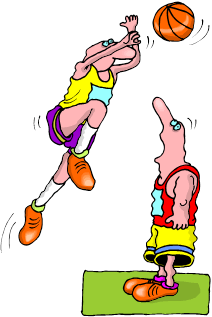
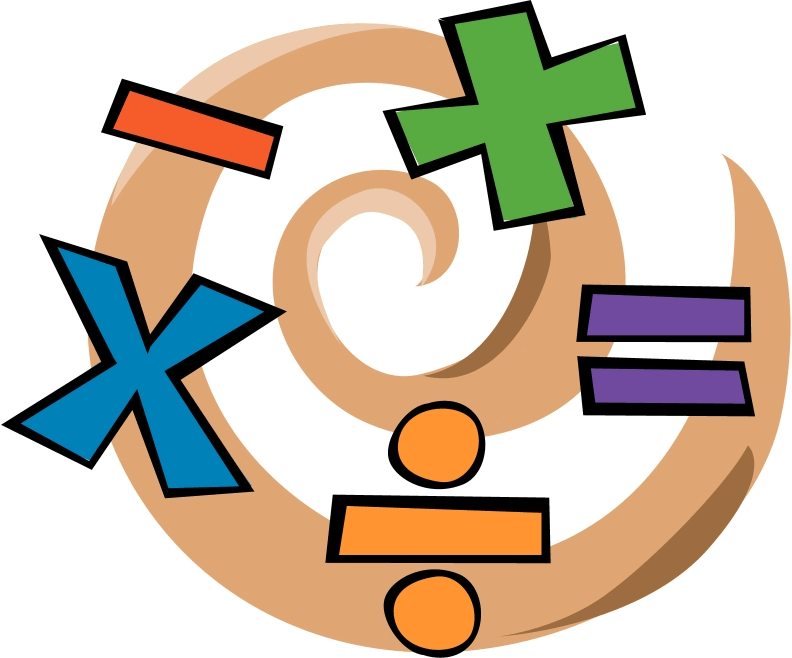
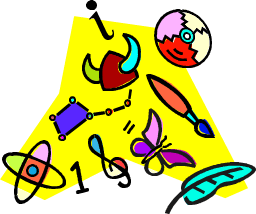
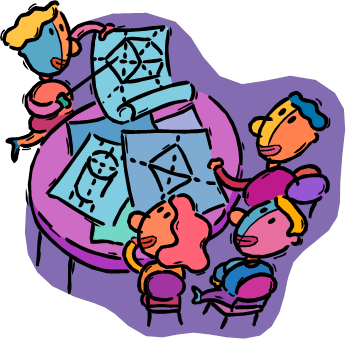
**Mathematics**

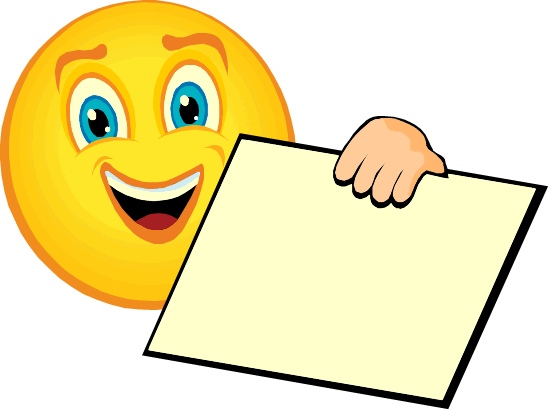


**How can computation**

**strategies help me solve problems?**

**Mathematics**

**Introduction**



**Welcome!**

**Welcome**

The theme is ***Maths skills for your world****.*

Enjoy your learning

|  |  |
| --- | --- |
| **What you will need** | * Pen and paper. You will also need a protractor. * A computer is useful if you have one, because there are interactives in some lessons. * A calculator is sometimes used and is useful to check your answers. |
| **The activities** | * Skills exercises * Investigations * Interactives and games * A skills test |
| **When to use your calculator** | Most of the time you **won’t** need your calculator.  The maths activities develop skills; ways of working with numbers, mental arithmetic, estimating and using times tables.  Only use your calculator when it’s part of the activity. |
| **Asking for help…** | There may be times when you are not sure about an example or an exercise.  When this happens, ask for help from your supervisor or parents. |

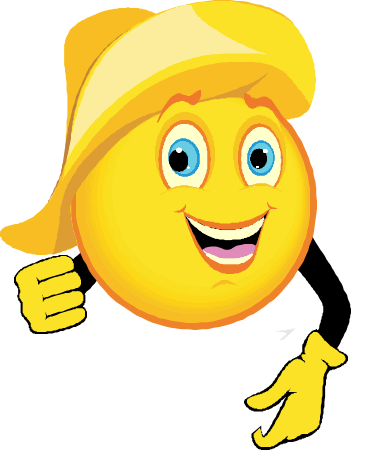
**Mathematics**

|  |
| --- |
| The activities will help us to answer the question:  Description: C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\essQ2.gif  **"How can computation strategies help me?"**  **Learning Intentions:**     * Revise some number skills:   + - Count by eights. Recall number facts and identify numbers from clues.     - Revise mental strategies for multiplying and dividing.     - Investigate multiplication using areas, revise skills of long multiplication, and solve written problems. * Revise place value, addition and subtraction of larger numbers:   + - Investigate examples of numbers in hundreds of thousands.     - Explore and compare strategies for adding and subtracting.     - Revise addition and subtraction of large numbers in practical examples. |

**Mathematics -**

|  |  |
| --- | --- |
| **Learning Tasks** | |
| **Task 1** | * Revise counting by eights. * Recall multiples. Relate division facts to multiplication facts. * Identify unknown numbers from clues. |
| **Task 2** | * Review long multiplication skills, and estimating answers. * Explore multiplication using areas. |
| **Task 3 and 4** | * S solve some problems. |
| **Task 5** | * Do a test. |
| **Task 6** | * Revise the place value of numbers in hundreds of thousands. |
| **Task 7** | * Explore strategies for adding and subtracting different amounts. * Use number line jumps and identify unknown numbers from clues. |
| **Task 8** | * Review skills in adding large numbers, and estimating answers. |
| **Task 9** | * Review skills in large numbers, and estimating answers. * Apply your skills to solve written questions. |
| **Task 10** | * Reflect on what you’ve learned. * Do a test. |

# 1 Number skills review: multiples and factors



To do Maths we need number skills.

Some of these skills include **skip counting**.

Knowing how to **skip count** helps you to do a lot of calculations,

especially **multiplying** and **dividing**,

**Skip counting** also helps you to remember your multiplication tables.

Let’s revise counting by eights.

|  |  |
| --- | --- |
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| **Activity 1: Review counting by eights** |
| reporter1 |

Circle every eighth number on the number grid.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|  | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |  |
|  | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |  |
|  | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |  |
|  | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |  |
|  | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |  |
|  | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |  |
|  | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |  |
|  | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |  |

1. Practise counting by eights…

|  |  |  |
| --- | --- | --- |
| up to 40 | up to 80 | up to 96 |

2. Practise counting by eights backwards…

|  |  |  |
| --- | --- | --- |
| from 40 | from 80 | from 96 |

Practise your counting out loud; walk as you count; ask your supervisor or buddy to hear you.

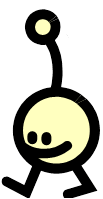
**LISTEN** to the counting patterns.

A counting tip: 8 equals 10 minus 2

|  |  |
| --- | --- |
| To count up by 8  Add 10 and take away 2  **16** + 10 → 26 – 2 → **24** | To count down by 8  Take away 10 and add 2  **84** – 10 → 74 + 2 → **76** |



# Mixed tables practice…



Knowing your multiplication tables will help you solve **multiplication,** **division** and **fraction** problems much more easily.

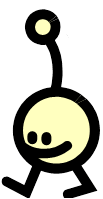
Today we revise 3, 4, 6 and 8 multiplication tables.

Invest a lot of time in becoming confident, quick and accurate with your multiplication tables.

