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CELEBRATE BASIC MATHS SKILLS

Basic does not mean boring! There is certainly nothing dull about . . .

- . . . calculating football injuries or kayak dunkings in a wild river
- . . . learning about great snowboard tricks like Fakies, Wheelies and McTwists
- . . . following mountain climbers as they slip and slide up and down the slopes
- . . . looking in on a burly weight-lifter as he mixes up a power drink for his friends
- . . . finding out the weight of a sumo wrestler or the number of dimples on a golf ball
- . . . using numbers to help out surfers, scuba divers or speed skaters
- . . . figuring out who has done the most flips on the trampoline.

These are just some of the adventures students will explore as they celebrate basic problem-solving skills. The idea of celebrating the basics is just what it sounds like – sharpening maths skills while enjoying the fun of sports teams and events. Each page invites learners to try a high-interest, visually appealing maths exercise built around sports situations. This is not just an ordinary fill-in-the-blanks way to learn. These exercises are fun and surprising and they make good use of thinking skills. Students will do the useful work of practising a specific problem-solving skill or strategy while stepping into the fascinating world of individual and team sports.

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

- for individual students to review or practise a particular skill
- to sharpen the skill with a small or large 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. And there's more than just the great student activity pages. You'll also find an appendix filled with resources for students and teachers – including a ready-to-use test for assessing problem-solving skills.

As your students take on the challenges of these adventures with problem solving, they will grow! And as you watch them check off the basic maths skills they've strengthened, you can celebrate with them!

The skills test

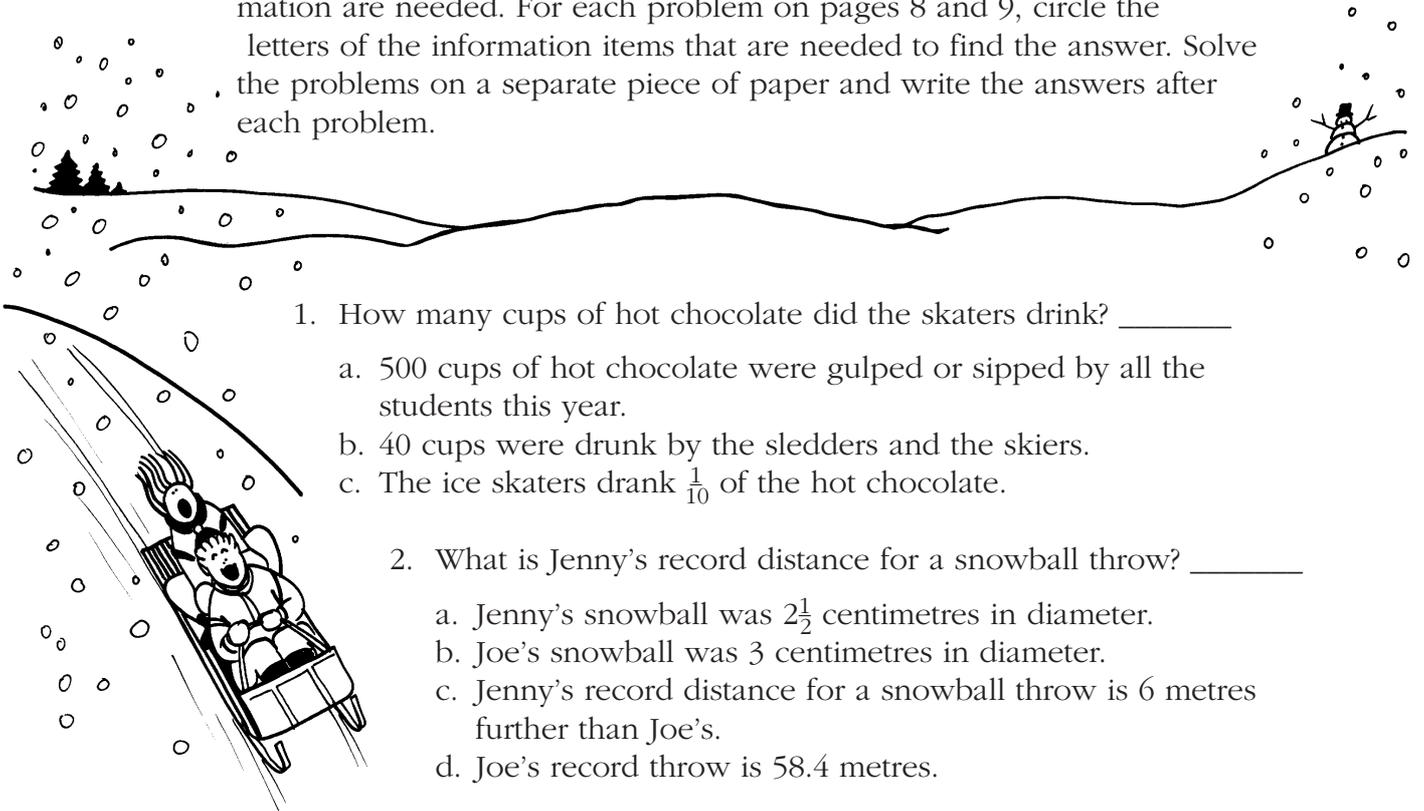
Use the skills test beginning on page 54 as a pretest and/or a post-test. This will help you check the students' mastery of problem-solving skills and strategies and will prepare them for success on achievement tests.

