Lesson: **Tiles for Miles**
Grades: 2-3
Skills: Number sense, addition, making organized lists
Time: 25 minutes

What to do:
Discuss with your students that there are many ways to use numbers to add up to 26 miles. For this problem, they will use color tiles to help them visualize and find numbers that have a sum of 26.

Note: If color tiles are not available, substitute with colored squares of paper, pattern blocks, or any manipulative which can have assigned values.

Activity:
Distribute tiles to the students making sure they have at least 26 yellow tiles, 13 blue tiles and 5 red tiles. Tell them that:

Yellow tiles = 1 mile
Blue tiles = 2 miles
Red tiles = 5 miles

Ask the following questions then distribute the worksheet on the following page and have students see how many ways they can make a sum of 26 using the three addends.

Is there any way to get to 26 using just one color tile?
→ 26 yellows or 13 blue tiles

What is the greatest number of red tiles that can be used?
→ 5 red tiles make 25

Extension:
Substitute different values for the tiles and/or use them to make more than one marathon's worth of miles.

Lesson: Tiles for Miles (continued)

Possible answers for the Tiles for Miles worksheet.

Yellow	*Blue*	*Red*
26	0	0
24	1	0
22	2	0
21	0	1
20	3	0
19	1	1
18	4	0
17	2	1
16	0	2
16	5	0
15	3	1
14	1	2
14	6	0
13	4	1
12	2	2
12	7	0
11	0	3
11	5	1
10	3	2
10	8	0
9	1	3
9	6	1
8	4	2
8	9	0
7	2	3
7	7	1
6	0	4
6	5	2
6	10	0
5	3	3
5	8	1
4	1	4
4	6	2
4	11	0
3	4	3
3	9	1
2	2	4
2	7	2
2	12	0
1	0	5
1	5	3
1	10	1
0	3	4

0	8	2
0	13	0

Name: _____

Tiles for Miles Worksheet

You decide to map out a marathon course using colored tiles. Here are the values of each color.

Yellow tiles = 1 mile
Blue tiles = 2 miles
Red tiles = 5 miles

How many different ways can you discover to make a sum of 26 using the tiles? Make sure to record your answers!!

Example:

Lesson: **Even and Odd Mile Markers**
Grades: 2-3
Skills: Even and odd numbers, number sense
Time: 20 minutes

What to do:
Tell the students that a runner ran a full 26-mile marathon. At each mile she passed, there was a sign telling how many miles she had completed. Ask the following questions and have students show their work and share their strategies.

Problem 1:
How many even mile markers did she pass?
→ 13

How many of the mile markers are odd?
→ 13

Extension:
How many even and odd mile markers would a runner pass if they completed two marathons?
→ 52

Challenge:
What would the sum of all the mile markers be in one marathon?
→ 351

Lesson: **Foundation Prize Math**
Grade: 2
Skills: Number sense, arithmetic
Time: 25 minutes

What to do:
Read the information in the box below and ask the following questions.

To earn a certificate from New York Road Runners Foundation, you have to complete 5 miles! To earn a pencil sharpener you need to complete 45 miles! To earn a ruler you need to complete 90 miles!

Question 1: If you've already completed 3 miles, how many more miles do you have to run to get the certificate?
→ 2 miles

Question 2: If three students have each run 3 miles, how many more miles altogether do they have to run to get certificates?
→ 6 miles

Question 3: If you have run 34 miles, how many more miles do you need to run to get the sharpener?
→ 11 miles

Question 4: If two students earn sharpeners, how much did they run altogether?
→ 90 miles

Challenge: If you run 5 miles a week, how many weeks would it take you to earn the ruler?
→ 18 weeks

Lesson: **Grete Waitz Fill-In**
Grades: 2-3
Skills: Literacy, number sense
Time: 25 minutes

What to do:
Read the entire passage on the student worksheet (following page) out loud with the students. Then work with them on filling in the blank spaces with the numbers from the box.

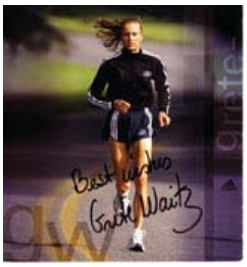
1. Discuss with students which numbers could be used in the spaces that tell the year she was born and the year she ran her first marathon.
→ Marathon year, 1978, must be after birth year, 1953

2. Discuss that length of marathon is 26 miles. Have students use manipulatives or drawings to help them figure out what a half marathon is.
→ 13 miles

3. Discuss with students that there is only one answer that shows a time.
→ 2 hours 32 minutes

4. By process of elimination, Grete won the NYC marathon
→ 9 times

Name: _____



Grete Waitz Fill-In Worksheet

Grete Waitz is the Chairwoman of the New York Road Runners Foundation. She was also one of the best woman marathon runners ever to race. She was born in the year _____ in Norway, and was an excellent short distance runner before she switched to marathon running.

