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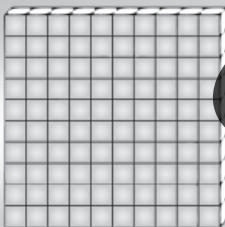


Number Strategies



# Working On Number

Ages 8-10 years



**1. Slice it up**

2. **THINK** Fill in the empty boxes to make each calculation true.

a.  $2 \times 3 \times 8 = 3 \times 2 \times \square$       d.  $3 \times \square \times 7 = \square \times 4 \times 3$   
b.  $0 \times \square \times 5 = 2 \times 5 \times \square$       e.  $10 \times \square \times 4 = 4 \times 2 \times \square$   
c.  $4 \times 5 \times 1 = 3 \times \square \times 4$       f.  $\square \times 2 \times 3 = 5 \times 9 \times \square$

3. **THINK** Show up each of these shapes into the correct number of equal parts and shade the amount to be shown.

4. **THINK** Order the cubes for each question below.

5. **THINK** Fill in the empty boxes to make each calculation true.

a.  $2 \times 3 \times 8 = 3 \times 2 \times \square$       d.  $3 \times \square \times 7 = \square \times 4 \times 3$   
b.  $0 \times \square \times 5 = 2 \times 5 \times \square$       e.  $10 \times \square \times 4 = 4 \times 2 \times \square$   
c.  $4 \times 5 \times 1 = 3 \times \square \times 4$       f.  $\square \times 2 \times 3 = 5 \times 9 \times \square$

**Changing the Order**

6. **THINK** Fill in the empty boxes to make each calculation true.

a.  $2 \times 3 \times 8 = 3 \times 2 \times \square$       d.  $3 \times \square \times 7 = \square \times 4 \times 3$   
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c.  $4 \times 5 \times 1 = 3 \times \square \times 4$       f.  $\square \times 2 \times 3 = 5 \times 9 \times \square$

7. **THINK** Order the cubes for each question below.

8. **THINK** Fill in the empty boxes to make each calculation true.

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**Numbers in Cubes and Colour**

9. **THINK** Colour in the correct number of cubes needed to make each number.

10. **THINK** How many of each block do you need to represent each of these numbers?

11. **THINK** How many hundred blocks, ten-blocks, one-blocks, and ten-rod blocks do you need to make each of these numbers?

12. **THINK** Complete your answers with pictures.

**Add or Subtract?**

13. **THINK** Fill in each of the empty boxes to make each calculation true.

a.  $24 + 5 = \square$       d.  $126 - 6 = \square$   
b.  $30 + \square = 48$       e.  $430 + 50 = \square$   
c.  $\square + 3 = 42$       f.  $1110 - 200 = \square$

14. **THINK** Complete your answers with pictures.

15. **THINK** Complete your answers with pictures.



By Mirella Trimboli

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# Numeration

## How Many Tens Are There?

This activity can be made more tangible by asking students to create and cut out their own Xs and Is for this task. Task C can be a casual activity or you may like students to create a more formal "mini test" to try on their partner, with a separate solutions guide.

## How Many Hundreds Are There?

This activity is best completed after "How many tens are there?". As an extension activity for more able students you may like to turn Task C into an activity on numbers greater than 1000, using a separate symbol for 1000.

## Numbers in Cubes and Colour

This activity can be done without actual MSB cubes, but some lower ability students may like to assemble numbers using cubes before attempting these tasks.

## Words to Numbers

You may like to talk about the different way we say numbers. As an example you can discuss how to say the number 2 307 and when we use the word "and". Task C will enable students to simultaneously participate in the creation of mathematics and to practise a larger variety of numbers. Take note of each number as they say it so that you can go through all the solutions at the end.

## Numbers in a Row

This task is best completed after "Words to Numbers", especially when attempting Task C. You may like to encourage students to cross off each number once they've used it to keep track of which numbers are left to order.

## Measuring Numbers

Materials required for this activity: a 30cm ruler with cm and mm markings. As a discussion point you may like to talk about the connection between cm and mm and their different uses depending upon the accuracy required. You can extend Task C by asking students to measure and order other lengths: the distance between their eyes, from elbow to wrist. You can extend this even further by a research assignment on the Golden Ratio and body lengths.

## Large Numbers

This activity is designed to expose students to numbers beyond 1000 and their existence in the real world. The above six activities should be completed first.

## Numbers to Words

Once again this task is designed to expose students to numbers beyond 1000 and how we read and write them. This is also an opportunity for some small group research and you can extend this further to look at other occupations. A good place is to look at government jobs, where salaries are often numbers like \$76 201 and \$42 523.

