



Talk Like a Pirate Day

*Fun problems for September 19th...
or any day you feel like a pirate!*

September 19 is International Talk Like a Pirate Day (ITLAPD). To celebrate, let yer pirate crew emb-arrrrrr-k on an exciting mathematical treasure hunt! Don't worry if you miss the actual holiday on September 19. Yer crew can enjoy this activity any time of year. Arrrrrrr!

WHY CLUB LEADERS & KIDS LOVE IT

- For this reboot, we created another set of pirate-themed questions, so your club can go treasure hunting, even if you have already played.
- Students get the chance to move around and explore their school, making this feel more like a treasure hunt!
- Club leaders have to do some legwork to set up the activity, but its fun to plan out the “treasure map.”
- Club leaders and students enjoy dressing up and talking like pirates.

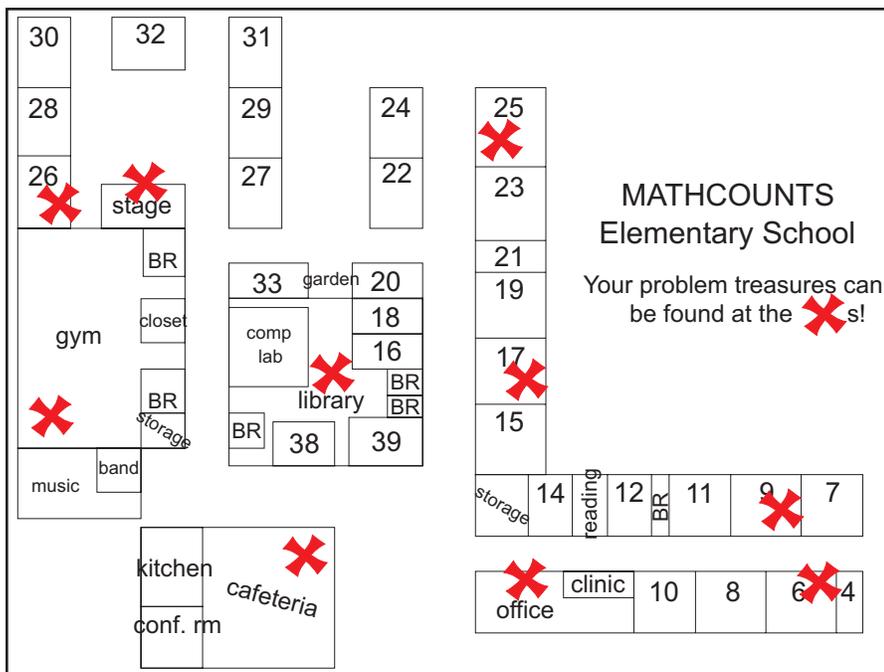
MATERIALS NEEDED

- Copy of instructions for students to see
- 2 copies of maps of your school/organization marked with 10 Xs (see sample below)
- 2 ITLAPD Problem Sets (problems to be positioned around school—one at each X location on the map)
- Prizes for the winning team

BEFORE YOUR MEETING

There are a couple things you, the Club Leader, will need to prepare before the students do this activity:

- Cut up the Problem Set you will be using into 10 strips, with one question per strip.
Note: Two problem sets are included, in case you already did this activity with your club last year and want a new batch of pirate-themed questions that your students have not seen.



- You will need to pick 10 locations in your school/organization where you will post questions for students to answer. Make sure these are locations where it is safe and permissible for students to go. Go to each location and tape the pirate-themed question somewhere visible.

- As you go from location to location, be sure to mark a master copy of your school's map with an X, so that you do not forget where the questions are located. At left is an example of what a map could look like.

- Prepare copies of the map of your school/organization with Xs on each location where the students can go find a question to answer. You will need two copies of this map for each group to use during the activity.

5. Make sure you have the prize booty ready to give out! This can be MATHCOUNTS pencils from your Club Kit or another prize.
6. Obviously arriving in costume will make this meeting much more authentic, so you either can surprise your students with your costume or let them in on the theme and ask them to show up in pirate gear! If you would like to dress up like a pirate, you will need to get your costume ready. If you also would like your students to dress up, it would be a good idea to let them know at the previous meeting.

If you would like to learn more about ITLAPD, pirate vocabulary or other pirate matters, this is a good site to visit: www.talklikeapirate.com/piratehome.html. (Before encouraging your students to visit this site, please check it yourself to be sure you feel it is appropriate for your students.)