The first marathon she ever ran was the New York City Marathon in the year _____. Before she started the race, she did not know if she could even finish, because the longest distance she had ever run was less than half a marathon, which is _____ miles!!

The race started and Grete began to run. She was doing well and running very fast through the streets of New York. At the halfway point she was feeling tired, but Grete kept running. A few miles later, she began to feel really exhausted and thought about stopping, but because she did not speak much English she was afraid to stop. Grete thought if she did, she would be lost somewhere in New York, so she kept on running. Finally she made it to Central Park in Manhattan and she knew she was near the finish. People in the park were cheering for her so she began to run even faster.

When she finished the race, there was a big commotion around her. She did not know what was going on. People ran out to congratulate her and shake her hand. When she asked what was happening, they explained to her that she had just won the New York City Marathon! And not only that, she had just set a new women's world record for the marathon!!! Her time was ___ _____. After that, Grete went on to win the New York City Marathon more times!!!

13
2 hours 32 minutes
1953
1978
8

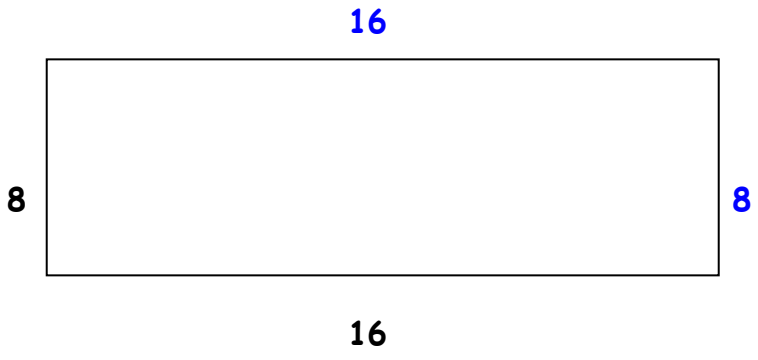
Lesson: **Gym Measurement**
Grades: 2-3
Skills: Measurement strategies, number sense
Time: Varies

What to do:
Tell students they are going to measure the distance around your school's gym.

Ask: What can be used to accurately measure such a long distance?
Why are rulers not a great choice to measure long distances?
→ **They are too small.**

Activity:
Have students predict how long the perimeter of the gym is. Then, use a tape measure, yardsticks, or a measuring wheel, if available, to make measurements around the entire gym.

If the gym in your school is a rectangle, ask students if they have to measure all 4 sides?
→ No, just the length and width and double it. For example:



Of course they should measure all 4 sides to check!!

Challenge:

If students used a yardstick to measure the gym, have them figure out how many feet it is around the gym by tripling the number of yards!!

Lesson: **Marathon Prize Challenges**
Grades: 2-3
Skills: Working with multiples of 5, arithmetic
Time: 25 minutes

What to do:
Copy this chart on the board and ask the questions below:

Chart of Prizes for Runners in a Marathon

Place	Prize	Bonus	Total
1st	$30	$15	
2nd	$15	$10	
3rd	$10	$5	

Problem 1:
Calculate the amount for the TOTAL column for each runner. (Discuss adding of tens and fives to solve these.)
→ $45, $25, $15

Problem 2:
How much more total money does the first place runner win than the second place runner?
→ $20

Problem 3:
In total, how much money have all three runners won?
→ $85

Challenge:
If the prizes in the table are just for the women runners, and the winning men get exactly the same prizes, how much money is paid out to the male and female runners in total?
→ $170

Lesson: **Patterns of Runners**
Grade: 2
Skills: Patterning
Time: 25 minutes

What to do:
Ask students to complete the patterns on the runners' shirts on the following worksheet.