SKILLS CHECKLIST FOR PROBLEM SOLVING, Upper Primary

| ✓ | SKILL | PAGE(S) |
|---|--|---------------------------------------|
| | Solve a variety of word problems | 8–15, 17–19, 23, 25–28, 32–48 |
| | Identify information needed for solving a problem | 8–11 |
| | Solve problems involving measurement | 8, 9, 20, 21 |
| | Solve problems using fractions | 8, 9, 22 |
| | Solve problems using decimals | 8, 9, 23, 26, 27 |
| | Identify information that may be missing from a problem | 10 |
| | Eliminate excess information | 11 |
| | Solve problems using information from diagrams and illustrations | 13, 18–21, 26, 29, 30, 35, 37, 40, 41 |
| | Choose correct equations to solve problems | 14 |
| | Translate problems into equations | 14, 15 |
| | Find solutions to equations | 14, 15 |
| | Solve problems using information from charts, graphs and tables | 16, 17, 25, 42 |
| | Solve multi-step problems | 19, 24–28, 31, 34, 35, 40–42 |
| | Solve problems using statistical data | 16, 17, 35, 42 |
| | Find missing numbers for problem solutions | 25 |
| | Solve problems using money | 26, 27, 35 |
| | Select appropriate operation(s) for solving problems | 28, 29 |
| | Use formulas to find perimeter, area and volume of geometric figures | 30, 31 |
| | Solve problems involving ratios | 32 |
| | Solve problems involving percentages | 32, 33, 35 |
| | Solve problems involving time | 34 |
| | Solve consumer problems involving price increases and discounts | 35 |
| | Use estimation to solve problems | 36, 44, 45 |
| | Create diagrams, models or charts to help solve problems | 37 |
| | Use mental maths to solve problems | 38, 39, 44–46 |
| | Use logic to solve problems | 40, 41 |
| | Find more than one solution to a problem | 42, 43 |
| | Choose an appropriate strategy to solve a given problem | 44, 45 |
| | Write explanations of how problems were solved | 46, 47 |
| | Check the accuracy of problem solutions | 48 |

WINTER SPORTS FEST

Every winter the Bigtown Primary School has a big Winter Sports Fest. Students can take part in all kinds of sports – from ski races and ice carving contests to elaborate snowball throwing competitions. To solve the problems about this event, you will have to decide which pieces of information are needed. For each problem on pages 8 and 9, circle the letters of the information items that are needed to find the answer. Solve the problems on a separate piece of paper and write the answers after each problem.

