

NCTM Process Standards Rubric

Data Analysis & Probability – Drill Sheets

Expectations Instructional programs from pre-kindergarten through grade 12 should enable all students to:	Drills											
	Warm-up 1	Timed Drill 1	Timed Drill 2	Warm-up 2	Timed Drill 3	Timed Drill 4	Warm-up 3	Timed Drill 5	Timed Drill 6	Warm-up 4	Timed Drill 7	Timed Drill 8
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.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Warm-up 5	Timed Drill 9	Warm-up 6	Timed Drill 10	Timed Drill 11	Review A	Review B	Review C				



Teacher Guide

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

Introduction

The NCTM content standards have been used in the creation of the assignments in this booklet. This method promotes the idea that it is beneficial to learn through practical, applicable, real-world examples. Many of the drill sheets are organized around a central problem taken from real-life experiences of the students. The pages of this booklet contain a variety in terms of levels of difficulty and content so as to provide students with a variety of different opportunities. Included in our resource are activities to help students learn how to collect, organize, analyze, interpret, and predict data probabilities. 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.

Contained in this booklet are 11 Timed Drill Sheets and 6 Warm-Up Drill Sheets, featuring real-life problem-solving opportunities, and 3 review sheets for grades PK-2. There are 3 overheads and 6 additional worksheets which can be accessed on the publisher's website.

How Is Our Resource Organized?

STUDENT HANDOUTS

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

The **drill sheets** contain challenging problem-solving tasks in drill form, 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 drill 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** workbook can be used in correlation with the separate **task sheets** workbook that matches with this particular grade and subject.

The **NCTM Content Standards Assessment Rubric** (page 4) is a useful tool for evaluating students' 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

Our 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 drill sheets

Easy Marking™ Answer Key

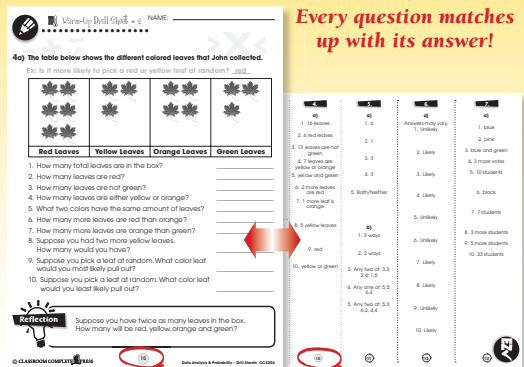
* Answers for student activities

Timed Drill Stopwatch

* Write the amount of time for students to complete the timed drill sheet in the stopwatch. Recommended times are given on the contents page.

EASY MARKING™ ANSWER KEY

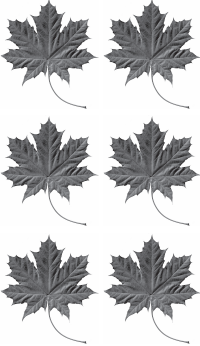
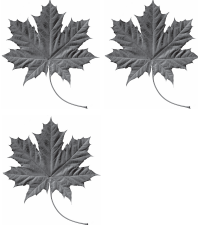
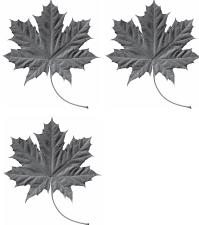
Marking students' worksheets is fast and easy with our **Answer Key**. Answers are listed in columns – just line up the column with its corresponding worksheet, as shown, and see how every question matches up with its answer!





4a) The table below shows the different colored leaves that John collected.

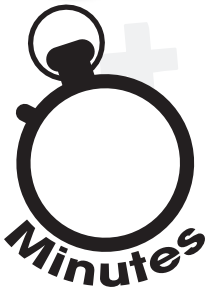
Ex: Is it more likely to pick a red or yellow leaf at random? red

			
Red Leaves	Yellow Leaves	Orange Leaves	Green Leaves

1. How many total leaves are in the box? _____
2. How many leaves are red? _____
3. How many leaves are not green? _____
4. How many leaves are either yellow or orange? _____
5. What two colors have the same amount of leaves? _____
6. How many more leaves are red than orange? _____
7. How many more leaves are orange than green? _____
8. Suppose you had two more yellow leaves.
How many would you have? _____
9. Suppose you pick a leaf at random. What color leaf
would you most likely pull out? _____
10. Suppose you pick a leaf at random. What color leaf
would you least likely pull out? _____

Reflection

Suppose you have twice as many leaves in the box.
How many will be red, yellow, orange and green?



**6a) Likely means it will often happen.
Unlikely means it won't often
happen. Circle whether it is likely or
unlikely for each event to happen
below.**



Ex: Snow to fall in the summer.

Likely or unlikely

1. Elephant to fly on its own.

likely or unlikely

2. Kids eat ice cream.

likely or unlikely

3. A plant to grow.

likely or unlikely

4. A dog to bark.

likely or unlikely

5. Sun to shine at night.

likely or unlikely

6. For fish to talk.

likely or unlikely

7. Clouds to change shape.

likely or unlikely

8. Snow in winter.

likely or unlikely

9. For you to see a live dinosaur.

likely or unlikely

10. Spring to arrive each year.

likely or unlikely