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# CELEBRATE BASIC MATHS SKILLS

Basic does not mean boring! There certainly is nothing dull about tracking down solutions to sticky situations and finding out . . .

- . . . how far the coach has to walk when the team bus runs out of petrol
- . . . which skier will win the most gold medals
- . . . how deep in debt scuba diver Scott gets buying new equipment
- . . . the number of bones in the feet of a weight-lifting team
- . . . whether Kate Kayaker survives a run through Last Chance Gorge
- . . . how many pizzas the cross-country team can eat after a meet
- . . . the number of falls taken by water-skiers and ice-skaters

The idea of celebrating the basics is just what it sounds like—enjoying and improving the basic skills of solving maths problems. The pages that follow are full of exercises for students that will help to review and strengthen specific, basic skills in the content area of maths. This is not just another ordinary ‘fill-in-the-blanks’ way to learn. The high-interest activities will put students to work applying a rich variety of the most important skills while enjoying fun and challenging adventures with numbers, ideas, and sports-related dilemmas.

The pages in this book can be used in many ways:

- for individual students to sharpen a particular skill
- with a small group needing to relearn or strengthen a skill
- as an instructional tool for teaching a skill to any size group
- by students working on their own
- by students working under the direction of an adult

**Each page may be used to introduce a new skill, reinforce a skill, or assess a student’s ability to perform a skill.**

As students take on the challenges of these adventures with problems, they will grow in their mastery of basic skills and will have a good time while they’re doing it. And as you watch them check off the basic problem-solving skills they’ve strengthened, you can celebrate with them!



# RIGHT ON TRACK

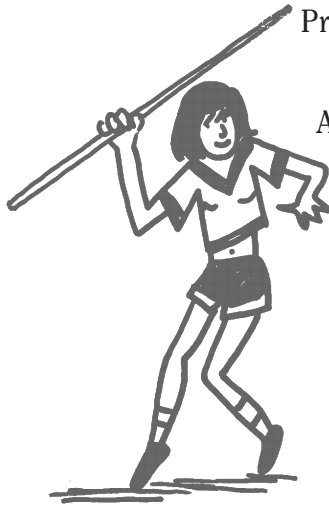
To solve a maths problem, you need to be able to identify what information in the problem is needed for finding a solution. For each problem below, circle the letters of the pieces of information that are needed in order to find the solution. Then solve the problem. Use a separate piece of paper for your work.

- Maria won 4 out of her last 7 races.
  - Her best time is 14 seconds.
  - She runs the 100 metre race.



Problem: At this rate, how many races will she win out of the next 35?

Answer: \_\_\_\_\_



- Steve's pole has broken 12 times this year.
  - It costs \$22 to fix a pole every time it is broken.
  - Steve has used his pole for 39 competitions in the last 2 years.

Problem: How much did Steve pay this year for repairs?

Answer: \_\_\_\_\_

- Hannah, a hurdler, slept for 8 hours and 30 minutes on Monday night.
  - She slept for 7 hours on both Tuesday night and Friday night.
  - She slept for 6 hours and 20 minutes on Wednesday night.
  - She got up at 6:30 A.M. on Thursday.

Problem: How much sleep did she get in the 3 nights before Thursday's meet?

Answer: \_\_\_\_\_



- The athletics meet started at 4:00 P.M. on Monday.
  - The high jump bar was knocked off 16 times.
  - Justin has placed first 13 times in this event.
  - There were a total of 52 jumps.

Problem: What is the ratio of unsuccessful jumps to total jumps (in lowest terms)?