DURING YOUR MEETING

Happy International Talk Like a Pirate Day! Here's how this activity works:

1. Before starting, everyone should have a pirate name. Each full pirate name should have a prefix and a descriptor before the first name (preferably a nickname for the student's first name). Students can choose from the options below:

<i>Prefixes:</i>	<i>Descriptors:</i>	<i>A Few Example Names:</i>
Jolly	"One-eyed"	Amanda → Calico "One-tooth" Mandy
Pretty	"Coconut Crazy"	Ryan → Iron "Fierce and Foul" Rye
Savvy	"Ghost White"	Beatrice → Pretty "Blue Fox" Betty
Calico	"Fierce and Foul"	Xenia → Savvy "Loud Brute" Xen
Dirty	"Parrot Beak"	Charles → Shivers "Pieces of Eight" Chuck
Rough	"Pieces of Eight"	William → Cranky "Dublin Barnacle" Billy
Shivers	"Blue Fox"	David → Mad "Boot-strap" Davey
Mad	"Loud Brute"	Ashley → Captain "One-eyed" Ash
Captain	"Dublin Barnacle"	Barbara → Rusty "Parrot Beak" Barb
Iron	"One-tooth"	Margaret → Jolly "Coconut Crazy" Marge
Rusty	"Silent Limey"	Peter → Dirty "Ghost White" Pete
Cranky	"Boot-strap"	Mitchell → Rough "Silent Limey" Mitch

2. Let the students read the instructions (in the blue box below) to explain the activity.

Ahoy, Me Hearties!

It's International Talk Like a Pirate Day. Arrr!

We're going on a treasure hunt. Divide into two teams, and I will give each team a map of the school with 10 Xs. Each team will find each X and solve the problem that is at that location. The first team to return with the most correct answers wins the booty. Arrr! Happy ITLAPD!

-Dirty Bess Flint

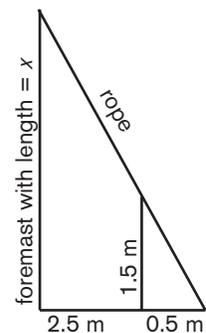
- Have students divide into two groups of fairly equal numbers of students. You can decide how to do this, based on your club. It may be that your students can get into groups themselves, or you may need to assign them to groups (for example, Group 1 is students with first names that start with A–L and Group 2 is students with first names that start with M–Z).
- Give one copy of the treasure map to each group and let them start.
- Armed with school maps similar to the one shown in this activity, students can go out on their own treasure hunt. The 10 problems written by Dirty Bess Flint are included in this document, along with 10 new problems. You can modify any of the problems to make them appropriate for your students' abilities.

Solutions for ITLAPD Problem Set 1:

- 1 man in 20 seconds is the same as 3 men in 1 minute. So over 15 minutes, that's $3 \times 15 = \mathbf{45 \text{ men}}$
- $(5 + 7) / (5 + 4 + 7) = 12/16 = \mathbf{3/4}$
- Because 27 pirates have earrings, $37 - 27 = 10$ do not have earrings. If each of these 10 no-earring pirates has a peg leg, that leaves $25 - 10 = \mathbf{15 \text{ pirates with peg legs who also have earrings}}$
- $41 \text{ minutes} \times (x \text{ degrees} / 60 \text{ minutes}) \rightarrow x = 41 \div 60 \approx 0.68 \rightarrow \mathbf{24.68 \text{ degrees N}}$
 $4 \text{ minutes} \times (x \text{ degrees} / 60 \text{ minutes}) \rightarrow x = 4 \div 60 \approx 0.07 \rightarrow \mathbf{78.07 \text{ degrees W}}$
- $100 \times 48 = 4800 \text{ ft}^2 \rightarrow 4800 \div 125 \approx \mathbf{38 \text{ minutes}}$
- $1000(\$0.75) + 500(\$1.20) + 600(\$3.00) = \$750 + \$600 + \$1800 = \mathbf{\$3150}$
- $1350 \div 20 = 67.5 \text{ hours} \rightarrow 67.5 \div 24 \approx \mathbf{3 \text{ days}}$
- distance = $(0.5)(\text{circumference}) = (0.5)(\pi)(\text{diameter}) = (0.5)(\pi)(80) \approx \mathbf{126 \text{ feet}}$
- $$\begin{array}{r} 6x - 5y = 8 \quad \rightarrow (\times 9) \rightarrow 54x - 45y = 72 \\ 2x + 9y = 24 \quad \rightarrow (\times 5) \rightarrow 10x + 45y = 120 \\ \hline 64x = 192 \rightarrow x = 192 \div 64 = \mathbf{3} \end{array}$$
- "6 choose 4" = ${}_6C_4 = (6!)/[(4!)((6 - 4)!)] = (6!)/[(4!)(2!)] = \mathbf{15 \text{ combinations}}$

