

# Teaching Math Through Sports

Grades 5-8

Written by Anastasia Knechtel Silver and Frank Rozman  
Illustrated by S&S Learning Materials

**About the authors:** Anastasia Knechtel Silver was born and raised in Toronto, received her degrees in Mathematics and Education at Queen's University in Kingston, and spent several years living in Kansas City before moving to Napanee, where she now lives and writes. She plays many sports, has coached gymnastics and figure skating, and is an NFL and NASCAR fan.

Frank J. Rozman currently teaches Science and Physics at the secondary level in St. Catharines, Ontario. Teaching Math Through Sports is a unit that Frank describes as an effective way of motivating students to do mathematics activities through their interest in sport.

ISBN 978-1-55035-317-4

Copyright 1993

Revised June 2008

All Rights Reserved \* Printed in Canada

## Permission to Reproduce

Permission is granted to the individual teacher who purchases one copy of this book to reproduce the student activity material for use in his/her classroom only. Reproduction of these materials for an entire school or for a school system, or for other colleagues or for commercial sale is **strictly prohibited**. No part of this publication may be transmitted in any form or by any means, electronic, mechanical, recording or otherwise without the prior written permission of the publisher. "We acknowledge the financial support of the Government of Canada through the Book Publishing Industry Development Program (BPIDP) for this project."

Published in Canada by:  
S&S Learning Materials  
15 Dairy Avenue  
Napanee, Ontario  
K7R 1M4  
www.sslearning.com

© S&S Learning Materials



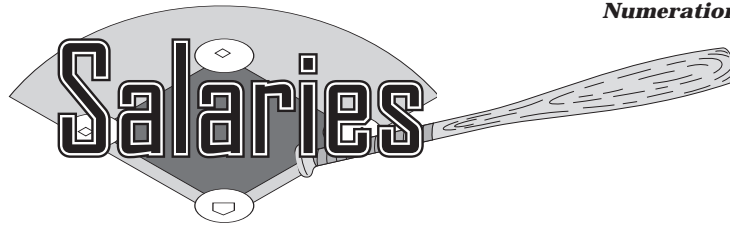
# Teaching Math Through Sports



## Table of Contents

At A Glance .....	2
Teacher Assessment Rubric .....	4
Student Assessment Rubric.....	5
List of Activities .....	6
How to Use This Resource .....	8
Overall Expectations.....	9
Reproducible Work Sheets:	
Numeration and Operations.....	12
Measurement .....	27
Geometry.....	41
Algebra .....	51
Data and Probability .....	61
Answer Key .....	72

# Salaries



The top 12 highest-paid major league baseball players in 2006 were:

- a) Andy Pettitte, Houston Astros – \$16,428,4**1**6
- b) Mike Mussina, New York Yankees – \$19,**0**00,000
- c) Jeff Bagwell, Houston Astros – \$19,369,0**1**9
- d) Manny Ramirez, Boston Red Sox – \$**1**8,279,238
- e) Todd Helton, Colorado Rockies – \$16,6**0**0,000
- f) Jason Giambi, New York Yankees – \$20,428,**5**71
- g) Randy Johnson, New York Yankees – \$15,66**1**,427
- h) Magglio Ordonez, Detroit Tigers – \$16,2**0**0,000
- i) Alex Rodriguez, New York Yankees – \$2**1**,680,727
- j) Derek Jeter, New York Yankees – \$20,600,0**0**0
- k) Chan Ho Park, San Diego Padres – \$**1**5,505,142
- l) Barry Bonds, San Francisco Giants – \$19,33**1**,470



1

Write the place value for the shaded digits in each salary.

- |          |          |          |
|----------|----------|----------|
| a) _____ | b) _____ | c) _____ |
| d) _____ | e) _____ | f) _____ |
| g) _____ | h) _____ | i) _____ |
| j) _____ | k) _____ | l) _____ |

2

Write each salary in expanded form.

- |          |          |
|----------|----------|
| a) _____ | b) _____ |
| c) _____ | d) _____ |
| e) _____ | f) _____ |
| g) _____ | h) _____ |
| i) _____ | j) _____ |
| k) _____ | l) _____ |

3

You are the Yankees manager, writing pay cheques. Write the salaries of the five Yankees players in words.

---



---



---



---



---



---

# On the Road Again

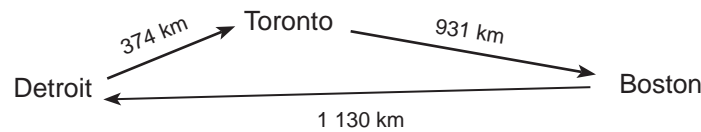
Major League baseball teams each play 162 games per season; half at home and half at other teams' ballparks in cities across North America. That's a lot of travelling!