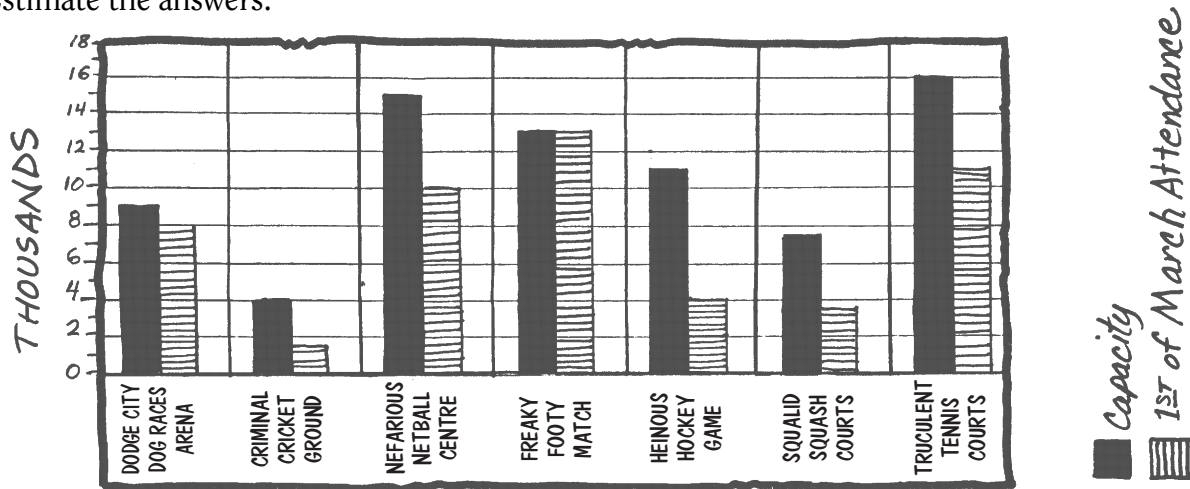
Answer: \_\_\_\_\_



Name \_\_\_\_\_

# RECORD ATTENDANCE

Use the bar graph to answer these questions about attendance at sporting events. Estimate the answers.



- Which 2 centres had about the same attendance on March 1st?  
\_\_\_\_\_
- What is the difference between the capacity of the Dodge City Dog Race Arena and the attendance on March 1st?  
\_\_\_\_\_
- Which arena has a difference of about 2500 between its capacity and the March 1st attendance?  
\_\_\_\_\_
- What is the difference between the capacity of the largest and the smallest arenas?  
\_\_\_\_\_
- How many more people attended the Nefarious Netball Centre on March 1st than attended the Squalid Squash Courts?  
\_\_\_\_\_
- How many fewer people watched the Heinous Hockey game than the Truculent tennis players?  
\_\_\_\_\_
- Which arenas have a difference of about 5000 between their capacity and March 1st attendance?  
\_\_\_\_\_
- How many fewer people watched the cricket game than the football match on March 1st?  
\_\_\_\_\_

Name \_\_\_\_\_

# PROBLEM-SOLVING STRATEGIES

One of the keys to successful problem solving is finding a strategy that works for that problem. If you get good at these strategies, you'll probably be able to tackle just about any problem you come across!

## ESTIMATE

Many times you can figure out a solution by doing a rough or approximate calculation. This works well when you don't have to get a **precise** answer.

*Maintenance workers want to set up several boxing rings in a huge sports centre. They need a space 9 metres by 9 metres for each boxing ring area. The sports centre is 19 metres x 42 metres. Can they set up 15 rings?*

Round the area of one ring ( $9 \times 9 = 81$ ) to 80. Then, round the dimensions of the sports centre ( $19 \times 42$ ) to 20 metres x 40 metres, giving an area of  $800\text{m}^2$ . You can estimate that this has room for about 10 rings, not 15. Then your solution is NO, they can't!

## TRANSLATE INTO AN EQUATION

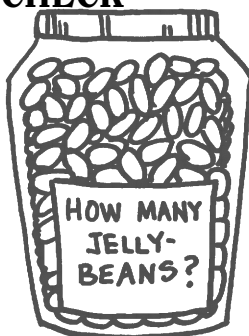
In many problems, you have a mixture of numbers and words. It is helpful to change the whole thing into a number sentence.

*The mountain climbing team climbed 200 metres on Saturday, 35 metres less on Sunday, and 41 metres more on Monday than on Sunday. How far did they climb all together?*

This can be changed into an equation:  
 $x = 200 + (200 - 35) + (200 - 35 + 41)$

## GUESS AND CHECK

Sometimes the best strategy is to make a smart guess and then count or calculate to see if you are right. When you enter a contest to see who can come closest to the correct number of jelly beans in a jar, you are using this strategy.



## TRANSLATE INTO A PROPORTION

When the problem gives you a ratio and asks for a solution at the same rate, set up a proportion that will help you find the answer.

*3 out of 16 skiers in the Himalayas claim to have seen the Abominable Snowman. At this rate, how many skiers out of 176 are likely to have seen the snowman?*

Set up this proportion:  $\frac{3}{16} = \frac{x}{176}$

## MENTAL MATHS

Solve simple problems in your head. Often you don't need pencil and paper or any other strategy!

To decide what time it will be in 3 hours and 20 minutes, mentally count 3 hours ahead from 2 P.M. and 20 minutes ahead from 37 (to 5:57 P.M.).

## TRIAL AND ERROR

For some problems, you just have to try out different solutions until you find one that works. Try out 2-digit even numbers until you find the answer to this problem:

*The number of fans on the Booster Club bus is an even, 2-digit number. The sum of the digits is  $>10$ , the difference is  $<5$ , and the product is  $<34$ .*

## USE A FORMULA

When you need to find a measurement, such as for area or volume, make sure you look up the accurate formula. To find the area of this circle, use the formula

$A = \pi r^2$  to find that the area is  $113\text{ m}^2$ .