# ★ How Many Hundreds Are There?

**\* TASK A** Circle the number of hundreds and tens needed to make each number.

**431** C C C C C C C C C C  
X X X X X X X X X X

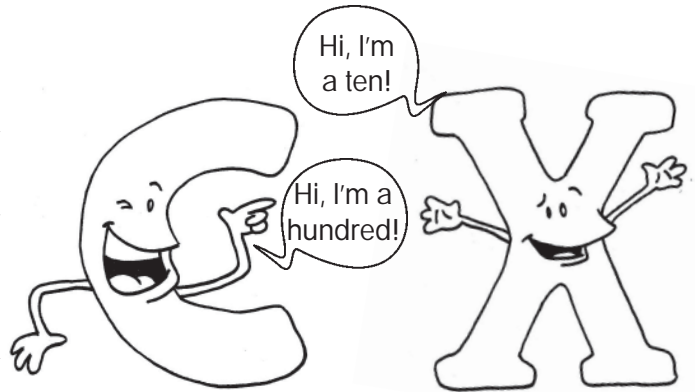
**688** C C C C C C C C C C  
X X X X X X X X X X

**199** C C C C C C C C C C  
X X X X X X X X X X

**912** C C C C C C C C C C  
X X X X X X X X X X

**526** C C C C C C C C C C  
X X X X X X X X X X

**827** C C C C C C C C C C  
X X X X X X X X X X



**\* TASK B** Draw the number of hundreds and tens you need to make each number.

**275**

**587**

**398**

**765**

**\* TASK C: CHALLENGE YOUR PARTNER**



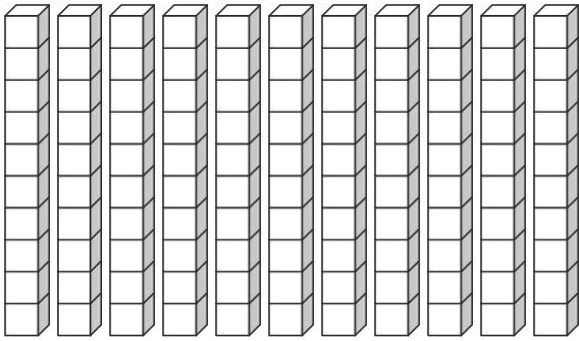
Use your imagination to draw your own symbols to represent a hundred, a ten and a one. Give them to your partner, along with ten different numbers between 100 and 1000 and see if they can draw them with the correct number of hundreds, tens and ones.



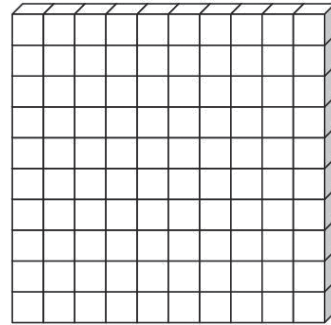
# ★ Numbers in Cubes and Colour

★ **TASK A** Colour in the correct number of cubes needed to make each number.

**83**

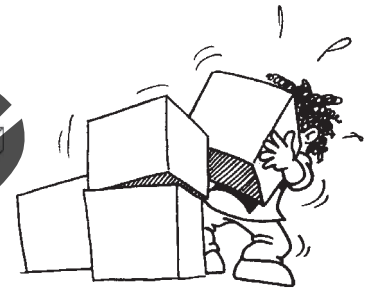
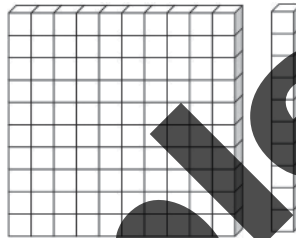


**57**



★ **TASK B**

How many of each block do you need to represent each of these numbers?



**462**

I need  **hundreds** blocks

I need  **tens** blocks

I need  **ones** blocks

**63**

I need  **hundreds** blocks

I need  **tens** blocks

I need  **ones** blocks

**897**

I need  **hundreds** blocks

I need  **tens** blocks

I need  **ones** blocks

**374**

I need  **hundreds** blocks

I need  **tens** blocks

I need  **ones** blocks

★ **TASK C: PERSONAL CHALLENGE**

How many thousands blocks, hundreds blocks, tens blocks and ones blocks do you need to make each of these numbers?

**1502    3946    7324    9090**

Compare your answers with your partner.



# Place Value

## Numbers in Columns

This activity acts as a basic review of place value and how groupings of 100s, 10s and 1s can be converted into place value. You may like to allow students to work with MSB blocks to enable a more tangible approach to the exercise.

## How Many Are There?

This activity helps students understand how many lots of 1s, 10s and 100s are needed to create numbers. This is in contrast to thinking about place value. Task C can be extended by asking students to create a larger worksheet or a mini test for their partner. If you photocopy each student's created task then you can create a database of tasks for students to attempt.

## Describing the Number

It is important to note that this activity is about the total number of 1s, 10s or 100s found in the number, not just the number in the place value column. As described in the curriculum, it is important that students are able to describe a number from a number of different perspectives.

For example, if examining the number 5 327, we could describe this number as having 5 thousands, or 53 hundreds, or 532 tens or 5 327 ones.

Task B extends this idea by asking students to describe the number without any scaffolding.

Task C is a show and tell type activity and students should be encouraged to record their answers individually, rather than sharing their answers with their peers.

