Ahoy, mateys! The pirates are up to their crazy antics, and this time they have created a plethora of problems for your students to solve. Before students tackle the problems, you might want to discuss some nautical terminology. A nautical mile is based on the circumference of the earth and is equal to 1 minute of latitude. It is slightly more than a statute (land-measured) mile (1 nautical mile = 1.1508 statute miles). Nautical miles are used for charting and navigating. A knot is 1 nautical mile per hour (1 knot = 1.15 statute miles per hour). To continue the pirate fun, check out the following websites for more ideas: http://www.teachingideas.co.uk/themes/irates/index.htm and http://www.abcya.com/latitude_and_longitude_practice.htm

**WEEK 1**

Setting sail to find treasure hidden somewhere in the Mediterranean Sea, some pirates depart from Nassau, Bahamas, then follow clues to Cartagena, Spain, and Nice, France. Finally, they land on the coastline of Sardinia, Italy, where they find their treasure! The voyage totals 3900 nautical miles. If they sailed at an average rate of 10 knots and anchored for 2 hours each day, how many days would it take to find their treasure? If the wind had increased their speed by 2 knots every day they were sailing (day 1 = 10 knots, day 2 = 12 knots, day 3 = 14 knots, etc.) and they anchored for 2 hours every day, how many days would it have taken to reach their treasure? Make a prediction and then work with a partner to solve the problem. How did your prediction compare to the solution? How was your strategy for solving different from those of your peers?

**WEEK 2**

The pirate crew has a pet parrot named Taz who eats 10 cubic centimeters of bird food each day. How many boxes of bird food must the crew pack for a 50-day journey if each box holds 1 cubic meter of bird food? If crew members adopt another parrot to travel with them and that parrot eats the same amount as Taz, how many boxes of bird food will they need for a 70-day journey?

**WEEK 3**

The ratio of female pirates to male pirates in the crew is 2:3. Using this information, answer the following questions: If 24 male pirates are on board, how many female pirates are on board? If a total of 50 pirates are on board, how many are male? If 10 more female pirates joined the crew of 50 when they docked at port, how do the additional female pirates change the ratio of female to male pirates in the crew?

**WEEK 4**

Not all pirate crew members wear eye patches: \(\frac{1}{4}\) of the pirates wear black eye patches, \(\frac{1}{5}\) wear white eye patches, and \(\frac{16}{45}\) wear green eye patches. What fraction of the crew did not wear an eye patch? What fraction of the crew wore black or white eye patches? Explain how you found your answer and compare your strategy with a partner’s strategy.
WEEK 1

The pirates began planning all the ways they could spend their coins when they got to port. Some wanted to buy food and clothes. Others wanted items for the ship, like ropes, mops, and towels. A few wanted to buy books and games to keep them busy while they travel. The captain arrived at port with the number of coins from last week's problem. List all the ways he could spend his money to buy the following items (he can buy more than 1 of each): a basket of food for 15 coins, a set of books for 8 coins, a captain's hat for 12 coins, a spyglass for 9 coins, clothes for 7 coins, a rope for 5 coins. How would you spend the coins if you were the captain? Why?

WEEK 2

Before the pirates could set sail, they needed more rope. They decided to tie together scarves to use as ropes. They arranged yellow scarves (Y), green scarves (G), and blue scarves (B) in the following pattern: Y, G, G, B, Y, G, G, B, Y, G, G, B. If the pattern is extended, what color of scarf will be in the 20th position? In the 45th position? Work with a partner to solve this problem and represent your solution strategy using a picture, a diagram, or a table. How can you tell which color of scarf will be in the 45th position without drawing the whole pattern?

WEEK 3

The mainsail on a pirate ship is in the shape of an equilateral triangle. If one side of this sail is 18 feet long, what is the perimeter of the mainsail? How does your strategy compare to the strategies your friends used to solve the problem?

WEEK 4

Two pirate ships are in a race to find hidden treasure. Look at the treasure map supplied by your teacher. The ships are both sailing toward the X on the map, but they can go only left, right, up, or down. They cannot travel diagonally, and they must avoid the rocks or else they will crash. On the map, draw the fastest route to the treasure for each boat (going through the middle of each square). Using your route, if each boat could travel 2 squares every hour, how many hours would it take the ship with the white sails to reach the treasure? (Include the square where it begins and the square with the X.) How many hours will it take for the ship with the orange sails?

Opening their treasure chest, some pirates counted 240 gold coins. If each of the 10 pirates on the ship gets the same number of coins, how many coins will each pirate have? If the captain and the first mate get double the number of coins than the rest of the crew, how many coins will the captain and the first mate have? How many will the other 8 pirates have? Work with a partner to find a solution strategy. Draw a picture to show how the coins are distributed.

Grades 3–4

The temperature on the deck of the ship is 102°F. Some of the pirates are so hot that they decide to go below deck into the air-conditioned cabins to cool off. If it is 15° cooler below deck, what is the temperature in the cabin area? Discuss your strategy for solving with the group. How is your strategy similar to or different from your friends’ strategies?

K–Grade 2

After the pirates found their treasure, they had to bring it back to the ship in a rowboat. The rowboat could hold only 2 pirates and 3 small buckets of gold coins. If 16 pirates were on the shore with enough gold to fit into 24 buckets, how many trips would it take to get all the pirates and gold coins onto the pirate ship?