The Toronto Blue Jays' schedule took them to 4 cities in early May.  
We can calculate the total kilometres travelled:

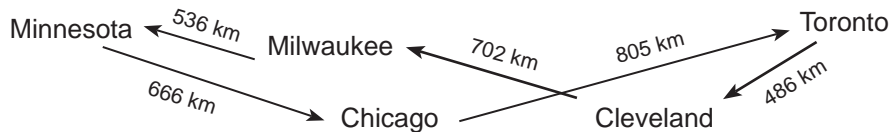
2 2 3	947
	3 498
	1 258
	1 909
	+ 4 285
	11 897

The Blue Jays traveled 11 897 km

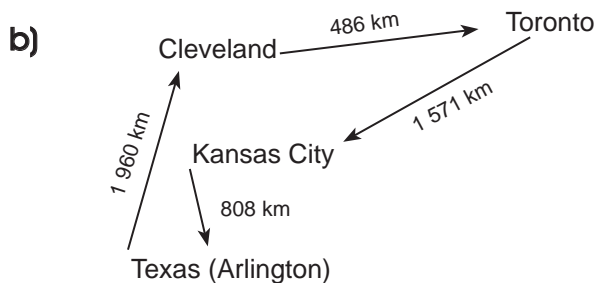
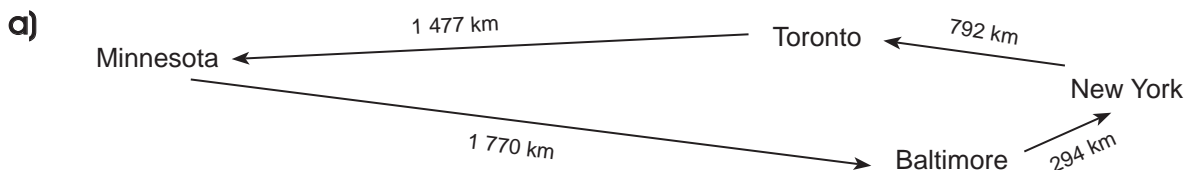
1 What is the total distance the Toronto Blue Jays will travel on this trip from Toronto to Boston, then to Detroit, and back home again?



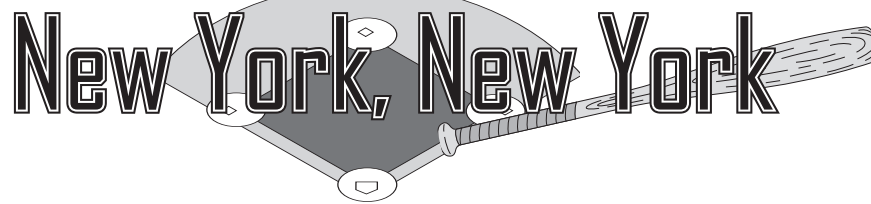
2 What distance will the Blue Jays travel on this trip, which includes stops in four cities before returning home?



3 The Jays have two road trips planned for August. How far will they travel? Estimate first and then calculate.



# New York, New York



Frank Sinatra's song calls it "so big you have to say it twice". The denizens of New York City have quite a choice when it comes to attending major league sports games. In the greater New York City area, which includes east New Jersey, just across the Hudson River, there are two MLB baseball teams, two NBA basketball teams, two NFL football teams, and three NHL hockey teams.

This is a chart of those nine teams, where they play their home games, and the seating capacity of those venues. Some teams share a facility, but because of set-up differences, the number of seats may vary.



baseball	New York Mets	Shea Stadium	55,601
	New York Yankees	Yankee Stadium	57,545
basketball	New York Nets	Continental Airlines Arena	19,968
	New York Knicks	Madison Square Garden	19,673
football	New York Giants	Giants Stadium	78,741
	New York Jets	Giants Stadium	78,741
hockey	New Jersey Devils	Continental Airlines Arena	19,040
	New York Islanders	Nassau Coliseum	16,234
	New York Rangers	Madison Square Garden	18,200

- 1 Order the venues by seating capacity from greatest to least. Include the sport where the same physical venue has different capacities when different sports are played in the same facility.  


---



---
- 2 How many more people does the largest venue hold than the smallest?
- 3 How many more fans can attend a Yankees game than can attend a Mets game?
- 4 Can more fans attend a Nets game or a Knicks game? How many more?
- 5 How many more people does Continental Airlines Arena hold for a basketball game than for a hockey game? How do you account for the difference?
- 6 Which two different physical venues are the closest in seating capacity? List the sports being played as well as the venue. What is the difference in capacity?

# Multiply It Again, Sam

Joe Louis Arena, the home of the Detroit Red Wings, has a seating capacity of 19 275. If the arena seats are sold out for each of the Red Wings' 41 home games, we can calculate the total number of tickets sold by multiplying the seating capacity by the number of games. So for a sold out season, 790 275 home game seat tickets were sold.



- 1 Solve each problem, showing your calculations and writing an answer statement. Madison Square Garden holds 19 673 people for basketball. If it was sold out for all 41 Knicks home games last year, how many fans attended Knicks games during the season?
- 2 Ralph Wilson Stadium hosts 8 Buffalo Bills home games per season. If the 73 967 seats are sold out for every game, how many tickets were sold?
- 3 The average price of a ticket for Arrowhead stadium is about \$73. The stadium seats 79 451. For a sold-out game, what is the ticket revenue?
- 4 Pats fans pay an average of about \$128 per ticket, with 68 756 seats in Gillette Stadium; for a sold-out game, what is the ticket revenue?
- 5 An NFL team must have a total of only 53 players by the beginning of each season. If there are 32 teams in the NFL, how many players are there during the regular season?
- 6 There are 30 MLB teams, and they each play 162 games per season. How many regular season games must the MLB schedule each year? (**Hint:** You must divide  $(30 \times 162)$  by 2. Why?)
- 7 There are also 30 NBA teams, but they play only 82 games each per season. How many games must be scheduled?