Complete these tables:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3 times tables |  | 4 times tables |  | 6 times tables |  | 8 times tables |
| 1 × 3 = \_\_\_\_\_  2 × 3 = \_\_\_\_\_  3 × 3 = \_\_\_\_\_  4 × 3 = \_\_\_\_\_  5 × 3 = \_\_\_\_\_  6 × 3 = \_\_\_\_\_  7 × 3 = \_\_\_\_\_  8 × 3 = \_\_\_\_\_  9 × 3 = \_\_\_\_\_  10 × 3 = \_\_\_\_\_  11 × 3 = \_\_\_\_\_  12 × 3 = \_\_\_\_\_ |  | 1 × 4 = \_\_\_\_\_  2 × 4 = \_\_\_\_\_  3 × 4 = \_\_\_\_\_  4 × 4 = \_\_\_\_\_  5 × 4 = \_\_\_\_\_  6 × 4 = \_\_\_\_\_  7 × 4 = \_\_\_\_\_  8 × 4 = \_\_\_\_\_  9 × 4 = \_\_\_\_\_  10 × 4 = \_\_\_\_\_  11 × 4 = \_\_\_\_\_  12 × 4 = \_\_\_\_\_ |  | 1 × 6 = \_\_\_\_\_  2 × 6 = \_\_\_\_\_  3 × 6 = \_\_\_\_\_  4 × 6 = \_\_\_\_\_  5 × 6 = \_\_\_\_\_  6 × 6 = \_\_\_\_\_  7 × 6 = \_\_\_\_\_  8 × 6 = \_\_\_\_\_  9 × 6 = \_\_\_\_\_  10 × 6 = \_\_\_\_\_  11 × 6 = \_\_\_\_\_  12 × 6 = \_\_\_\_\_ |  | 1 × 8 = \_\_\_\_\_  2 × 8 = \_\_\_\_\_  3 × 8 = \_\_\_\_\_  4 × 8 = \_\_\_\_\_  5 × 8 = \_\_\_\_\_  6 × 8 = \_\_\_\_\_  7 × 8 = \_\_\_\_\_  8 × 8 = \_\_\_\_\_  9 × 8 = \_\_\_\_\_  10 × 8 = \_\_\_\_\_  11 × 8 = \_\_\_\_\_  12 × 8 = \_\_\_\_\_ |

# Number facts recall



Recalling number facts is a key skill in arithmetic. Use your knowledge of times tables in this exercise.

|  |  |
| --- | --- |
| **C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\muscles.gif** |  |
| **Activity 2: Number facts recall** |
|  |

**Question 1** Find the **multiples.**

**Multiples** are the answers you get when you multiply 2 **factors:**

Think about your **8 times** tables, where **8** is always a **factor**.

What are the **multiples of 8**?

8, 16, 24, 32, 38, 40, 48, 56, 64, 72, 80, 88, 96 … and so on.

Quick recall…. quickly find the missing **multiples**. (A **multiple** is an answer to a **multiplication** table.

Time how long it takes you to find the **multiples** in the circles below.

|  |  |  |
| --- | --- | --- |
| 2  7  5  9  3  8  4  6 | 7  4  6  9  3  8  2  5 | 7  8  3  11  9  6  4  5 |
| ……………. seconds | ……………. seconds | ……………. seconds |

**Question 2** Counting by multiples.

Counting up by **multiples**…

|  |  |
| --- | --- |
| 6 | 18 |
| 4 | 24 |

Counting backwards by **multiples** of …

|  |  |
| --- | --- |
| 105 | 100  90 |
| 80 | 72  48 |

**Question 3** Factors and division facts.

|  |
| --- |
| A multiplication fact tells us a few things:  For example, 8 × 3 = 24  … tells us… two **factors** of 24 are 8 and 3  two **division facts** for 24 are 24 ÷ 8 = 3  24 ÷ 3 = 8 |

Use your multiplication tables knowledge to complete the missing parts of the chart. The first example shows you how.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Two **factors**. | A **multiplication** fact. | Two **division** facts. | |
| 54 | 9 and 6 | 9 × 6 = 54 | 54 ÷ 9 = 6 | 54 ÷ 6 = 9 |
| 36 |  |  | 36 ÷ 9 = 4 |  |
| 48 |  | 6 × 8 = 48 |  |  |
| 40 |  |  |  | 40 ÷ 8 = 5 |
| 32 |  |  | 32 ÷ 4 = 8 |  |
| 27 |  |  |  | 27 ÷ 3 = 9 |
| 66 | 6 and 11 |  |  |  |
| 50 |  |  |  | 50 ÷ 5 = 10 |
| 72 |  |  | 72 ÷ 9 = 8 |  |
| 90 |  | 9 × 10 = 90 |  |  |

|  |  |
| --- | --- |
| Description: C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\essQ.gif |  |
| **Who am I? Find the unknown numbers** |
|  |

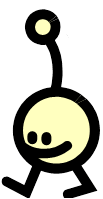
|  |  |  |
| --- | --- | --- |
| Who am I?  I am a **multiple** of 6, and also a **multiple** of 3.  I am less than 50.  My units digit is one more than my tens digit.  I am ………………………………………… |  | Who am I?  I am an even number between 50 and 100.  I am a **multiple** of 8.  My tens digit is 5 more than my ones digit.  I am ………………………………………… |

Just for fun………find the numbers hidden in this picture.

[](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=NRGgpdKtGTpfIM&tbnid=jcyVeVn3LJNs0M:&ved=0CAUQjRw&url=https://itunes.apple.com/us/app/mystery-numbers-free-hidden/id498461713?mt=8&ei=N-4sUtKBOoL6kAXdwYCwCA&bvm=bv.51773540,d.aGc&psig=AFQjCNHO1KjdIhnfg8I7F5xTJyEYuBu2ew&ust=1378762598981309)

# What’s my strategy…

# multiply by doubling and halving



We can use the ***double and halve*** strategy to get to an easier multiplication fact.

**Double** and **halve** means we **double one number** and **halve the other.**

.

|  |
| --- |
| 15 × 18 **Double 15** and **halve 18**  30 × 9 This is an **easier fact** to work with.  270 |

|  |  |
| --- | --- |
| Description: j0229369 |  |
| **Activity 1: Doubling and halving** |
|  |

**Question 1** Practise **doubling.**

Double 32 → double (30 + 2) → double 30 + double 2 → 60 + 4 = 64

Double 235 → double (200 + 30 + 5)

→ double 200 + double 30 + double 5 → 400 + 60 + 10 = 470

Look for shorter ways to solve the problems:

Double 235 → double (230 + 5) → double 230 + double 5

→ 460 + 10 = 470

|  |  |  |
| --- | --- | --- |
| **(a)** Double 43 |  | **(b)** Double 29 |

|  |  |  |
| --- | --- | --- |
| **(c)** Double 78 |  | **(d)** Double 52 |

|  |  |  |
| --- | --- | --- |
| **(e)** Double 124 |  | **(f)** Double 308 |

|  |  |  |
| --- | --- | --- |
| **(g)** Double 326 |  | **(h)** Double 147 |

**Question 2** Practise **halving**.

Halve 146 → halve (140 + 6) → halve 140 + halve 6 → 70 + 3 = 73

|  |  |  |
| --- | --- | --- |
| **(a)** Halve 68 |  | **(b)** Halve 82 |

|  |  |  |
| --- | --- | --- |
| **(c)** Halve 164 |  | **(d)** Halve 436 |

|  |  |  |
| --- | --- | --- |
| **(e)** Halve 526 |  | **(f)** Halve 348 |

|  |  |  |
| --- | --- | --- |
| **(g)** Halve 136 |  | **(h)** Halve 122 |

**Question 3** Solve these multiplications with the **double** and **halve** strategy.

|  |  |  |
| --- | --- | --- |
| **(a)**  25 × 16 = 50 × ………  = ………………. |  | **(b)**  15 × 24 = 30 × ………  = ………………. |

|  |  |  |
| --- | --- | --- |
| **(c)**  55 × 18 = ……… × ………  = ………………. |  | **(d)**  35 × 120 = ……… × ………  = ………………. |

|  |  |  |
| --- | --- | --- |
| **€**  45 × 14 = ……… × ………  = ………………. |  | **(f)**  5 × 56 = ……… × ………  = ………………. |

|  |  |  |
| --- | --- | --- |
| **(g)**  25 × 40 = ……… × ………  = ……………….. |  | **(h)**  15 × 80 = ……… × ………  = ………………. |

# What’s my strategy…

# multiply by rounding up



When multiplying we can **round up** to an easier number, then **adjust** the answer. Let’s see how…

|  |
| --- |
| **39** × 4  **(40 – 1)** × 4 Change **39** into **40 – 1**  **40 × 4 – 1 × 4\*** **40** is an easier number to work with.  160 – 4  156 |

|  |
| --- |
| 27 × 11  (30 – 3) × 11 Change **27** into **30 – 3**  **30 × 11 – 3 × 11\*** **30** is an easier number to work with.  330 – 33  330 – 30 – 3  300 – 3  297 |

\*We are using the **distributive law** of mathematics to **regroup** (40 – 1) × 4 and (30 – 3) ×11. Both parts of the equation, (40 & 1) and (30 & 3), need to be multiplied: by 4 in the first example and 11 in the second example

|  |  |
| --- | --- |
| Description: j0229369 |  |
| **Activity 2: Rounding strategy** |
|  |

Use the rounding up strategy to complete these problems.