## Different Groupings

The previous three activities in this section should be completed before attempting this activity, in particular the Describing the Number task. Building on the detail in the curriculum where students are required to describe numbers flexibly, this task helps guide students in the variety of ways they can group numbers using a combination of 1s, 10s, 100s and 1000s.

For example, in Task A, if we were to find the different groupings of the number 4 136, we could have each of the following different groupings:

**4 136** is made up of:

**4 thousands + 13 tens + 6 ones**

or **4 136 ones**

or **4 thousands + 136 ones**

or **4 thousands + 1 hundred + 3 tens + 6 ones**

or **41 hundreds + 36 ones**

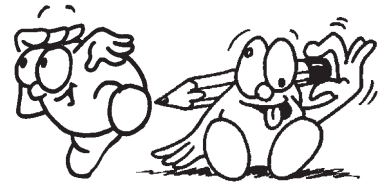
or **41 hundreds + 3 tens + 6 ones**

or **413 tens + 6 ones.**

While Task A asks students to consider a few of the different possible groupings, Task B asks students to find the total number of different groupings. For students who find the task challenging, you might encourage them to write down all possible combinations on a separate piece of paper first.

Task C is designed to make students aware that numbers and research go hand in hand. You can turn this task into a more formal assignment and extend the number of dinosaurs that students research.

# ★ Numbers in Columns



## \* TASK A

**Circle the number in the hundreds column.** Look at the first example, in the number 743 there is a 7 in the hundreds column, a 4 in the tens column and a 3 in the ones column.

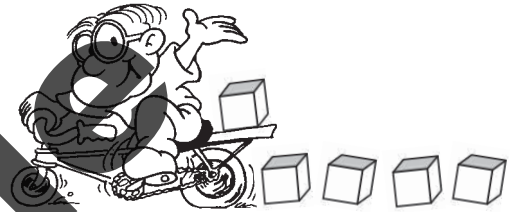
**743    302    1 204    952    3 001    12 367**

**Circle the number in the tens column for these numbers:**

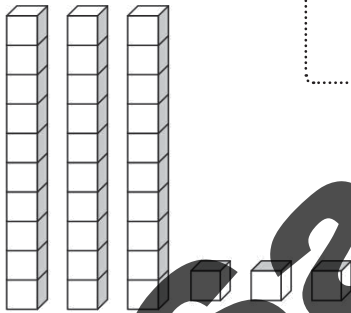
**457    3 123    92    271    15 235**

## \* TASK B

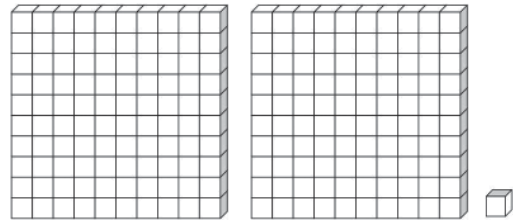
**Tom has made different numbers with his blocks. What number would go in the tens column for each?**



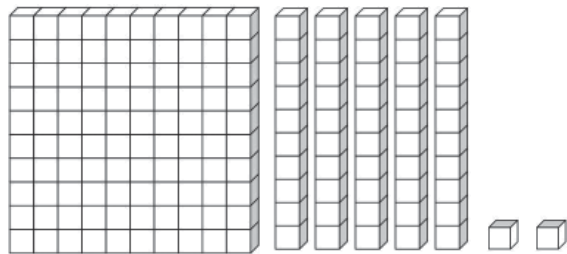
a)



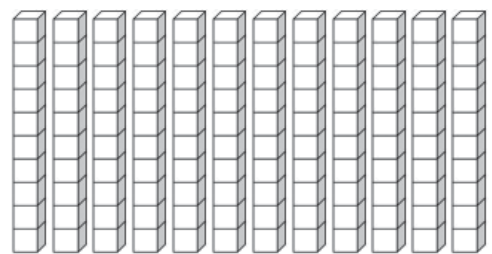
b)





c)



d)



## \* TASK C: PERSONAL CHALLENGE

How many of these  and of these  would you need to make each of the following numbers?

**54    136    29    1013    458    2367**

# ★ Grouping Numbers for Addition



Fill in each of the empty boxes to help you add each pair of two digit numbers.  
In the first example you can see that we split each number into groups of tens and ones.

$$\begin{aligned} 45 + 23 &= \boxed{4} \text{ tens} + \boxed{2} \text{ tens} + \boxed{5} \text{ ones} + \boxed{3} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{68} \end{aligned}$$



$$\begin{aligned} 72 + 15 &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \end{aligned}$$



$$\begin{aligned} 65 + 27 &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \end{aligned}$$



$$\begin{aligned} 48 + 39 &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \end{aligned}$$



$$\begin{aligned} 82 + 95 &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \end{aligned}$$



$$\begin{aligned} 214 + 35 &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \text{ hundreds} + \boxed{\phantom{00}} \text{ tens} + \boxed{\phantom{00}} \text{ ones} \\ &= \boxed{\phantom{00}} \end{aligned}$$