HeadStart primary

# PROBLEM SOLVING AND REASONING

YEAR 1

# Part 1

Name:

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# Guidance

## YEAR 1: PROBLEM SOLVING AND REASONING

### Introduction - National Curriculum

This booklet is Part 1 of a 3-booklet series covering all the 'matters, skills and processes' specified in the Mathematics National Curriculum. These 'matters, skills and processes' are often referred to as 'learning objectives' or 'learning outcomes'.

Solving problems and mathematical reasoning in context are difficult skills for children to master; a real-life, written problem is an abstract concept and children need opportunities to practise and consolidate their problem solving techniques.

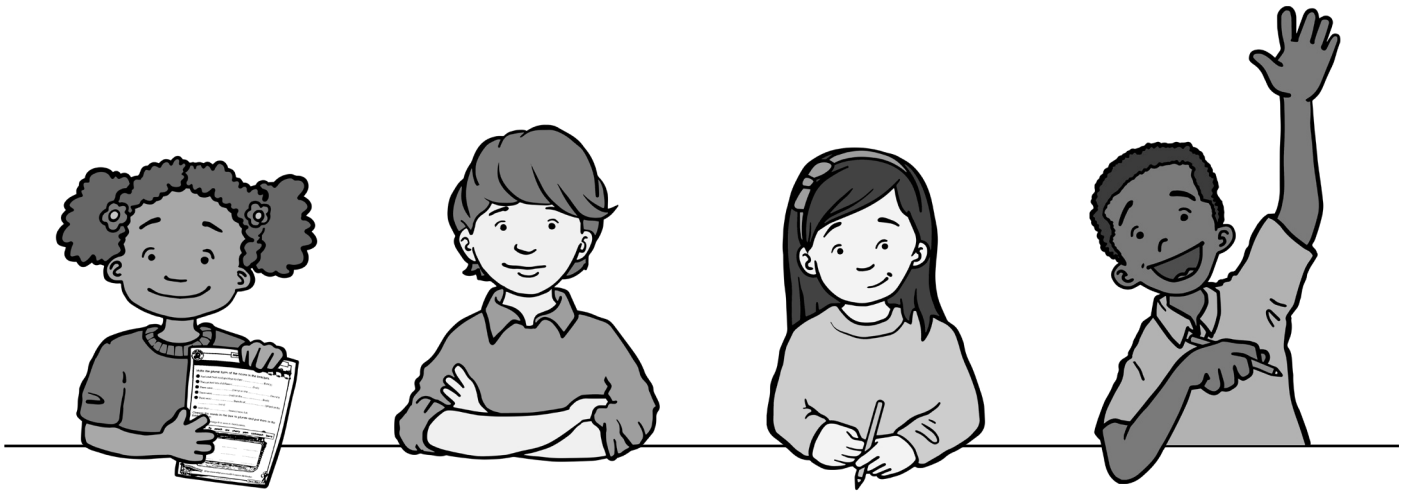
The specific objectives covered in this booklet are identified on the contents page.
The 3 booklets in the series cover all the National Curriculum objectives for Year 1.

### Content of the booklet

The first section of each content domain is intended to provide opportunities for children to practise and consolidate their problem solving skills. Each page has an identified objective from the National Curriculum; the difficulty level of the questions increases towards the bottom of each page, thus providing built-in differentiation.

The MASTERING sections provide extra challenges as children's problem solving skills and confidence increase. The problems in the MASTERING sections encompass several objectives from the relevant curriculum domain.

It may be appropriate for children to use exercise books or paper to record any necessary working out.



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**Year 1: NUMBER - Addition and subtraction**

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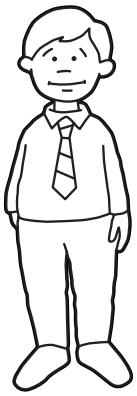
Year 1

# NUMBER

## Number and place value


Throughout this booklet, 6 children are solving problems. Their names are Rose, Ali, Usma, Jing, Olivia and Matt.

# Count to and across 100, forwards



1. Matt is counting his sweets. He counts **3** and then counts another **5**. How many has he counted altogether?

2. Olivia starts at **6** and counts up **7** more. What number does she count to?

3. Mrs Flower asks Class 1 to count on **6** numbers from **30**. What number should they say?

4. On a number line, Rose starts at number **62**. She counts on **7** more. What number does she count to?

5. Ali counts **91** cars in the car park. Then he counts **10** more. How many has he counted altogether?

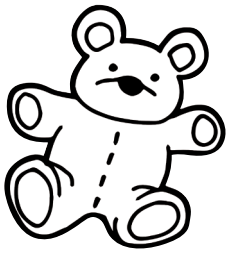




Name .....