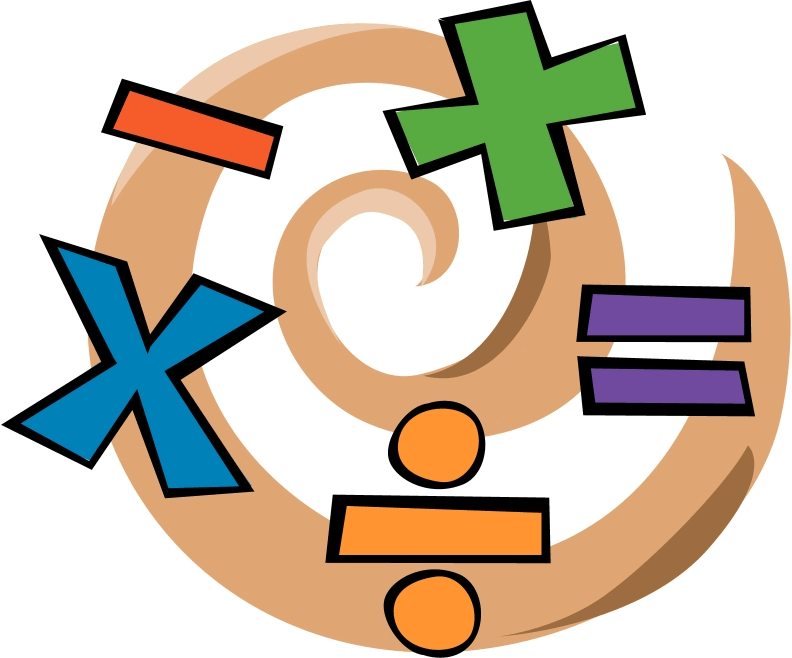
|  |  |  |
| --- | --- | --- |
| **(a)**  29 × 4 = (30 – ………) × ………  = 30 × 4 – ………  = ……………. |  | **(b)**  38 × 6 = (40 – ………) × ………  = 40 × 6 – ……………..  = ……………. |

|  |  |  |
| --- | --- | --- |
| **(c)**  46 × 8 = (50 – ………) × ………  = 50 × 8 – ………  = ………………. |  | **(d)**  39 × 11 = (40 – ………) × ………  = ……… – ………  = ……………….. |

|  |  |  |
| --- | --- | --- |
| **€**  47 × 5 = (50 – ………) × ………  = ……… – ………  = …………………. |  | **(f)**  68 × 8 = (70 – ………) × ………  = ……… – ………  = ………………… |

|  |  |  |
| --- | --- | --- |
| **(g)**  49 × 5 |  | **(h)**  56 × 4 |

|  |  |  |
| --- | --- | --- |
| **(i)**  37 × 11 |  | **(j)**  79 × 5 |



# Long multiplication review

A lot of maths problems depend on multiplication skills.

In long multiplication we multiply each place value separately.

Then add up the separate parts. Let’s revise how…

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Example 1** 246 × 3 | | | | |  | **Example 2** 2 142 × 4 | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | **H** | **T** | **U** |  |  |  | **Th** | **H** | **T** | **U** |  |
|  | 2 | 4 | 6 | ← 200 + 40 + 6 |  |  | 2 | 1 | 4 | 2 | ← 2000 + 100 + 40 + 2 |
| × |  |  | 3 |  |  | × |  |  |  | 4 |  |
|  |  | 1 | 8 | ← 3 × 6 |  |  |  |  |  | 8 | ← 4 × 2 |
|  | 1 | 2 | 0 | ← 3 × 40 |  |  |  | 1 | 6 | 0 | ← 4 × 40 |
| + | 6 | 0 | 0 | ← 3 × 200 |  |  |  | 4 | 0 | 0 | ← 4 × 100 |
|  | 7 | 3 | 8 |  |  | + | 8 | 0 | 0 | 0 | ← 4 × 2000 |
|  |  |  |  |  |  |  | 8 | 5 | 6 | 8 |  |
|  | | | | |  |  | | | | | |
| Answer check:  246 is about 250  250 × 3 = 750  This is close to our answer. | | | | |  | Answer check:  2 142 is about 2 000  2 000 × 4 = 8 000  This is close to our answer. | | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Example 3** 3 123 × 5 |  | **T-Th** | **Th** | **H** | **T** | **U** |  |
|  | |  | 3 | 1 | 2 | 3 | ← 3000 + 100 + 20 + 3 |
| Answer check:  3 123 is about 3 000  3 000 × 5 = 15 000  This is close to our answer | × |  |  |  |  | 5 |  |
|  |  |  |  | 1 | 5 | ← 5 × 3 |
|  |  |  | 1 | 0 | 0 | ← 5 × 20 |
|  |  |  | 5 | 0 | 0 | ← 5 × 100 |
| + | 1 | 5 | 0 | 0 | 0 | ← 5 × 3000 |
|  | 1 | 5 | 6 | 1 | 5 |  |
|  | | | | | | | |

|  |  |
| --- | --- |
| Description: j0229369 |  |
| **Activity 2: Long multiplication practice** |
|  |

**Question 1** Complete the steps in these long multiplications.

Check your answers with an approximation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  |  | **Th** | **H** | **T** | **U** |  | **(b)** |  |  | **Th** | **H** | **T** | **U** |
|  |  |  |  | 4 | 4 | 6 |  |  |  |  |  | 7 | 5 | 3 |
|  |  | × |  |  |  | 3 |  |  |  | × |  |  |  | 5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | + |  |  |  |  |  |  |  | + |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  |  | Answer check: | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(c)** |  |  | **Th** | **H** | **T** | **U** |  | **(d)** |  |  | **Th** | **H** | **T** | **U** |
|  |  |  |  | 5 | 2 | 9 |  |  |  |  |  | 3 | 6 | 4 |
|  |  | × |  |  |  | 4 |  |  |  | × |  |  |  | 8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | + |  |  |  |  |  |  |  | + |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  | Answer check: | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(e)** |  |  | **Th** | **H** | **T** | **U** |  | **(f)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 2 | 1 | 7 | 5 |  |  |  |  | 4 | 0 | 5 | 9 |
|  |  | × |  |  |  | 3 |  |  | × |  |  |  |  | 6 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | + |  |  |  |  |  |  | + |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  | Answer check: | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(g)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(h)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 3 | 1 | 7 | 5 |  |  |  |  | 6 | 2 | 3 | 7 |
|  | × |  |  |  |  | 8 |  |  | × |  |  |  |  | 5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | + |  |  |  |  |  |  |  | + |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  | Answer check: | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(i)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(j)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 2 | 1 | 7 | 4 |  |  |  |  | 5 | 1 | 4 | 2 |
|  | × |  |  |  |  | 2 |  |  | × |  |  |  |  | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  | Answer check: | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(k)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(l)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 1 | 2 | 6 | 5 |  |  |  |  | 6 | 4 | 6 | 1 |
|  | × |  |  |  |  | 3 |  |  | × |  |  |  |  | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: | | | | | |  |  | Answer check: | | | | | |

**Question 2** Apply your skills.

Set up a multiplication to solve each problem.

|  |  |
| --- | --- |
| **(a)** | The strawberry farm fills 3 220 punnets of strawberries a day. How many punnets are filled over 6 days? |
| **(b)** | There are 4 museums that collect pictures for their history section. Over a month, each museum collected an average of 12 560 pictures each. How many pictures were collected in total? |
| **(c)** | There are 5 giant jars of marbles on display at a toy store. Each jar contains 13 450 marbles. How many marbles are there in all? |

1. (b) (c)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **T-Th** | **Th** | **H** | **T** | **U** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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# Multiplying with areas

So far we’ve seen how to break a multiplication down into separate parts. Let’s see how this is done with areas.

|  |  |
| --- | --- |
| C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\module3\farm1.gif  Farmers Smith’s paddock is 38 metres long and 27 metres wide.  What area does it cover? | 38  27 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 30  8  20  7  20 × 30  20 × 8  7 × 30  7 × 8 | | Break down the area into smaller sections.  Expand **38** into **30 + 8**  Expand **27** into **20 + 7**  This gives four smaller areas that are easier to work out. | | | | | |
| 20 × 30 = 600  20 × 8 = 160  7 × 30 = 210  7 × 8 = 56 |  | | 760 |  | |
|  | |  |  | |
| 266 |
|  | |  |  | |  | |
|  | The total area is: | |  | 1 026 m2 | | |  |

|  |  |
| --- | --- |
| Description: j0229369 |  |
| **Activity 3: Multiply with areas** |
|  |

**Question 1** Work out each smaller area, then add up the areas.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **(a)** | 40  2  10  6 |  | ……………..  ……………..  ……………..  + ……………. |  |
|  |  | **42 × 16** = | ……………. |  |
|  |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | |  |  |
| **(b)** | | 30  7  20  3 | |  | ……………..  ……………..  ……………..  + ……………. |  |
|  | | **37 × 23** = | ……………. |  |
|  | |  | |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **(c)** | 50  3  20  6 |  | ……………..  ……………..  ……………..  + ……………. |  |
|  | 53 × 26 = | ……………. |  |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **(b)** | 20  8  40  5 |  | ……………..  ……………..  ……………..  + ……………. |  |
|  | 28 × 45 = | ……………. |  |
|  |  |  |  |  |

