

# Process Standards Rubric



## Number and Operations

Expectations Instructional programs from pre-kindergarten through grade 12 should enable all students to:	Exercise														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GOAL 1: Problem Solving • build new mathematical knowledge through problem solving; • solve problems that arise in mathematics and in other contexts; • apply and adapt a variety of appropriate strategies to solve problems; • monitor and reflect on the process of mathematical problem solving.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 2: Reasoning & Proof • recognize reasoning and proof as fundamental aspects of mathematics; • make and investigate mathematical conjectures; • develop and evaluate mathematical arguments and proofs; • select and use various types of reasoning and methods of proof.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 3: Communication • organize and consolidate their mathematical thinking through communication; • communicate their mathematical thinking coherently and clearly to peers, teachers, and others; • analyze and evaluate the mathematical thinking and strategies of others; • use the language of mathematics to express mathematical ideas precisely.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 4: Connections • recognize and use connections among mathematical ideas; • understand how mathematical ideas interconnect and build on one another to produce a coherent whole; • recognize and apply mathematics in contexts outside of mathematics.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 5: Representation • create and use representations to organize, record, and communicate mathematical ideas; • select, apply, and translate among mathematical representations to solve problems; • use representations to model and interpret physical, social, and mathematical phenomena.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drill Sheet 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drill Sheet 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Review A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Review B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Review C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



# Teacher Guide

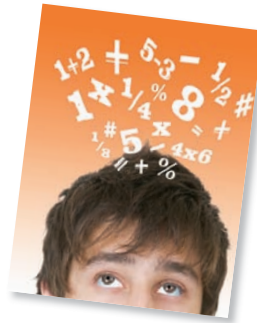
Our resource has been created for ease of use by both **TEACHERS** and **STUDENTS** alike.

## Introduction



Our resource offers ready-to-use worksheet activities for students in grades six to eight.

Math concepts outlined by the NCTM are presented in a way that encourages students to learn and review important concepts. Our resource can be used effectively for whole-class, small group and independent work. This book's exercises vary in difficulty and content so as to provide teachers and students with a variety of teaching and learning opportunities. Included are problems using multiplication and division, place value, fractions, percent and decimals. Visual models are included to assist visual learners. Teachers may also choose to use mathematics manipulatives along with the exercises included in this book to help address the needs of kinesthetic learners.



The **NCTM Content Standards Assessment Rubric** (page 4) is a useful tool for evaluating work in many of the activities in our resource. The **Reviews** (pages 24-26) are divided by grade and can be used for a follow-up review or assessment at the completion of the unit.

## PICTURE CUES

This resource contains three main types of pages, each with a different purpose and use. A **Picture Cue** at the top of each page shows, at a glance, what the page is for.

### Teacher Guide

- Information and tools for the teacher

### Student Handout

- Reproducible worksheets and activities

### Easy Marking™ Answer Key

- Answers for student activities

## How Is Our Resource Organized?

### STUDENT HANDOUTS

Reproducible **task sheets** and **drill sheets** make up the majority of our resource.

The **task sheets** contain challenging problem-solving tasks, many centered around 'real-world' ideas or problems, which push the boundaries of critical thought and demonstrate to students why mathematics is important and applicable in the real world. It is not expected that all activities will be used, but are offered for variety and flexibility in teaching and assessment. Many of the task sheet problems offer space for reflection, and opportunity for the appropriate use of technology, as encouraged by the NCTM's *Principles & Standards for School Mathematics*.

The **drill sheets** are provided to help students with their procedural proficiency skills, as emphasized by the NCTM's *Curriculum Focal Points*.

## EASY MARKING™ ANSWER KEY

Marking students' worksheets is fast and easy with this **Answer Key**. Answers are listed in columns – just line up the column with its corresponding worksheet, as shown, and see how every question matches up with its answer!

Every question matches up with its answer!



## Task Sheet 4

- 4a) Josh got a summer job working at *Pizza Supremo*. The cook's specialty is the macaroni-mushroom pizza, which accounts for 40% of their sales. Their average total daily sales are:

Large	120
Medium	210
Small	315



How many macaroni-mushroom pizzas of each size are sold on the average day?

Macaroni-mushroom Pizza	
Large	
Medium	
Small	

- b) A part of their business is also selling pizzas by the slice to walk-in customers. Because their slices are huge, a large pizza is only divided into four slices - however, Josh is not very good at dividing the pizza accurately. Complete the following chart to show how the following pizzas were actually divided (as a decimal of the whole).

Pizza #	Slice 1	Slice 2	Slice 3	Slice 4
1	$\frac{1}{4}$	0.23	28%	
2	$\frac{1}{5}$	0.30	25%	
3	$\frac{2}{5}$	0.15	32%	

- c) The making of the famous macaroni-mushroom pizza includes the following ingredients: pizza dough, parmesan cheese, pepperoni, mushrooms, macaroni, tomato sauce, feta cheese, onions and hot peppers. Altogether, the actual cost of ingredients for the pizzas are shown below.

If a large macaroni-mushroom pizza sells for \$14.40, a medium for \$12.50 and a small \$9.50, how much of a profit does *Pizza Supremo* make for each?

Large	\$2.10
Medium	\$1.80
Small	\$1.55

Large	
Medium	
Small	



# Task Sheet 12

- 12a)** Caleb and Stephen's results from their last five science tests are shown in the following table:

<b>Caleb</b>	20	21	17	19	21
<b>Stephen</b>	21	21	18	16	18

According to the results presented in this table, calculate the mean scores of both students.



## Show your Work

Answer: Caleb: \_\_\_\_\_ Stephen: \_\_\_\_\_

- b)** Using the data presented in the table in 12a, what is the **range** of marks represented by the marks of **both** students?

Range = \_\_\_\_\_

- c)** Considering only Caleb's results, what score represents the **mode**?

Mode = \_\_\_\_\_

- d)** Considering only Stephen's results, what score represents the **median**?

Median = \_\_\_\_\_

## Explore With Technology

Use a calculator to complete the following:

Multiply 13.705	
24.1	
0.76	
6.02	
99.9	