

MENTAL MATH ACTIVITIES

GRADES 1-4

Western and Northern Canadian
Protocol (WNCP) Edition

hands-on mathematics

Project Editor

Jennifer E. Lawson

Senior Author

Dianne Soltess

Mathematics Consultant

Meagan Mutchmor

Writers

Patricia Ashton

Joni Bowman

Gail Ruta Fontaine

Colleen Foster

Betty Johns

Cathy Haggart

Heidi Holst

Kara Kolson

Suzanne Mole



PORTAGE & MAIN PRESS

Winnipeg • Manitoba • Canada

© 2007 Jennifer Lawson

From *Hands-On Mathematics: Grades 1-4*, revised editions, © 2007

Portage & Main Press acknowledges the financial support of the Government of Canada through the Book Publishing Industry Development Program (BPIDP) for our publishing activities.

All rights reserved. With the exceptions of student activity sheets and evaluation forms individually marked for reproduction, no part of this publication may be reproduced or transmitted in any form or by any means – graphic, electronic, or mechanical – without the prior written permission of the publisher.

Series Editor:	Leslie Malkin
Book and Cover Design:	Relish Design Ltd.
Illustrations:	Jess Dixon
Senior Author:	Dianne Soltess
Mathematics Consultant:	Meagan Mutchmor

Mental Math Activities
Grades 1-4
Western and Northern Canadian Protocol
(WNCP) Edition

Printed and bound in Canada by Prolific Group

ISBN 978-1-55379-142-3



PORTAGE & MAIN PRESS
100-318 McDermot Avenue
Winnipeg, Manitoba, Canada R3A 0A2

Email: books@portageandmainpress.com
Tel: 204-987-3500
Toll Free: 1-800-667-9673
Fax: 1-866-734-8477

Contents

Introduction to Mental Math Grades 1-4	1
Grade 1 Mental Math Strategies	4
Grade 2 Mental Math Strategies	6
Grade 3 Mental Math Strategies	8
Grade 4 Mental Math Strategies	11
Number-Cube Cards	15
Dot-Pattern Cards	16
Domino Cards	19
Ten Frames – Shaded (0-10)	25
Ten Frames – Dot (0-10)	29
Ten Frames – Shaded (11-20)	33
Ten Frames – Dot (11-20)	36
Ten Frames – Shaded (21-50)	39
Ten Frames – Dot (21-50)	59
Base-Ten Cards	79
Multiplication (Grouping) Cards to 25	92
Multiplication Cards to 81	96
Screened-Sets Cards (Facts to 25)	104
Screened-Sets Cards (Facts to 81)	108

Introduction to Mental Math Grades 1-4

What Is Mental Math?

Mental math is a core focus of mathematics, which helps students develop essential skills involved in working with numbers and assists them with daily mathematical thinking and problem solving.

Mental math:

- is visually and cognitively based. Students do not use manipulatives or paper-and-pencil supports when doing mental math activities or solving mental math problems
- involves mental calculating without the use of external memory aids
- is a combination of cognitive strategies that enhances flexible thinking and number sense
- improves computational fluency by developing efficiency, accuracy, and flexibility

At any grade level, students should do mental math activities daily for approximately five minutes. When they are calculating mentally, speed should not be a factor in determining how successful they are with the task. Students differ in the amount of time they need to process mathematical concepts, and, so, it is recommended that mental math activities not be timed.

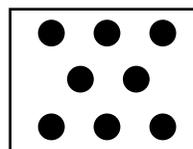
When conducting mental math activities in your classroom, students benefit from discussing various strategies for solving the same problem. Encourage students both to share their own strategies and to listen to the strategies used by others.

The ***Hands-On Mathematics*** program focuses on three types of mental math: *subitizing*, *mental calculations*, and *counting*.

Subitizing

Subitizing means instantly recognizing random number patterns. This is sometimes referred to as *flash math*. You can use an overhead

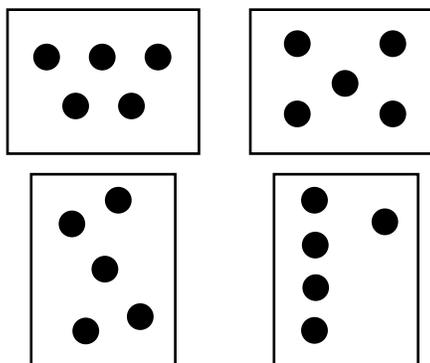
projector to flash number patterns or you can simply flash cards by hand. Display patterns for a few seconds, and then ask students to tell what number they saw and how they saw it. For example:



I saw 8, or
I saw 5 and 3.

You can also use various objects for subitizing, such as bingo chips or interlocking cubes, by placing sets of them onto an overhead projector.

Subitizing patterns can be regular patterns or random configurations. For example, students should instantly recognize “five” in any of the following configurations:



Four types of subitizing templates are included in the ***Hands-On Mathematics*** program:

1. Number-cube cards display the six sides of number cubes (dice) with dots in the traditional number-cube positions.