**Question 2** Expand and multiply.

Instead of a diagram use an **expander box**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Expander Box | |  |  |
|  | 46 × 32  (40 + 6) × (30 + 2) | 40 × 30 | 40 × 2 | 1 200  80  180  12 |  |
| 6 × 30 | 6 × 2 |
|  |  |  |  |  |
|  |  |  | 46 × 32 = | 1 472 |  |

Fill in the missing parts of these questions.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  | | Expander Box | |  |  |
|  | **51 × 65**  ( ………. + ……….) × (………. + ……….) | ………. × ………. | | ………. × ………. | …….….….  ………..….  …….……..  …….……. |  |
| ………. × ………. | | ………. × ………. |
|  |  | |  |  |  |
|  |  | |  | **51 × 65** = | …………. |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(b)** |  | Expander Box | |  |  |
|  | **47 × 25**  ( ………. + ……….) × (………. + ……….) | ………. × ………. | ………. × ………. | …………….  …………….  …………….  ……………. |  |
| ………. × ………. | ………. × ………. |
|  |  |  |  |  |
|  |  |  | **47 × 25** = | …………. |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(c)** |  | Expander Box | |  |  |
|  | **28 × 64**  ( ………. + ……….) ×  (………. + ……….) | ………. × ………. | ……….. × ………. | ……….….  ……….….  …………..  …….……. |  |
| ………. × ………. | ……….× ………. |
|  |  |  |  |  |
|  |  |  | **28 × 64** = | ………….. |  |

**Challenge problems**

**Problem 1 Factor Blocks.**

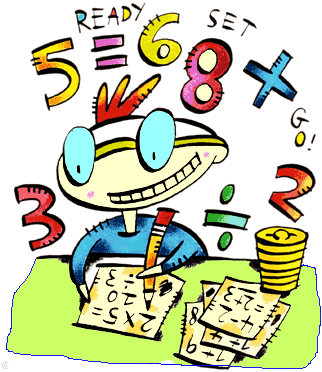
The numbers below multiply to give the numbers above.

Use multiplication to find the missing numbers:

|  |  |  |
| --- | --- | --- |
| 6  9  2 | 128  16  4 | 54  18  3 |
| Which one above has more than one answer? | | |

|  |  |
| --- | --- |
| **Problem 2 The garden path**. | |
| This garden has two square lawns separated by a path.  Each lawn is 14 metres wide and 14 metres long. The garden path is 2 metres wide. | |
| **(a)** | Work out the measurements shown in the diagram, and write them in the boxes given. |
| **(b)** | Work out the area of both lawns combined. |
| **(c)** | Use your answer to part (b) to help you to work out the area of the path surrounding the lawn? |

|  |
| --- |
| **Test**: |

* This test will enable your supervisor to see how well you have understood the work this week and whether you need any additional help in a particular area.

# Please complete the exercises on these pages. Show your working out wherever possible.

# You can use your notes to help you with these exercises, but no other assistance.

**Activity 1 Number facts and skills**

**Question 1 Multiples and number facts**

**(a)** Counting by multiples - counting up…

|  |  |
| --- | --- |
| 8 | 48 |

Counting down…

|  |  |
| --- | --- |
| 84 | 72 |

**(b)** Use your multiplication tables knowledge to fill in the missing parts of the table.

The first one is done for you.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Two factors. | A multiplication fact. | Two division facts. | |
| 54 | 9 and 6 | 9 × 6 = 54 | 54 ÷ 9 = 6 | 54 ÷ 6 = 9 |
| 18 |  |  |  | 18 ÷ 2 = 9 |
| 42 | 7 and 6 |  |  |  |
| 80 |  | 8 × 10 = 80 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **(c)** | Description: C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\essQ.gif | Who am I?  I am a multiple of 4, and also a multiple of 8.  I am less than 100.  My units digit is twice my tens digit.  I am ………………………………………… |  |

**Question 2 Multiplication strategies**

**(a)** Solve these multiplications with the ‘**double and halve’** strategy.

|  |  |  |
| --- | --- | --- |
| 5 × 90 = |  | 35 × 16 = |

**(c)** Use the ‘**rounding up strategy’** to complete these problems

|  |  |  |
| --- | --- | --- |
| 38 × 6 = (40 – ………) × ………  = 40 × 6 – ………  = ……………. |  | 27 × 8 = |

**Activity 2 Multiplication skills**

**Question 1**

Complete the steps in these long multiplications.

Check your answers with an approximation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  | T-Th | Th | H | T | U |  | **(b)** |  | T-Th | Th | H | T | U |
|  |  |  | 5 | 4 | 0 | 7 |  |  |  | 1 | 0 | 5 | 2 | 9 |
|  | × |  |  |  |  | 6 |  |  | × |  |  |  |  | 8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | + |  |  |  |  |  |  |  | + |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

**Question 2 Apply your skills.**

|  |  |
| --- | --- |
|  | Set up a **multiplication** to solve this problem.  The local school spends an average of **$12 850** a year on equipment. How much would they have been spent after **6 years**? |
|  |  |

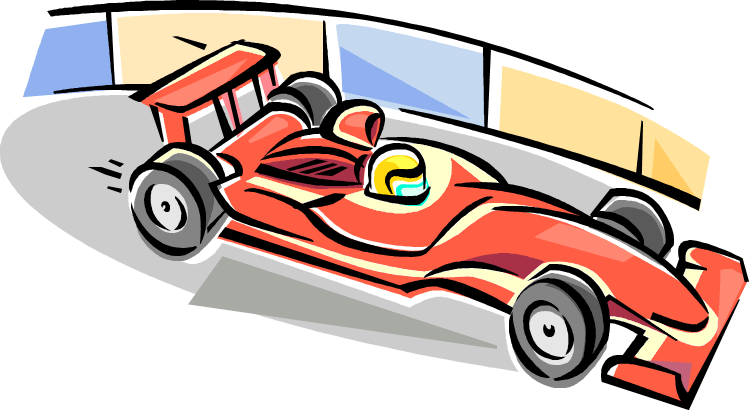
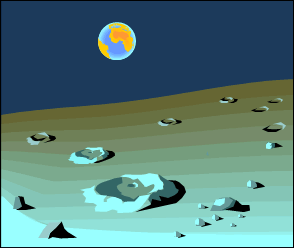
**Question 3 Multiplication by expanding numbers**

Fill in the missing parts of this question by expanding each number.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Expander Box | |  |  |
| **17 × 85**  ( ………. + ……….) ×  (………. + ……….) | | ………. × ………. | ………. × ………. | ………….  ………….  ………….  …………. |  |
| ………. × ………. | ………. × ………. |
|  |  |  |  |  |
|  |  |  | **17 × 85** = | …………. |  |

# What’s in a number?

# ….the place value of hundreds of thousands



Number of heavy trucks on the road

709 300

Number of motor cycles on the road

322 100

Distance from Earth to the Moon

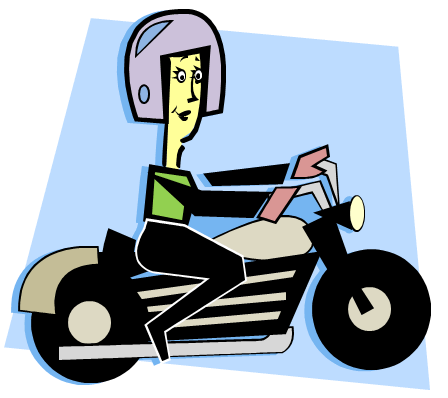
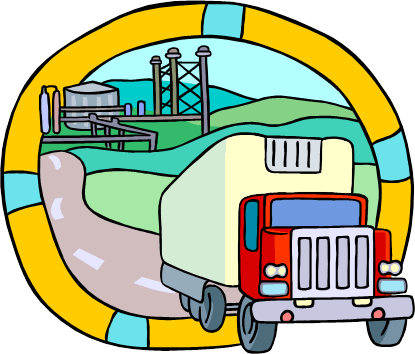
384 400 km

Population of Fiji

876 230

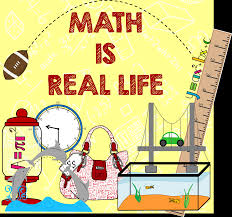
Australian Grand Prix crowd

313 700



|  |  |
| --- | --- |
| j0229369 |  |
| **Activity 1: Hundreds of thousands** |
|  |

|  |
| --- |
| See if you can find a real life example of one or two things measured in hundreds of thousands.  Useful places to look are newspapers or the internet. |



# What’s in a number?



In every number each digit has a different value.

