

## What are HEADS UP *maths workouts*?

The **HEADS UP *maths workouts*** programme is an in-class or homework system that provides a **comprehensive review of mathematical skills and concepts**. It is constructed to build **mathematical knowledge** through regular, organised, cyclical practice and review. It reflects the new National Standards and aims to raise student achievement.

### DAY 1

Basic Facts: **Addition**

1. **Numeracy**
2. **Patterns**
3. **Measurement**

### DAY 2

Basic Facts: **Addition**

4. **Numeracy**
5. **Vocabulary**
6. **Geometry**

### DAY 3

Basic Facts: **Addition**

7. **Numeracy**
8. **Time / Money**

### DAY 4

Basic Facts: **Addition**

9. **Numeracy**
10. **Algebra**
11. **Data Analysis**

### DAY 5

Basic Facts: **Addition**

12. **Basic Operations**
13. **Problem-solving**

**HEADS UP *maths workouts*** are daily review in individual student workbooks. Components of the programme include:

- **Student Workbooks.** – Each student receives two 64-page workbooks that cover the school year. Each workbook covers 12 CYCLES, a total of 24 for the year (one CYCLE = 5 pages or a week of work). One CYCLE, five workout pages, covers 12 concepts (see Fig 1), basic facts for addition, and one problem-solving question. Additionally, photocopyable RECYCLES, in the Teacher's Manual, cover the same set of skills and concepts.
- **Student Tracking.** The inside cover of the workbook has a Tracking Sheet on which students record their results.
- **Teacher Resource.** The Teacher's Manual includes information about the **HEADS UP** programme, photocopyable Tracking Sheets, answers to the daily worksheets and additional practice pages, RECYCLES, with their answers. RECYCLE pages (photocopyable) may be used as extra review or as a test.
- **Grids of Learning Intentions, National Standards and Sample Problems** . Grids of concepts and skills with associated Learning Intentions, National Standards and Numeracy Stages are found in the Teacher Manual.

## How and when do I use HEADS UP?

The features of **HEADS UP *maths workouts*** allow for many teaching and management preferences. **HEADS UP** does NOT prescribe how to teach; teachers are inventive and have their own styles. However, we offer some suggestions and ideas from other teachers:

Fig. 1

- **Beginning of school as the first activity of the day or as maintenance at the beginning of the daily maths lesson.**

A **HEADS UP maths workout** is an excellent start and routine for the beginning of the school day or maths class.

- **One day a week in maths class as weekly review.**

Set aside one day a week as **HEADS UP** review time. The students work through all five pages for that CYCLE. The teacher is available to help individual students with problem areas.

- **Daily maths homework.**

A page from the **HEADS UP maths workouts** can be used as daily homework or as a combination of in-class and homework.

Whatever strategy is used, the students will be maintaining their memory through regular, cyclic review of skills and concepts from the NZ Curriculum.

## Features of HEADS UP maths workouts

### ORGANISATION OF DAILY PAGES

**ADD 1**

1	9	7

**4** There are \_\_\_\_\_ balls .

**5** Fill in the blanks.  
 less than \_\_\_\_\_  
 greater than \_\_\_\_\_  
 equal to \_\_\_\_\_

**6** Tick the shapes you see.

TRIANGLE   
 RECTANGLE   
 CIRCLE   
 SQUARE

32      Monday    Tuesday    Wednesday    Thursday    Friday

In the upper corner of each page is the CYCLE number with the problem types for that day. These concepts are identified on the Student Tracking sheet as well.

Every number covers the same concept. Example: all question 4's are Numeracy (Place Value) and Question 6 always relates to Geometry.

Within each concept, the geometric shape identifies a CYCLE group. For example, all diamond shapes for #6 will have similar wording. This provides the repetition that builds memory. The specific component of the concept is repeated for three CYCLES and reviewed once more several CYCLES later.

NAME Jacob      **KIWI 1 Tracking**

**CYCLES**

3	4	4	5	5	4	4	5	5	4	5	5
1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3

**DAY 1**  
 Addition Facts  
 Numeracy (Whole Numbers)  
 Patterns  
 Measurement

**DAY 2**

## STUDENT TRACKING

A Student Tracking Sheet is found on the inside front cover of each workbook.

Tracking encourages **self-management**; it is a visual presentation of successes, weaknesses and improvements.

Again, teachers have their own styles and methods for marking work. We suggest, however, giving students responsibility for tracking so that they can watch their progress. See Fig. 2 for an example of a completed Tracking Sheet.

### Features of Tracking:

- CYCLE number
- Correct answers tracked
- Number of correct basic facts out of 3.
- Area of weakness – needs attention
- Total correct problems for the CYCLE.