# Count to and across 100, backwards

1. Usma has **8** teddy bears. She gives **1** to her sister. How many does she have now?



2. If you count back **3** from **10**, what number do you finish at?

3. There are **15** birds in the tree. **5** birds fly away. How many birds are left in the tree?

4. Mr Ahmed asks his class to count back **8** numbers from **30**. What is the **last** number they say?

5. On a number line, Jing starts at number **102** and counts back **9**. What number does he count to?





Name .....

# Count to and across 100, forwards and backwards

1. Olivia starts at number **8** and counts back **2**.
What number does she say last?

2. If you start at **10** and count forward **4** numbers,
what number do you finish at?

3. Matt was counting forwards. The **first** number he said was **19**.
What was the **third** number he said?

4. Mrs Reed asks Class 1 to start at **61** and count backwards **6** numbers. What number should they finish at?

5. Rose counts back **9** numbers from **104**.
What number does she count to?





Name .....

# Count to and across 100, forwards and backwards

1. Ali starts at **11** and counts back **four** numbers.
What number does he finish at?

2. On a number line, Usma starts at **12** and counts on **7** numbers.
What number does she count up to?

3. Jing was counting forwards. What was the **ninth** number he said after **8**?

4. Olivia has saved **£83**. She spends **£9** on a dress.
Count backwards to find out how much she has left.

£

5. If you start at **109** and count back **13**, what number do you finish at?





Name .....

# Count in multiples of two

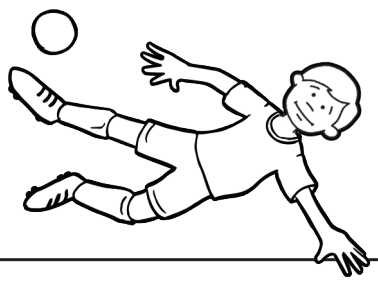
1. Usma has **2** oranges and her mum gives her **2** more. How many oranges does Usma have now?

2. Matt has **3** cakes. Rose has **2** cakes and Ali has **2** cakes. How many do they have altogether?

3. Jing is counting up in **twos**. His **first** number is **7**. What is his **fourth** number?

4. Usma is counting back in **twos**. Her **first** number is **28**. What is her **third** number?

5. Matt has **79** football cards. He buys **6** more packets with **2** cards in each packet. How many cards does he have now?







Name .....

# Count in multiples of five

1. Ali counted **5** toes on his left foot and **5** toes on his right foot. How many toes has he counted altogether?

2. The baker makes **11** chocolate birthday cakes. Then he makes **5** more. How many cakes has he made altogether?

3. Mr White asks his class to count up in **fives**. They start at **20**. What are the next **3** numbers they count?

4. If you start at number **26** and count back **3 fives**, what number do you finish at?

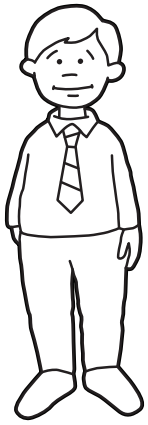
5. Olivia is counting forwards in **fives**. She starts at **35**. Write down her next **4** numbers.





Name .....

# Count in multiples of ten



1. Matt is **6** years old. His brother is **10** years older. How old is his brother?

2. Jing has **10** grapes. His mum gives him **10** more. How many grapes does he have altogether?

3. Miss Jones asks her class to count up in **tens**. They start at **21**. What are the next **two** numbers they count?

4. Start at number **82** and count back **4 tens**. What number do you finish at?

5. Rose is counting up in **tens**. Her **first** number is **96**. What is her **third** number?





Name .....

# Count in multiples of two, five and ten

1. Usma eats **2** sandwiches. Then she eats **2** more. How many sandwiches has she eaten altogether?

2. Mr Green asks his class to count up in steps of **5**. Starting from **5** what is the next number they count?

3. Rose counts in steps of **2**. She starts counting at **10**. What are the next **three** numbers she counts?

4. Jing counts up in steps of **10**, starting from **23**. What are his next **3** numbers?

5. Start at **87** and count back in **fives**. Write down the next **3** numbers.





Name .....

# Count in multiples of two, five and ten

1. Usma counts **5** red apples and **5** green apples. How many apples does she count?

2. Ali is counting in steps of **2**. Starting from **5**, what are the next **3** numbers he counts?

3. **28** children are working in class. **Ten** children go outside to play. After 2 minutes, another **ten** children go out to play. How many children are still working?