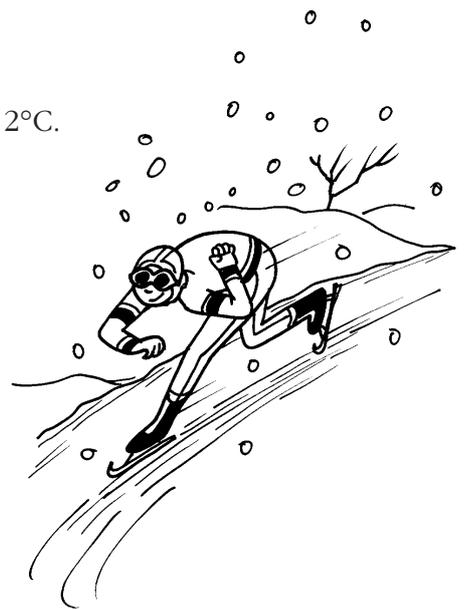


1. How many cups of hot chocolate did the skaters drink? _____
 - a. 500 cups of hot chocolate were gulped or sipped by all the students this year.
 - b. 40 cups were drunk by the sledders and the skiers.
 - c. The ice skaters drank $\frac{1}{10}$ of the hot chocolate.

2. What is Jenny's record distance for a snowball throw? _____
 - a. Jenny's snowball was $2\frac{1}{2}$ centimetres in diameter.
 - b. Joe's snowball was 3 centimetres in diameter.
 - c. Jenny's record distance for a snowball throw is 6 metres further than Joe's.
 - d. Joe's record throw is 58.4 metres.

3. What was the difference between the highest and lowest temperatures during the 1998 Winter Sports Fest? _____
 - a. On the warmest day of the 1998 Winter Sports Fest, the highest temperature was 9°C .
 - b. Water freezes at 0°C .
 - c. The coldest temperature during the 1998 Sports Fest was 2°C .
 - d. The wind blew at 21 km/h.
 - e. The lowest temperature in 1996 was -6°C .

4. How many spectators watched the events in the afternoon? _____
 - a. There were 196 spectators attending before noon.
 - b. The crowd dwindled to 53 at lunchtime.
 - c. The crowd in the afternoon was $1\frac{1}{2}$ times the size of the morning crowd.



Use with page 9.

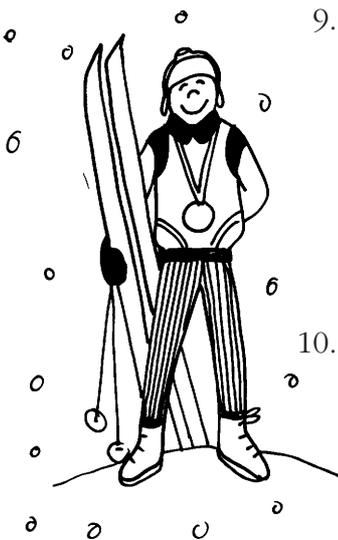
Name _____

5. How much faster than Wanda and Will were the sled-run winners? _____
- Water freezes at 0°C.
 - Wanda and Will finished the sledding run in 1 minute 22 seconds.
 - The slowest sled run time was 1 minute 41 seconds.
 - Erin and Erika won the sled race with a time of 1 minute 15 seconds.
 - The slowest sled run was 26 seconds longer than the fastest time.

6. About how many snowballs did each kid throw? _____
- 704 snowballs were thrown during the snowball fight competition.
 - There were 16 kids on each of two teams.
 - There was an equal number of Year Fours on each team.

7. What fraction of the ski team wore goggles? _____
- The ski team had 30 members.
 - $\frac{1}{5}$ of the team members wore sunglasses.
 - There were 16 girls and 14 boys on the team.
 - 25 of the kids on the team wore goggles.

8. How many fewer times did the Year Sixes fall than the Year Eights? _____
- There were 74 falls on the Year Seven snowboard team.
 - There were 88 falls on the Year Eight snowboard team.
 - There were 50 falls on the Year Six team.
 - There were 7 members on the Year Eight team.



9. Who was the fastest of the three racers, and what was his or her time? _____

- The speed skating competition was for a 500-metre distance.
- Sara skated the race in 65 seconds.
- James took 5 seconds longer than Sara.
- Barry's race time was 2 seconds faster than Sara's.

10. How many awards were given all together? _____

- The trophies and medals were awarded at the end of the Sports Fest.
- Awards were given for 28 events.
- Four awards were given for each event.
- Speed skaters won 16 of the awards.

Use with page 8.

Name _____