Solutions for ITLAPD Problem Set 2:

- $A = 1/2(b)(h) \rightarrow 1/2(4)(8) \rightarrow (2)(8) \rightarrow 16\text{ft}^2 = \text{area of triangle including skull, so } 16 - (16 \times 1/4) \rightarrow 16 - 4 \rightarrow \mathbf{12 \text{ ft}^2} = \text{area of dark gray part}$
- Left Lagoon Steve has 14 gold coins. Captain Puncture Pete has $14 \times 6 = 84$ gold coins. Rusty Ryder Flint has $84 \times 1/4 = 21$ gold coins. Altogether they have $14 + 84 + 21 = \mathbf{119 \text{ gold coins}}$
- $7 / (4 + 3 + 7) = 7/14 = \mathbf{1/2}$
- Iron Robby Cash stole $900(\$0.75) + 700(\$1.20) + 1000(\$3.00) = \$675 + \$840 + \$3000 = \$4515$.
 $\$4515 < \4663 , so **Iron John Rackham** stole more
- $(\$12,664 - \$1000) \div 36 \rightarrow \$11,664 \div 36 = \mathbf{\$324 \text{ per crew member}}$
- $161 \div 23 = 7$, so we know $23/161 = \mathbf{1/7}$
- $3 \text{ pirates}/2 \text{ parrots} = x \text{ pirates}/28 \text{ parrots} \rightarrow (3 \times 28) \div 2 \rightarrow 84 \div 2 \rightarrow 42 \text{ pirates.}$
 $28 \text{ parrots} + 42 \text{ pirates} = \mathbf{70 \text{ combined parrots and pirates}}$
- 2 similar triangles formed (shown at right). Corresponding parts of similar triangles are proportional, so $1.5 \text{ m height} / 0.5 \text{ m base} = x \text{ height} / 3 \text{ m} \rightarrow (3 \times 1.5) \div 0.5 \rightarrow 4.5 \div 0.5 \rightarrow \mathbf{9 \text{ m tall foremast}}$
- $18 \div 30 = \mathbf{0.6 \text{ yard per piece of rope}}$
- $50 \text{ nautical miles} / 60 \text{ minutes} = 30 \text{ nautical miles} / x \text{ minutes} \rightarrow (60 \times 30) \div 50 \rightarrow 1800 \div 50 \rightarrow \mathbf{36 \text{ minutes}}$



A special thank you to **Betty Jean Jordan, P.E.** (a.k.a. Dirty Bess Flint) for sharing this meeting idea and these creative problems with us! Ms. Jordan made these contributions in her role as MATHCOUNTS coach at Piedmont Academy in Monticello, Georgia, and as the Middle Georgia Chapter Coordinator.

International Talk Like a Pirate Day

Problem Set #1

1. Ol' Chumbucket can blow a man down in 20 seconds. Arrr! How many men can he blow down in 15 minutes?

.....



2. Polly wants a cracker. Awk! A bowl of crackers sitting next to her perch contains 5 Ritz[®] crackers, 4 saltines and 7 Wheat Thins[®]. If she sticks her beak into the bowl and randomly pulls out a cracker, what is the probability that she does NOT get a saltine? Express yer answer as a common fraction.

.....

3. The pirates of The Black Pearl are a motley crew. Arrr! Twenty-seven of them have earrings, and 25 of them have peg legs. If the crew consists of 37 pirates, what is the smallest possible number of pirates in the crew with an earring and a peg leg?

.....

4. Dirty Bess Flint buried her treasure at 24 degrees, 41 minutes N and 78 degrees, 04 minutes W. (That's degrees and minutes of latitude and longitude, ye scurvy dogs!) If there are 60 minutes in one degree, convert the treasure's latitude and longitude into decimal degrees (i.e., showing no minutes). Express yer answers as a decimal to the nearest hundredth. Arrr!

.....



5. Blackbeard has to swab the poop deck after a sword fight. Arrr! The poop deck is 48 feet wide and 100 feet long. If Blackbeard can swab 125 square feet per minute, how many minutes will it take him to swab the entire poop deck? Express yer answer to the nearest whole number.