**Example 1** Expanding a number.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | There were 114 930 people at the Grand Prix. | | | |
|  |  | 114 930 is made up of | |  |
|  |  | 1 hundred thousand  1 ten thousand  4 thousands  9 hundreds  3 tens  no ones | 100 000  10 000  4 000  900  30  0 |  |
|  |  |  |
|  |  |  |  |  |

**Example 2** Numbers in words and digits.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | |
|  | Three hundred and fifteen thousand, eight hundred and seven. | | | | | | | | | | | | |  |
|  | As it is written… | | | | |  |  |  | Breaking it down further… | | | | |  |
|  | 315 thousand  8 hundred  7 ones | | 315 000  800  7 | | |  |  |  | 3 hundred thousand  1 ten thousand  5 thousand  8 hundreds  0 tens  7 ones | | | 300 000  10 000  5 000  800  0  7 | |  |
|  | | | | | | |  |  |  |
|  | |  | |  |  | |  | The number in digits 315 807 | | | | | | |
|  | |  | |  |  | |  |  | |  |  | |  | |

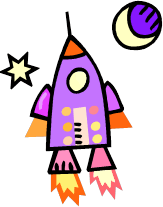
|  |  |
| --- | --- |
| C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\exerrcise1.gif | **Activity 2**  **Warm-up activity… What’s in a number?** |

|  |  |  |
| --- | --- | --- |
| What is the value of the 7 in these numbers?  21**7** 085  3**7**2 146  **7**15 2**7**8  41**7** 25**7**  61**7** 2**7**6 |  | What is the value of the digits in bold?  4**6**1 093  **2**16 5**2**7  8**1**2 45**9**  31**6** 582  **8**16 4**8**3 |

|  |  |
| --- | --- |
| C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\exerrcise1.gif | **Activity 2 continued…**  **Warm-up activity… What’s in a number?** |

Fill in the missing parts of the table below. Expand the numbers and write them in words. The first one is done for you.

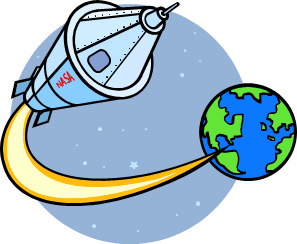
|  |  |
| --- | --- |
| **Digits:**  216 507 | **Expanded:** 200 000 + 10 000 + 6 000 + 500 + 7 |
| **In words:** *two hundred and sixteen thousand, five hundred and seven.* | |
| 376 214 | **?** |
| ***?*** | |
|  | |
| **?** | **?** |
| One hundred and twenty-four thousand three hundred and eighty five. | |
|  | |
| **?** | 500 000 + 9 000 + 300 + 80 + 4 |
| **?** | |
|  | |
| 937 148 | **?** |
| **?** | |
|  | |
| **?** | 200 000 + 10 000 + 400 + 70 + 2 |
|  | |
|  | |
| **?** | ? |
| Eight hundred and nineteen thousand three hundred and eight | |
|  | |



# What’s in a number?

# ….more or less…

|  |  |
| --- | --- |
| The distance from the Earth to the Moon is **384 400** kilometres | |
| If the space craft travelled  10 000 km more | 384 400 add one to the ten thousands place |
| 3**9**4 400  ↑  8 ten thousand + 1 ten thousand  9 ten thousand |
|  | |
| If it travelled 3 000 km less | 384 400 Take away three from the thousands place |
| 38**1** 400  ↑  4 thousand − 3 thousand  1 thousand |
|  | |



|  |  |
| --- | --- |
| ***Description: j0229369*** |  |
| **Activity 1: More or less** |
|  |

**Question 1** Distances in space travel are vast.

Work out the new distances travelled.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 317 262 km | |  | 160 684 km | |
| 20 000 km more | 5 000 km less |  | 2 000 km more | 40 000 km less |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 612 084 km | |  | 184 612 km | |
| 30 000 km more | 10 000 km less |  | 30 000 km more | 3 000 km less |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 718 063 km | |  | 672 800 km | |
| 50 000 km more | 200 000 km less |  | 200 000 km more | 50 000 km less |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 817 865 km | |  | 619 382 km | |
| 20 000 km more | 7 000 km less |  | 30 000 km more | 600 000 km less |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 634 850 km | |  | 849 608 km | |
| 20 000 km more | 100 000 km less |  | 40 000 km more | 200 000 km less |

**Question 2** Add or subtract to change the number.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Change **537 200** to 507 200 by taking away one number.  As a number sentence: 507 200  537 200 – 30 000 = 507 200 |  | 537 200  – 30 000 |  |
|  | 507 200 |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(a)** | Change 650 360 to 50 360 by taking away one number.  Complete the number sentence:  650 360 – ……………. = 50 360 | Working column | | |
|  |  | 650 360  – |  |
|  |  | 50 360 |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(b)** | Change 840 170 to 800 170 by taking away one number.  Complete the number sentence:  840 170 – ……………. = 800 170 | Working column | | |
|  |  | 840 170  – |  |
|  |  | 800 170 |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(c)** | Change 619 200 to 600 200 by taking away one number.  Complete the number sentence:  619 200 – ……………. = 600 200 | Working column | | |
|  |  | 619 200  – |  |
|  |  | 600 200 |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(d)** | Change 586 500 to 500 500 by taking away one number.  Complete the number sentence:  586 500 – ……………. = 500 500 | Working column | | |
|  |  | 586 500  – |  |
|  |  | 500 500 |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(e)** | Change 784 150 to 584 150 by taking away one number.  Complete the number sentence:  784 150 – ……………. = 584 150 | Working column | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(f)** | Change 375 260 to 325 260 by taking away one number.  Complete the number sentence:  375 260 – ……………. = 325 260 | Working column | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(g)** | Change 613 500 to 203 500 by taking away one number.  Complete the number sentence:  613 500 – ……………. = 203 500 | Working column | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(h)** | Change 816 040 to 506 040 by taking away one number.  Complete the number sentence:  816 040 – ……………. = 506 040 | Working column | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Question 3**  Counting on…

**Counting on** is a way of finding the **difference** between two numbers.

**Example 1** Change 9 980 to 10 180 by counting on.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 10 180  10 000  180  20  9 980 | 20  + 180 |  | * Start at 9 980 * Jump by 20 to reach 10 000 * Jump by 180 to reach 10 180 * The total jump is 20 + 180 = 200 |
| 200 |  |
| 9 980 + 200 = 10 180 |  |  |

**Example 2** Change 99 975 to 100 250 by counting on.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 100 250  100 000  250  25  99 975 | 25  + 250 |  | * Start at 99 975 * Jump by 25 to reach 100 000 * Jump by 250 to reach 100 250 * The total jump is 25 + 250 = 275 |
| 275 |  |
| 99 975 + 275 = 100 250 |  |  |

Count on to complete the following number line jumps.

|  |  |  |
| --- | --- | --- |
| **(a)** From 9 800 to 10 140 |  | **(b)** From 9 950 to 10 230 |
| 10 140  10 000    9 800 |  | 10 230  10 000    9 950 |
| 9 800 + ……………. = 10 140 |  | 9 950 + ……………. = 10 230 |

|  |  |  |
| --- | --- | --- |
| **(c)** From 29 975 to 30 120 |  | **(d)** From 89 985 to 90 505 |
| 30 120  30 000    29 975 |  | 90 505  90 000    89 985 |
| 29 975 + ……………. = 30 120 |  | 89 985 + ……………. = 90 505 |

|  |  |  |
| --- | --- | --- |
| **(e)** From 99 920 to 100 130 |  | **(f)** From 99 850 to 100 250 |
| 100 130  100 000    99 920 |  | 100 250  100 000    99 850 |
| 99 920 + ……………. = 100 130 |  | 99 850 + ……………. = 100 250 |
| **(g)** From 99 840 to 100 210 |  | **(h)** From 99 960 to 100 550 |
| 100 210  100 000    99 840 |  | 100 550  100 000    99 960 |
| 99 840 + ……………. = 100 210 |  | 99 960 + ……………. = 101 550 |

|  |  |  |
| --- | --- | --- |
| **(i)** From 79 940 to 80 310 |  | **(j)** From 99 900 to 101 200 |
|  |  |  |
| 79 940 + ……………. = 80 310 |  | 99 900 + ……………. = 101 200 |

**Question 4**  Counting back…

Counting back is a way of finding the difference between two numbers.