NAME <u>Maria</u> Kiwi 1 TRACKING												
1	2	3	4	5	6	7	8	9	10	11	12	DAY 1
0	1	1	2	1	3	2	3	3	2	3	3	Basic Facts
1	1	1	1	1	1	1	1	1	1	1	1	Numeracy
3	3	3	3	3	3	3	3	3	3	3	3	Patterns
												Measurement
0	1	1	2	1	3	2	3	3	2	3	3	DAY 2
4	4	4	4	4	4	4	4	4	4	4	4	Basic Facts
5	5	5	5	5	5	5	5	5	5	5	5	Numeracy
6	6	6	6	6	6	6	6	6	6	6	6	Vocabulary / Symbols
												Geometry
1	1	1	2	1	3	2	3	3	2	3	3	DAY 3
7	7	7	7	7	7	7	7	7	7	7	7	Basic Facts
8	8	8	8	8	8	8	8	8	8	8	8	Numeracy
												Time / Money
0	1	1	2	1	3	2	3	3	2	3	3	DAY 4
9	9	9	9	9	9	9	9	9	9	9	9	Basic Facts
11	11	11	11	11	11	11	11	11	11	11	11	Numeracy
												Algebra
2	2	3	2	1	3	3	3	3	2	3	3	DAY 5
12	12	12	12	12	12	12	12	12	12	12	12	Basic Facts
13	13	13	13	13	13	13	13	13	13	13	13	Basic Operations
												Problem Solving
4	7	6	7	8	9	8	8	9	9	10	11	TOTAL CORRECT






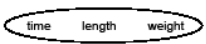


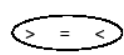
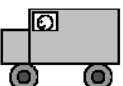
Topics from the NZ Curriculum

Fig. 2

## LEARNING INTENTIONS AND SAMPLE PROBLEMS

For quick reference use the Learning Intentions and Sample Problem grids in the Teacher Manual. These provide:

- Learning Intentions and National Standards
- Sample problem types for each geometric shape
- Numeracy Stages

HEADS UP Learning Intentions and Sample Problems – KIWI 1 Day 2			
LEARNING INTENTION	◊ ○ ∇ Number Knowledge I am learning to read and count whole numbers in ones and tens.	◊ ○ ∇ Vocabulary I am reinforcing my knowledge of vocabulary, symbols and abbreviations. ○ Measurement I am learning to use appropriate units and devices to measure time.	◊ ○ ∇ Shapes I am learning to identify and describe plane shapes.
Cycles	#4 Numeracy (Place Value)	#5 Vocabulary / Symbols	#6 Geometry
1	How many crayons? 	 The star is _____ the moon. over behind	Colour the SQUARES. 
2			
3			
10			
E	CA AC EA AA AM		
4	How many pencils? 	A ruler  measures ____. time length weight	Colour the TRIANGLES. 
5			
6			
11			
E	CA AC EA AA AM		
7		Fill in the blanks. less than ____ greater than ____ equal to ____ 	Tick the shapes you see.  <input type="checkbox"/> triangle <input type="checkbox"/> rectangle <input type="checkbox"/> circle <input type="checkbox"/> square
8			
9			
12			
E	CA AC EA AA AM		

## GLOSSARY

Each book of **HEADS UP maths workouts** includes a GLOSSARY of mathematical terms in case students forget the meaning of one of the maths words in the exercises. Words in capital letters throughout the book will be found in the Glossary.

## RATIONALE

*It is widely known in educational circles, and supported by brain-based learning theory, that for the brain to retain some forms of information, skills, and concepts, regular review and practice are necessary.*

*Students may demonstrate proficiency immediately after learning a strategy, skill or concept, however, unless the learning is revisited regularly the learning can be lost.*

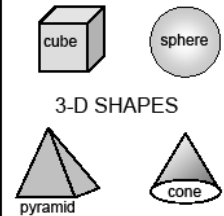
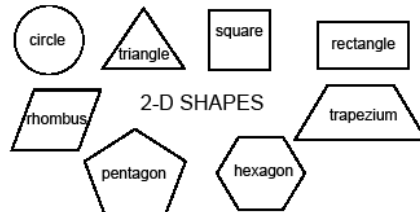
*HEADS UP is a tool to help students retain memory through regular, cyclic review.*

GLOSSARY	
<p><b>bar graph</b></p>	<p><b>fraction</b></p>
<p><b>corner</b></p>	<p><b>halves</b></p>
<p><b>equal parts</b></p>	<p><b>heavier</b></p>
<p><b>even number</b></p> <p>6 is an <u>even number</u>.</p> <p>Every item has a partner.</p>	<p><b>hour hand</b></p> <p>shorter hand</p>

## ORDINAL NUMBERS

first	1 <sup>st</sup>	seventh	7 <sup>th</sup>
second	2 <sup>nd</sup>	eighth	8 <sup>th</sup>
third	3 <sup>rd</sup>	ninth	9 <sup>th</sup>
fourth	4 <sup>th</sup>	tenth	10 <sup>th</sup>
fifth	5 <sup>th</sup>	eleventh	11 <sup>th</sup>
sixth	6 <sup>th</sup>	twelfth	12 <sup>th</sup>

greater than	>	SYMBOLS
less than	<	
equal to	=	
plus	+	addition
minus	-	subtraction
cents	¢	
dollars	\$	



below / above



The boat is **BELOW** the bridge.  
The train is **ABOVE** the bridge.

over / under



The kite is **OVER** the tree.  
The flower is **UNDER** the tree.

behind / in front of



The ball is **BEHIND** the bat.  
The bat is **IN FRONT OF** the ball.

### Ideas and suggestions

- *Meet with parents at the beginning of the year to explain the HEADS UP system.*
- *All problems have been created to be solved without the use of calculators.*
- *Create an end-of-term certificate for recognition of accomplishment.*