.....



6. On his last raid, Captain Jack Sparrow stole 1000 pieces of eight, 500 doubloons and 600 gold coins. (1 piece of eight = \$0.75; 1 doubloon = \$1.20 and 1 gold coin = \$5) If each type of coin is worth the dollar value given, what is the total value, in dollars, of Captain Jack Sparrow's booty? Arrr!

.....

7. The Horrid Shark pirate ship is sailing from the Cayman Islands to St. John's. Arrr! If she can sail 20 miles per hour, and St. John's is 1350 miles from the Cayman Islands, in how many days will The Horrid Shark arrive at St. John's? Express yer answer to the nearest whole number.

.....

8. Cap'n Slappy has to punish one of his bilge rat crew members. Arrr! He plans to keelhaul him, which is dragging him along the underside of the boat lengthwise. However, Cap'n Slappy relents and decides to drag him only widthwise. If the width of the ship's hull is approximately a semicircle with radius 40 feet, what is the distance, in feet, that Cap'n Slappy drags the bilge rat? Express yer answer to the nearest whole number.

.....

9. X marks the spot! What is the value of X in the system of equations $6x - 5y = 8$ and $2x + 9y = 24$?

.....

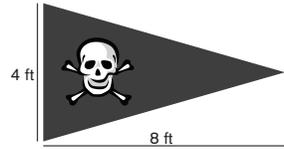


10. Mad Dirk is hanging nautical flags on the mizzenmast. Arrr! He doesn't care about what signals he is sending to other ships (he is mad, after all), and so he randomly selects four of the six flags in the ship's storage compartment. How many different combinations of four flags could Mad Dirk select for the mizzenmast?

International Talk Like a Pirate Day

Problem Set #2

1. The flag atop the Nautilus is a triangle, shown at the right. What is the area of the dark gray part of the flag if the skull and crossbones logo takes up $\frac{1}{4}$ of the area of the flag? Arrrr!



2. Rusty Ryder Flint has $\frac{1}{4}$ as many gold coins as Captain Puncture Pete. Captain Puncture Pete has 6 times as many gold coins as Left Lagoon Steve. If Left Lagoon Steve has 14 gold coins, how many gold coins do the three pirates have altogether?

3. Arrrr! Dirty Anne Bonney has a bag holding 4 red eyepatches, 3 blue eyepatches and 7 black eyepatches. If she reaches in and pulls out a patch at random, what is the probability that she will pull out a black eyepatch? Express yer answer as a common fraction...or walk the plank!

4. Iron Robby Cash stole 900 pieces of eight, 700 doubloons and 1000 gold coins. (1 piece of eight = \$0.75; 1 doubloon = \$1.20; 1 gold coin = \$3) Iron John Rackham stole \$4663. If each type of coin Iron Robby Cash stole is worth the dollar value given, who stole more in dollar value? Arrr!



5. Captain Jack Sparrow and his crew got \$12,664 from a raid. The captain gets to take \$1000, and then the crew splits up the rest of the booty evenly. Arrrr! If there are 36 members in the crew, how much money does each crew member get?



6. Captain Harry Sharkface is going to punish one of his 161 crew members. Arrrr! 23 of the pirates in his crew have a peg leg. If he chooses the pirate to punish at random, what is the probability that the pirate he punishes has a peg leg? Write yer answer as a common fraction, ye scurvy dogs!

7. The ratio of pirates to parrots on Cap' One-Eyed Murray's ship is 3:2. There are 28 parrots on the ship. What is the total number of pirates and parrots combined on Cap' One-Eyed Murray's ship? Arrrr!

8. The Black Pearl's foremast is supported by a rope extending from the top of the foremast to a point on the deck 3 m from the base of its foremast. When Mad Max Bootstrap walks 2.5 m from the base of the foremast toward the point where the rope is attached to the deck, his head just touches the rope. Mad Max Bootstrap is 1.5 m tall. How many meters tall is the foremast?



9. Calico Mary Kidd is cutting 30 pieces of rope to tie up captives who have to walk the plank. She has 18 yards of rope, and each piece of rope must be the same length. Arrrr! If she uses all of her rope and has none left over, what is the maximum length, in yards, of each piece she cuts?



10. The Flying Dutchman can go 50 knots. (That's nautical miles per hour, ye scurvy pirates!) If she's in pursuit of another ship that is not moving and is 30 nautical miles away, how many minutes will it take the Flying Dutchman to get to the other ship?