**Example 1** Change 10 360 to 9 960 by counting back.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 10 360  10 000  360  40  9 960 | 360  + 40 |  | * Start at 10 360 * Jump back by 360 to reach 10 000 * Jump back by 40 to reach 9 960 * The total jump is 360 + 40 = 400 |
| 400 |  |
| 10 360 – 400 = 9 960 |  |  |

Counting back from 10 000 by tens

9 990, 9 980, 9 970, 9 960

**Example 2** Change 100 250 to 99 940 by counting back.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 100 250  100 000  250  60  99 940 | 250  + 60 |  | * Start at 100 250 * Jump back by 250 to reach 100 000 * Jump back by 60 to reach 99 940 * The total jump is 250 + 60 = 310 |
| 310 |  |
| 100 250 – 310 = 99 940 |  |  |

Counting back from 100 000 by tens

99 990, 99 980, 99 970 ……. 99 940

Count backwards to complete the following number line jumps.

|  |  |  |
| --- | --- | --- |
| **(a)** From 10 260 to 9 990 |  | **(b)** From 10 140 to 9 800 |
| 10 260  10 000      9 990 |  | 10 140  10 000      9 800 |
| 10 260 – ……………. = 9 990 |  | 10 140 – ……………. = 9 800 |

|  |  |  |
| --- | --- | --- |
| **(c)** From 10 325 to 9 950 |  | **(d)** From 100 450 to 99 950 |
| 10 325  10 000      9 950 |  | 100 450  100 000      99 950 |
| 10 325 – ……………. = 9 950 |  | 100 450 – ……………. = 99 950 |

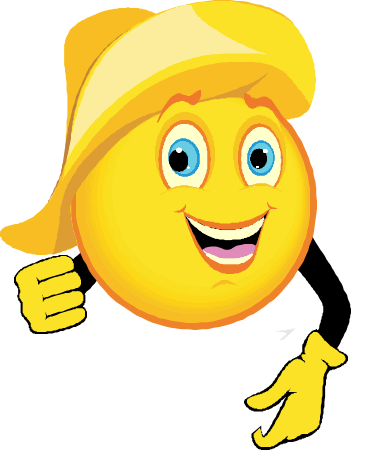
|  |  |  |
| --- | --- | --- |
| **(e)** From 100 320 to 99 800 |  | **(f)** From 100 160 to 99 930 |
| 100 320  100 000      99 800 |  | 100 160  100 000      99 930 |
| 10 325 – ……………. = 9 950 |  | 100 160 – ……………. = 99 930 |

|  |  |  |
| --- | --- | --- |
| **(g)** From 100 250 to 99 920 |  | **(h)** From 100 400 to 99 850 |
|  |  |  |
| 100 250 – ……………. = 99 920 |  | 100 400 – ……………. = 99 850 |

**Questions 5** Solve some problems

|  |  |
| --- | --- |
| Find the missing amounts – show your working out. | |
| Start with 5 thousand **more than** 120 300  **Add** 7 hundreds.  **Make it** to 130 000  What amount do you add? |  |
| Start with 15 thousand **more than** 275 400  **Take** **away** 20 thousand.  Make it to the **next thousand**.  What amount do you **add**?  What is the **final number**? |  |

# Addition skills review

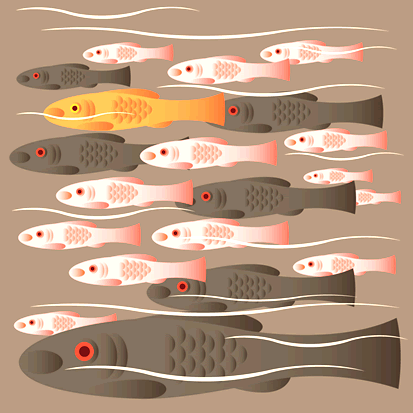


So far we’ve revised mental strategies for adding and subtracting.

A lot of maths problems involve larger numbers, and this means working it out on paper.

Today we revise the techniques for adding larger numbers.

# Revising addition skills

****

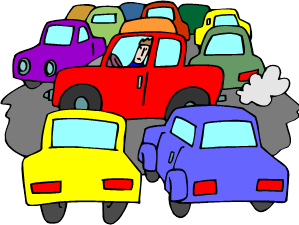
**Example 1** Farmer Ted has a trout farm.

He sold 762 trout last month and 425 this month.

The total number he sold was 762 + 425

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2 + 5 = 7  7 units  60 + 20 = 80  8 tens  700 + 400 = 1100  11 hundreds  or  1 thousand 1 hundred  Start with the units and work across. |  | **Th** | **H** | **T** | **U** |  |
|  |  |  | 7 | 6 | 2 |  |
|  | + |  | 4 | 2 | 5 |  |
|  |  | 1 | 1 | 8 | 7 |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check:  Estimate by rounding to the nearest hundred. | 762 rounds to 800  425 rounds to 400  800 + 400 = 1200  This is close to our answer of 1187 |  |
|  |  |  |

**Example 2** There were 2816 registered cars in a small town and 3971 registered cars in the next town.

The total number of cars is 2816 + 3971

6 + 1 = 7

7 units

10 + 70 = 80

8 tens

800 + 900 = 1700

17 hundreds

or

1 thousand 7 hundred

Add the thousands:

2000 + 3000 + 1000

6000

Place 7 in the hundreds column.

Carry the thousand to the thousands column

Start with the units and work across.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Th** | **H** | **T** | **U** |  |
|  |  | 2 | 8 | 1 | 6 |  |
|  | + | **1** 3 | 9 | 7 | 1 |  |
|  |  | 6 | 7 | 8 | 7 |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check: you can check the accuracy of your calculation by **rounding** and **estimating**.  Estimate by rounding to the nearest thousand. | 2816 rounds to 3000  3971 rounds to 4000  3000 + 4000 = 7000  This is close to our answer of 6787 |  |
|  |  |  |

**Example 3** Two large flocks of sheep were combined.

There were 15 816 sheep in the one flock and 29 432 sheep in the second flock. How many sheep were there in total?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Start with the units and work across.  6 + 2 = 8  8 units  10 + 30 = 40  4 tens  800 + 400 = 1200  12 hundreds  or  1 thousand 2 hundred  Place 2 in the hundreds column.  Carry the 1 thousand to the thousands column  5000 + 9000 + 1000  15 thousand  Place 5 in the thousands column.  Carry the 1 ten thousand to the next column  Add the ten thousands:  40 000  4 ten thousands |  | T-Th | Th | H | T | U |  |
|  |  | 1 | 5 | 8 | 1 | 6 |  |
|  | + | **1** 2 | **1** 9 | 4 | 3 | 2 |  |
|  |  | 4 | 5 | 2 | 4 | 8 |  |



|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check:  Estimate by rounding to the nearest thousand. | 15 816 rounds to 16 000  29 432 rounds to 29 000  16 thousand + 29 thousand = 45 thousand  45 000 is close to our answer of 45 248 |  |
|  |  |  |

|  |  |
| --- | --- |
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| **Day 8 Activity 1: Addition skills warm-up** |
|  |

**Question 1** Complete these additions.

Check your answers with an approximation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  |  | Th | H | T | U |  | **(b)** |  |  | Th | H | T | U |
|  |  |  | 2 | 6 | 4 | 7 |  |  |  |  | 6 | 2 | 3 | 7 |
|  |  | + |  | 8 | 3 | 2 |  |  |  | + |  | 9 | 1 | 5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(c)** |  |  | **Th** | **H** | **T** | **U** |  | **(d)** |  |  | **Th** | **H** | **T** | **U** |
|  |  |  | 4 | 5 | 2 | 6 |  |  |  |  | 5 | 9 | 5 | 1 |
|  |  | + |  | 8 | 3 | 5 |  |  |  | + | 1 | 4 | 7 | 6 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  |  | Answer check: (round & estimate) | | | | |  |  |  | Answer check: (round & estimate) | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(e)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(f)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 7 | 5 | 3 | 4 |  |  |  |  | 9 | 3 | 8 | 2 |
|  | + |  | 8 | 6 | 1 | 5 |  |  | + |  | 5 | 1 | 7 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(g)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(h)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 3 | 5 | 8 | 7 | 2 |  |  |  | 5 | 7 | 8 | 4 | 0 |
|  | + | 1 | 6 | 4 | 1 | 5 |  |  | + | 2 | 6 | 1 | 9 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(i)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(j)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 2 | 7 | 4 | 9 | 2 |  |  |  | 5 | 2 | 9 | 3 | 1 |
|  | + | 4 | 0 | 8 | 3 | 4 |  |  | + | 2 | 7 | 6 | 0 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(k)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(l)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 7 | 0 | 8 | 6 | 5 |  |  |  | 3 | 7 | 0 | 4 | 8 |
|  | + | 2 | 4 | 9 | 7 | 4 |  |  | + | 4 | 6 | 2 | 9 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

**Question 2** What’s missing?

Find the missing numbers in these additions. Some numbers have been carried.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  | **H** | **T** | **U** | **(b)** |  | **H** | **T** | **U** | **(c)** |  | **H** | **T** | **U** |
|  |  | 4 |  | 5 |  |  | 1 | 5 | 9 |  |  |  |  | 9 |
|  | + |  | 2 |  |  | + | **1** 2 | **1** 4 |  |  | + | 5 | **1** 6 | 7 |
|  |  | 8 | 5 | 7 |  |  |  | 0 | 6 |  |  | 9 | 9 |  |

**Question 3** Set up additions to solve these problems *(Please see next page.)*

|  |  |
| --- | --- |
| **(a)** | **18 430** fans attended the game last month. This month, there were  **5 693 more**. How many were at the game this month? |
| **(b)** | Our local library spends a lot on computers. Last year they spent  **$25 840.** This year they spent **$8 920 more** than last year. How much did they spend on computers this year? |

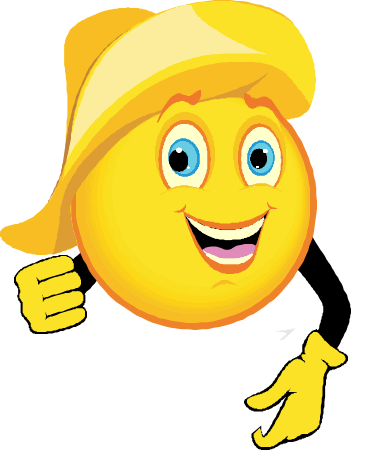
(a)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **H-Th** | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  |  |  |  |  |  |
| + |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

(b)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | H-Th | T-Th | Th | H | T | U |
|  |  |  |  |  |  |  |  |
| + |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

# Subtraction skills review



We’ve revised **mental strategies** for **adding** and **subtracting.**

A lot of maths problems involve larger numbers, and this means working it out on paper.

