all 9 people on board—including the captain's wife and 3-year-old son—to safety. "You had these black men reaching

up out of the surf and saving white people," says David Wright, who co-authored a book about the Lifesavers called *Fire on the Beach*. It was an incredible rescue by one of the best Lifesavers stations on the East Coast.

Initially, the crews of many Lifesavers stations were made up of both black and white members. But the Life-Saving Service was founded in 1872—seven years after the Civil War ended. "Racial ideas and cultural values made it hard for crewmembers that were white and black to serve side-by-side," says William Thiesen, a historian for the Coast Guard, which the Lifesavers became part of in 1915.

White crewmen wouldn't serve under a black keeper, and black crewmen were slowly being chased out of service. "As a result, the Life-Saving Service came up with the idea of an all-black crew," says Thiesen.

In 1879, Pea Island became the first all-black crew and remained all-black until it was decommissioned in 1947. However, decades passed

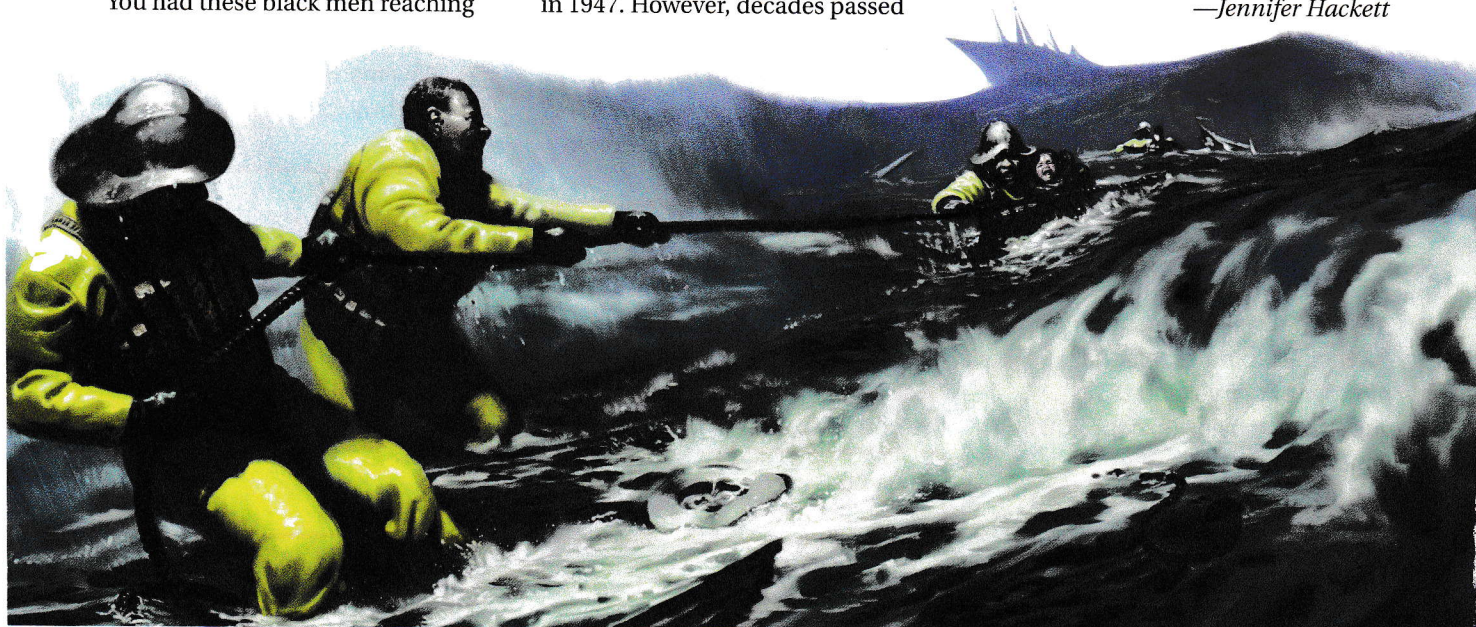


The Pea Island Lifesavers pose for a photo outside their station after the *E.S. Newman* rescue in 1896.

before its service was recognized. In 1996, the Pea Island Lifesavers were awarded the Gold Lifesaving Medal for the rescue of the *Newman* crew. Today, the Pea Island Cookhouse Museum in Manteo, North Carolina, keeps the Lifesavers' story alive right on the shores where they served.

As Wright worked on his book, what impressed him the most about the Pea Island Lifesavers was that they chose to serve at all. "Many had been born slaves and fought in the Civil War," he says. "The notion of service and pride in their identity as Americans is remarkable."

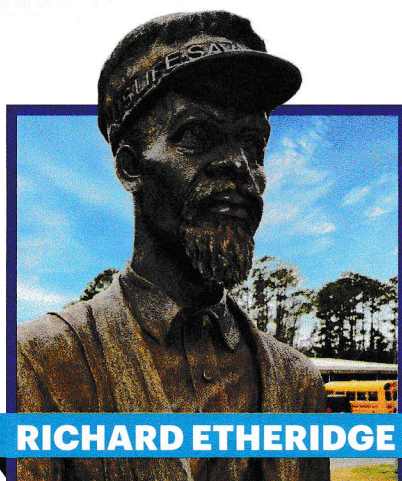
—Jennifer Hackett







Learn more about the U.S. Life-Saving Service in North Carolina.



**RICHARD ETHERIDGE**

**B**orn a slave in 1842, Richard Etheridge was a sergeant in the Civil War. In 1875, he joined the Life-Saving Service, and five years later was promoted to keeper at Pea Island.

The white crew at the station refused to serve under him, so the station became the first and only all-black Life-Saving Station. Etheridge served as a keeper until his death in 1900. Today there's a statue of Etheridge outside the Pea Island Cookhouse Museum in Manteo, North Carolina.