Answers are:

2, 4, 8, 16, 32, 64: multiply by 2

4, 8, 12, 16, 20, 24: add 4

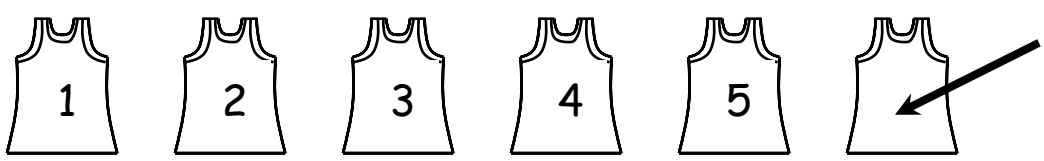
3, 6, 9, 12, 15, 18: add 3

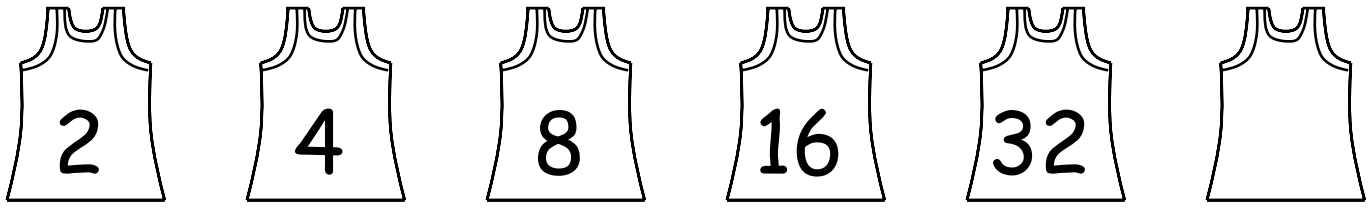
1, 2, 4, 7, 11, 16: add 1, add 2, add 3…

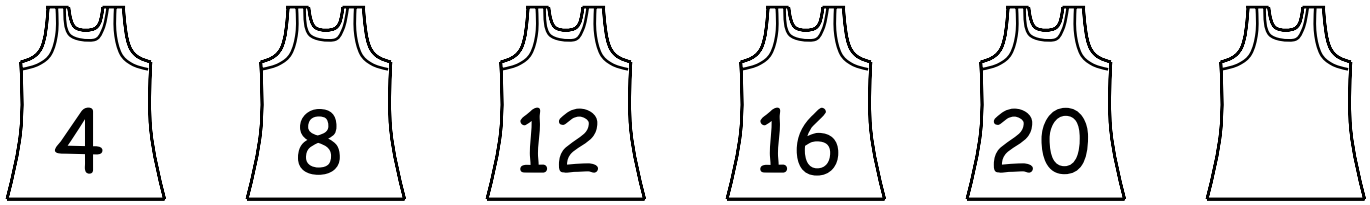
Name: _____

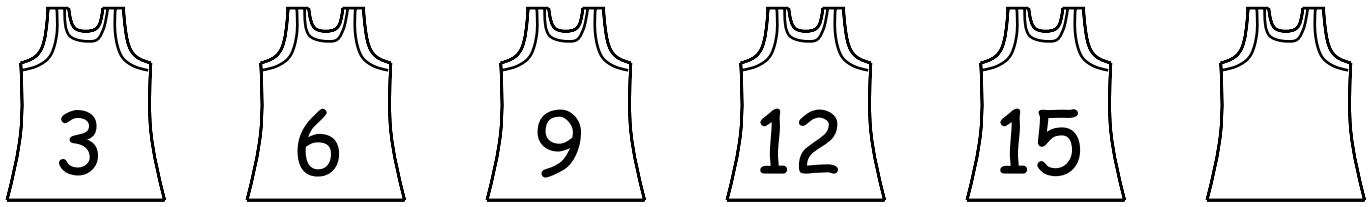
Patterns Worksheet

Look at the pattern on each row of these runners' shirts. Try to figure out what would come next. Write it on the blank shirt.

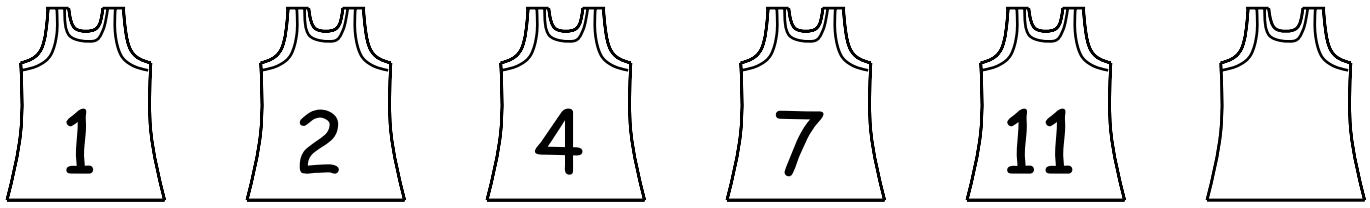








Challenge:



Name: _____

Shirt Sums Worksheet

Three runners are running a race and they have race numbers on their shirts. Write the numbers on each shirt so that the total is 15! Don't use the same number combination more than once.