Let’s revise the techniques for adding larger numbers.

# Revising subtraction skills

****

**Example 1**

Karina made $4713 at her market stall last week and $2501 this week.

The difference between this week and last week is $4713 – $2501

3 – 1 = 2

2 units

10 – 0 = 10

1 ten

700 – 500 = 200

2 hundreds

4000 – 3000

1000

Start with the **units** and work left.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Th** | **H** | **T** | **U** |  |
|  |  | 4 | 7 | 1 | 3 |  |
|  | – | 3 | 5 | 0 | 1 |  |
|  |  | 1 | 2 | 1 | 2 |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check:  Estimate by rounding to the nearest thousand. | 4713 **rounds** to 5000  3501 is about **half way** between 3000 and 4000, and could be **rounded** to either.  5000 – 4000 = 1000  OR 5000 – 3000 = 2000  Our answer is between 1000 and 2000 |  |
|  |  |  |

**Example 2** Find the difference between 3725 and 2593

***Find the difference*** means subtract the smaller number from the larger number.

5 – 3 = 2

2 units

20 – 90 = ?

Trade 1 ten from the hundreds column.

120 – 90 = 30

3 tens

3000 – 2000

1000

1 thousand

Start with the units and work across.

600 – 500 = 100

1 hundred

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Th | H | T | U |  |
|  |  | 3 | **6** 7 | **1** 2 | 5 |  |
|  | – | 2 | 5 | 9 | 3 |  |
|  |  | 1 | 1 | 3 | 2 |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check:  Estimate by rounding to the nearest thousand. | 3725 **rounds** to 4000  2593 is **about half** way between 2000 and 3000, but **closer** to 3000.  4000 – 3000 = 1000  This is close to our answer of 1132 |  |
|  |  |  |

**Example 3** Two large herds of cattle are run on the same cattle station.

The first herd has 29 354 cattle. The second has 36 872 cattle.

How many more cattle are in the second herd? 36 872 – 29 354

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Start with the units and work across.  2 – 4 = ?  Trade 1 ten from the tens column.  12 – 4 = 8  8 units  60 – 50 =10  1 ten  20000 – 20000 = 0  Leave the last column empty.  800 – 300 = 500  5 hundreds  600 – 900 = ?  Trade ten thousand from the ten thousands column.  16000 – 9000 =7000  7 hundreds |  | **T-Th** | **Th** | **H** | **T** | **U** |  |
|  |  | **2** 3 | **1**6 | 8 | **6** 7 | **1**2 |  |
|  | – | 2 | 9 | 3 | 5 | 4 |  |
|  |  |  | 7 | 5 | 1 | 8 |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Answer check:  **Estimate** by **rounding** to the nearest thousand. | 36 872 rounds to 37 000  29 354 rounds to 29 000  37 000 – 29 000 = 8000  This is close to our answer of 7518 |  |
|  |  |  |

|  |  |
| --- | --- |
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| **Activity 1: Subtraction skills warm-up** |
|  |

**Question 1** Complete these subtractions.

Check your answers with an approximation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  |  | **Th** | **H** | **T** | **U** |  | **(b)** |  |  | **Th** | **H** | **T** | **U** |
|  |  |  | 3 | 1 | 5 | 7 |  |  |  |  | 5 | 2 | 4 | 8 |
|  |  | – |  | 7 | 3 | 2 |  |  |  | – |  | 8 | 3 | 5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(c)** |  |  | Th | H | T | U |  | **(d)** |  |  | Th | H | T | U |
|  |  |  | 3 | 4 | 8 | 1 |  |  |  |  | 7 | 9 | 4 | 2 |
|  |  | – |  | 6 | 2 | 5 |  |  |  | – | 2 | 5 | 7 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(e)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(f)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 1 | 7 | 8 | 4 | 2 |  |  |  | 2 | 6 | 3 | 8 | 2 |
|  | – |  | 9 | 6 | 1 | 5 |  |  | – |  | 7 | 1 | 7 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
| Answer check: (round & estimate) | | | | | |  |  |  | Answer check: (round & estimate) | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(g)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(h)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 5 | 4 | 8 | 7 | 2 |  |  |  | 7 | 2 | 8 | 9 | 3 |
|  | – | 3 | 6 | 4 | 1 | 5 |  |  | – | 2 | 6 | 1 | 8 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |
| **(i)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(j)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 6 | 1 | 4 | 5 | 6 |  |  |  | 3 | 2 | 9 | 3 | 1 |
|  | – | 4 | 0 | 8 | 7 | 4 |  |  | – | 2 | 7 | 6 | 0 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(k)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(l)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | 4 | 0 | 8 | 6 | 5 |  |  |  | 8 | 4 | 0 | 6 | 8 |
|  | – | 2 | 4 | 3 | 7 | 4 |  |  | – | 7 | 6 | 2 | 9 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

# Apply your skills

Let’s see how to use your addition and subtraction skills to solve problems…

|  |  |
| --- | --- |
| Crowds at the Grand Prix  The Australia Grand prix has been hosted by Melbourne since 1996.  The table shows the crowd numbers from 2004 to 2012.  Source: <http://www.grandprix.com.au/news/new-grandstand-built-and-paddock-club-sold-out>  <http://www.drive.com.au/editorial/articledetail.aspx?ArticleID=61877&vf=26> | C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\module3\grandprix2.gifCrowd numbers |
| 2004 360,900  2005 359,000  2006 301,500  2007 301,000  C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\module3\grand prix.gif 2008 303,000  2009 286,900  2010 305,000  2011 298,000  2012 313,700 |

Compare 2009 with 2011:

Which year had the greatest crowd?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **H-Th** | **T-Th** | **Th** | **H** | **T** | **U** |
| In 2009 the crowd was 286 900 | 2 | 8 | 6 | 9 | 0 | 0 |
| In 2011 the crowd was 298 000  Both have 200 000  Compare the ten thousands:  90 000 is greater than 80 000  298 000 is greater than 286 900 | 2 | 9 | 8 | 0 | 0 | 0 |

What was the difference in crowd numbers?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subtract the smaller number from the larger one:  298 000 – 286 900  11 100 |  | **H-Th** | **T-Th** | **Th** | **H** | **T** | **U** |
|  | 2 | 9 | **7** 8 | **1**0 | 0 | 0 |
| – | 2 | 8 | 6 | 9 | 0 | 0 |
|  |  | 1 | 1 | 1 | 0 | 0 |

|  |  |
| --- | --- |
| Description: j0229369 |  |
| **Activity : Apply your skills** |
|  |

**Question 1** Comparing crowd numbers at the Grand Prix

|  |
| --- |
| **(a)** Compare the crowd numbers in 2006 with 2010.  2010: 305 000 compared with 2006: 301 500  Which year had the greatest crowd?  What was the difference in numbers? |

Source: <http://www.markwebber.com/on-the-track-news/2010-season/australian-grand-prix-marks-preview/>

**(b)** This headline appeared in the local newspaper. Is it correct?

(see the table of previous page)

**Crowds over**

**2011-2012**

**more than 650 000!**

What was the total crowd numbers over 2011 and 2012?

Was it more than 650 000?

|  |  |
| --- | --- |
| **Question 2** Cities across Australia  The table shows the population of several cities in Australia. | Description: http://upload.wikimedia.org/wikipedia/commons/thumb/9/97/Brisbane_aerial_view_06.jpg/150px-Brisbane_aerial_view_06.jpgPopulation numbers |
| Geelong 174 100  Townsville 167 640  Description: http://upload.wikimedia.org/wikipedia/commons/thumb/5/5e/Perth_CBD_from_air.jpg/150px-Perth_CBD_from_air.jpgSunshine Coast 241 645  Toowoomba 125 265  Darwin 129 065  Greater Hobart 216 275 |
|  |

Source :<http://en.wikipedia.org/wiki/List_of_cities_in_Australia_by_population>

|  |  |
| --- | --- |
| **(a)** | Which has the greater population, Geelong or Townsville?  What is the difference in the population of these two cities? |
| **(b)** | Does the population Toowoomba and Darwin total to  more than 250 000? How much more, or less? |

# Time for a skills check-up and

# reflection



Let’s finish with a skills check-up on what you have learned.

|  |
| --- |
| **Test** |

* This test is to see how well you have understood the work this week and whether you need any additional help in a particular area.