JAKE MURRAY (ILLUSTRATION), JUS COAST GUARD (PEA ISLAND LIFESAVERS), WARSHIPS/ALAMY STOCK PHOTO (RICHARD ETHERIDGE STATUE), SUMROENG CHINNAVAN/SHUTTERSTOCK.COM (SKY)

## MAKING A DOT PLOT

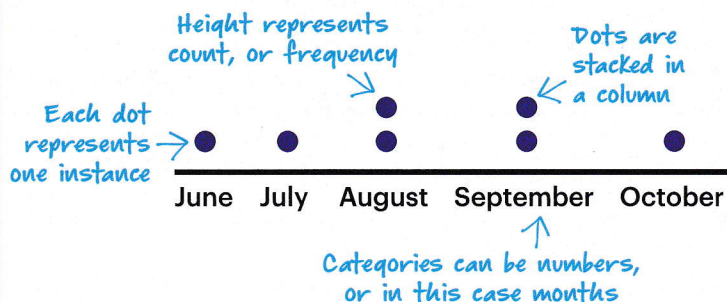
online



**2**  
SKILLS  
SHEETS

Dot plots show the distribution of a set of data. They're particularly useful for identifying clusters and outliers. Dot plots group data based on how many data points share a value.

**EXAMPLE:** What was the frequency of tropical storms and hurricanes in 1896?



**YOUR TURN**

Use the information in the chart below to make a dot plot of when rescues occurred in Pea Island's district from June 1896 to May 1897.

**1** What value or category should be used for a dot plot representing the data?

**4** How can you tell which month had the most rescues?

**2** How many total dots will the dot plot have?

**3** On a separate sheet of paper, make a dot plot of rescues by month, using the data in the table below.

**5** Until 1900, East Coast lifesaving stations had a full crew only during the "active season," from April to November. Based on your dot plot, why do you think they switched to full crews year-round?

**RESCUES BY THE PEA ISLAND LIFESAVERS, 1896-97**

MONTH	NUMBER OF RESCUES	MONTH	NUMBER OF RESCUES
June	0	December	11
July	1	January	7
August	1	February	3
September	5	March	3
October	4	April	2
November	2	May	2



# Figure Skating

Team USA has big skates to fill during the Winter Olympics this month in Pyeongchang, South Korea. Since 1948, at least one American has medaled in figure skating in each Olympics. Team USA is sending 14 athletes to compete in one or more of these figure skating categories: Men's, Women's, Pairs, Ice Dance, and Team.

Figure skating actually made its Olympic debut at the Summer Olympics in 1908—before the Winter Olympics even existed! The sport combines physics, artistry, and athleticism. Figure skaters need to be able to complete difficult jumps and spins all while synchronizing their performances to music.



JOHN HUET (ICE SKATING JUMP); CHUNG SUNG-JUN/GETTY IMAGES (GOLD MEDAL); ADRIAN DENNIS/AP/GETTY IMAGES (GRACIE GOLD); MADDIE MEYER/GETTY IMAGES (PATRICK CHAN); ISTOCK/GETTY IMAGES (ICE SKATES); POCOOG - HANDOUT/EPA-EFE/REX/SHUTTERSTOCK (OLYMPIC MASCOT); ULLSTEIN BILD/THE GRANGER COLLECTION (BEATRIX SUZETTA)



Read on to learn more facts about Olympic figure skating. Then plug in the numbers to solve the equation below and reveal a final fact.

**586**

Weight, in grams, of a gold medal at this year's Olympics—the heaviest in history!

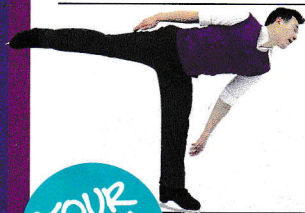


**170**

Number of seconds in a figure skating short program



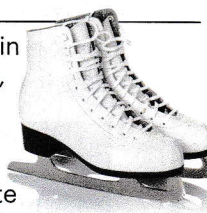
Meet Pyeongchang's Olympic mascot, the white tiger Soahorang!



**90**

Degrees of the angle a figure skater's legs must make during a camel spin

**4** Thickness, in millimeters, of the metal blade of a typical figure skating ice skate

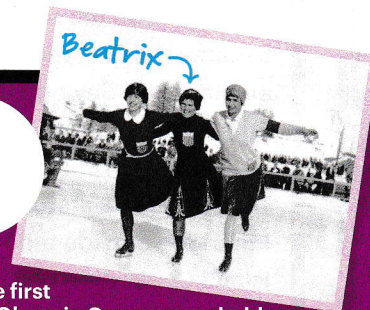
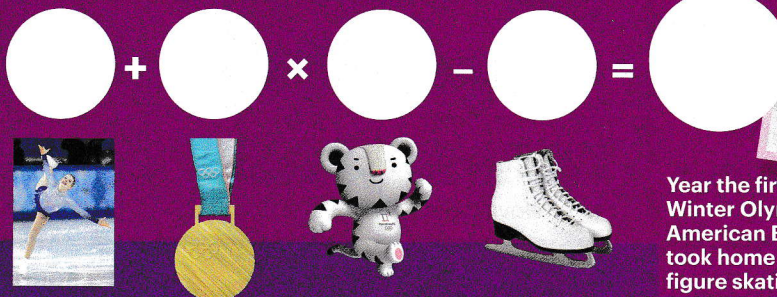


**3**

Number of skaters from Team USA who will compete in the women's figure skating event this year



Plug in the number that corresponds to each icon. Then use the order of operations to solve.



Year the first Winter Olympic Games were held. American Beatrix Suzetta Loughran took home the first silver medal in figure skating at a Winter Olympics!