# C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\test.gifPlease complete the exercises on these pages. Show your working out wherever possible.

# You can use your notes to help you with these exercises, but no other assistance.

**Activity 1 Numbers in hundreds of thousands**

**Question 1**

**(a)** What is the value of the digits in bold?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4**2**0 **6**71 | **2**……………..…  **6**…………..…… |  | **3**72 8**1**9 | **3**………….  **1**…………. |

**(b)** Fill in the missing parts of the table below.

Expand the numbers and write them in words.

|  |  |
| --- | --- |
| 578 103 | **?** |
| **?** | |
|  | |
| **?** | **?** |
| *Three hundred and four thousand, two hundred and twenty-five.* | |
|  | |
| **?** | 300 000 + 10 000 + 4 000 + 30 + 1 |
| ? | |
|  | |

**Question 2 Strategies for adding and subtracting larger numbers**

**(a)** Work out the new distances travelled.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 729 542 km | |  | 695 073 km | |
| 40 000 km more | 5 000 km less |  | 3 000 km more | 200 000 km less |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(b)** | Change 780 540 to 60 540 by taking away one number.  Complete the number sentence:  780 540 – ……………. = 60 540 | Working column | | |
|  |  | 7 8 0 5 4 0  – .…………… |  |
|  |  | 6 0 5 4 0 |  |
|  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(c)** | Change 835 140 to 215 140 by taking away one number.  Complete the number sentence:  835 140 – ……………. = 215 140 | Working column | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  | | | | | |  |

**(d)** Complete the following number line jumps by:

|  |  |  |
| --- | --- | --- |
| Counting on… |  | Counting back… |
| from 9 920 to 10 150 |  | from 10 145 to 9 930 |
| 10 150  10 000    9 920 |  | 10 145  10 000      9 930 |
| 9 920 + ……………. = 10 150 |  | 10 145 – ……………. = 9 930 |

**(e)** Complete the following number line jumps by:

|  |  |  |
| --- | --- | --- |
| Counting on… |  | Counting back… |
| from 99 910 to 100 160 |  | from 100 280 to 99 850 |
| 100 160  100 000    99 910 |  | 100 280  100 000      99 850 |
| 99 910 + ……………. = 100 160 |  | 100 280 – ……………. = 99 850 |

**Activity 2 Addition and subtraction skills**

**Question 1**

Complete these additions and subtractions.

Check your answers with an approximation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** |  | **T-Th** | **Th** | **H** | **T** | **U** |  | **(b)** |  | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  |  | 6 | 3 | 5 | 4 |  |  |  | 4 | 5 | 4 | 3 | 0 |
|  | + |  | 8 | 7 | 1 | 5 |  |  | + | 3 | 7 | 6 | 2 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  | | | | |
|  | Answer check: (round & estimate) | | | | | |  |  | Answer check: (round & estimate) | | | | | |

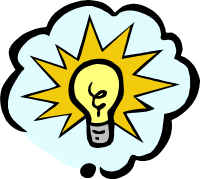
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(c)** |  | | **T-Th** | **Th** | **H** | **T** | **U** |  | **(d)** |  | | **T-Th** | **Th** | **H** | **T** | **U** |
|  |  | | 3 | 6 | 4 | 1 | 5 |  |  |  | | 6 | 4 | 5 | 7 | 2 |
|  | – | |  | 7 | 6 | 3 | 5 |  |  | – | | 2 | 7 | 1 | 2 | 5 |
|  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |
|  |  | |  | | | | |  |  |  | |  | | | | |
|  |  | Answer check: (round & estimate) | | | | | |  |  |  | Answer check: (round & estimate) | | | | | |

**Activity 3 Solving maths problems**

**Question 1 Find the missing amounts**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(a)** | Find the missing numbers in this addition.  Some numbers have been carried. |  | **H** | **T** | **U** |
|  |  | 4 |  | 6 |
|  | + |  | **1**3 |  |
|  |  | 5 | 6 | 5 |

|  |
| --- |
| **(b)** Find the missing amounts |
| Start with 8 thousand more than 140 360 ……………………………..  Add 7 hundreds …………………………….  Make it to the next ten thousand ……………………………  What amount do you add? ……………………………  What is the final number? …………………………… |

****

**Challenge Problem** Carpeting the House

|  |  |
| --- | --- |
| The Smiths are shopping for carpet for their home.  They have noticed carpet specials advertised and they want to work out how much it would cost.  The area they need to cover is **85 square metres.** (85m2) | **Carpet specials!**  **Everyday:** $15 a square metre  **Premium:** $23 a square metre |

|  |  |  |
| --- | --- | --- |
| **a)** |  |  |
|  |  | The *Everyday* Carpet | | | | | | |
|  |  |  | | 8 | 5 |  | |  |  |  |  | 8 | 5 |
| × |  |  | |  |  |  | |  | × |  |  | 2 | 3 |
|  |  |  | |  |  | 5 × |  |  |  |  |  |  |  |
|  |  |  | |  |  | 10 × |  |  |  |  |  |  |  |
|  |  |  | |  |  |  | |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **(b)** | How much more would the Premium carpet cost? |  |

|  |  |
| --- | --- |
| **(c)** | What are some other things besides money that they should consider before making their choice?  ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… |

**Question 2 Apply your skills: AFL crowd numbers**

|  |  |
| --- | --- |
| C:\Users\CFord\Documents\MY Folders\CurricDev2012\images\module3\fb2.gifAustralian Rules football began in Melbourne more than 150 years ago.  It became popular in other states, although Victoria saw itself as the home of Australian Rules football.  A national league, the AFL, was established in 1989. New interstate teams formed, including the Adelaide Crows, the Fremantle Dockers, Port Adelaide Power and the Brisbane lions.  Australian Rules is now so popular that some interstate teams attract more crowds than the Victorian teams.  The crowd attendance for six Victorian and six interstate teams is shown in the tables. | Crowd numbers 2011  Victorian Teams  Carlton Blues 457 420  Geelong Cats 347 020  Richmond Tigers 421 210  Kangaroos 311 210  St Kilda Saints 417 140  Hawthorn Hawks 369 050  Crowd numbers 2011  Interstate Teams  Adelaide Crows 461 910  Port Adelaide Power 306 570  West Coast Eagles 448 700  Sydney Swans 391 950  Brisbane Lions 317 320  Fremantle Dockers 412 210 |

Source: <http://www.zimbio.com/Andy+Biddlecombe>

Use the tables above to help you answer the following questions.

|  |  |
| --- | --- |
| **(a)** | Compare the Carlton Blues with the West Coast Eagles.  Which team attracted the greater crowds? By how many people?  ………………………………………………………………………………..… |

|  |  |  |
| --- | --- | --- |
| **(b)** | Find the two interstate teams with the lowest crowd numbers. | |
|  | ………………………………………. | ……………………………………….. |

|  |  |  |
| --- | --- | --- |
| **(c)** | This headline appeared in our local newspaper. Is it correct?  What was the **total** crowd numbers of the Hawks and the Saints?  Was it more than 750 000? | **Hawks and Saints crowds more than 750 000!** |
|  |  | |

**Student Self-Assessment:** How well do I know my 3, 6, 4 & 8 multiplication tables? **Color** the statements that you think are **MOSTLY** true for you.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I still need to keep learning tables to be quicker and more accurate. | I practise and I am improving all the time. | I am confident with my tables.  I can see the patterns in multiplication tables. | I know that:   * multiplication tables are made of multiples and factors * division is connected with multiplication. | I am quick and confident and I can help others learn their tables. |

**Student Self Assessment:** How well do I use efficient mental and written strategies to solve problems? **Color** the statements that you think are **MOSTLY** true for you.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I need help to solve maths problems. | I can choose one strategy to solve a problem. I feel I am becoming more confident. | I understood most of the different strategies I learnt in this module. | I enjoyed learning about the different strategies I can use to solve Maths problems. | I had fun using all the different strategies to solve Maths problems. I can’t wait to experiment with other numbers and find other strategies! |

**THINKING ABOUT YOUR LEARNING**

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**This is what I feel I have learnt well:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**I still need help to understand:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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|  |
| --- |
| **YOUR QUESTIONS OR COMMENTS** |
| **SUPERVISOR’S COMMENTS**  **Some great things about your work were:**  **Things you can do to improve your learning:** |
|  |