4. Matt is counting back in steps of **5**. He starts at **73**. What are his next **2** numbers?

5. Can you help Jing fill in this number sequence?

**16** **26** ☐ **46** ☐ **66**





Name .....

# Compare and order numbers up to 20

**1** Ali wants to buy an ice cream. Do you think he would rather have **18p** or **8p** in his pocket?


_____ p

**2** Which number is larger: **20** or **15**?

_____

**3** Put a circle around the biggest number and a square around the smallest number in the list below.

**4** **6** **9** **3** **7**

**4** Put the numbers below in order of size from smallest to largest.

**12** **5** **18** **14** **8**

_____ _____ _____ _____ _____

**5** Rose writes down the number in the sequence above which is bigger than **5**, but smaller than **12**. What does she write?

_____





Name .....

# Compare and order numbers up to 100

**Use the numbers in the list below to answer all the questions on this page.**

**21 13 98 34 43 9**

**1** Ali writes down the largest number. What does he write?

**2** Olivia writes down the smallest number. What does she write?

**3** Ali writes all of the numbers that are more than **10**. Which numbers does he write?

**4** Which number is closest to **ten**?

**5** Can you put the numbers in order of size? Start with the smallest.

**smallest** **largest**





Name .....

# Identify one more or less than a given number up to 20

1. Jing has **5** chocolate bars. He eats **one**. How many does he have left?

2. Matt has **12** toy cars. He buys **one** more. How many does he have now?

3. Olivia has **20** coins. She uses **one** to buy a drink. How many coins does she have now?


4. Usma has **16** dresses. Her mum gives her **one** new dress. How many dresses does she have now?

5. Choose **two** numbers between **15** and **20** to make the number sentence below true.

☐ is one more than ☐

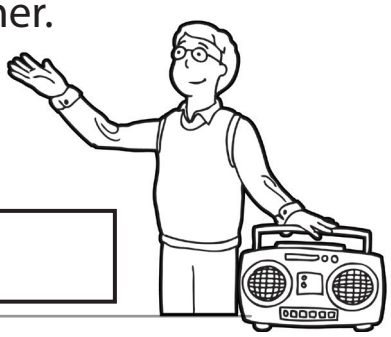




Name .....

# Identify one more or less than a given number up to 100

1. In Class 1, there are **30** children and **one** teacher. How many people are in Class 1 altogether?



2. There are **45** people in the hall. If **one** leaves, how many are left?

3. What is **one** less than **52**?

4. **90** children are playing outside. **One** more child comes out to play. How many children are playing out now?

5. Rose writes a pattern of numbers. What numbers has she missed out?

☐ **60** **61** ☐ **63**





Name .....

## Identify 10 more or less than a given number up to 100

1. Matt has **20** playing cards. His dad gives him another **10**. How many does he have now?

2. Olivia has **32** grapes in her lunch box. She eats **10**. How many grapes does she have left?

3. Ali builds a tower with **65** bricks. He adds **10** more bricks. How many bricks does he use altogether?

4. Which **2** numbers are **ten** more and **ten** less than **72**?

| 10 less | | 10 more |
|---|---|---|
| | 72 | |

5. Can you help Jing fill in the missing numbers in the pattern below?

| | | | | | |
|---|---|---|---|---|---|
| | 52 | 62 | | 82 | 92 |





Name .....

# Use the language of equal to, more than and less than (fewer)

1. Ali has **5** toy cars. Jing has **3** more than Ali. How many cars does Jing have?

2. **6** red apples and **4** green apples are equal to how many apples altogether?

3. Olivia has **13** sea shells. Usma has **5** less than Olivia. How many shells does Usma have?

4. Write the number that is **8** less than **22**.

5. Ali thinks of a number that is **9** more than **32**. What is Ali's number?





Name .....

# Use the language of equal to, more than, less than, most and least

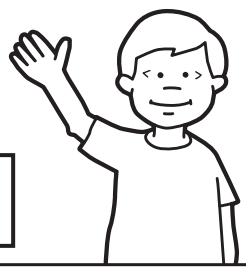
1. Matt is trying to think of the number that is equal to **9** add **6**. Can you help him?

2. Billy Budgie ate **7** seeds. Barney Budgie ate **9** seeds. Bertie Budgie ate **8** seeds. Who ate the least number of seeds?

3. Class **A** has **31** children. Class **B** has **28** children. Class **C** has **32** children. Which class has the most children?

4. Write the number that is **7** less than **19**.

5. Olivia has **13** conkers. Jing has **9** more conkers than Olivia. How many conkers does Jing have?







Name .....

# Read and write numbers from 1 to 20 in numerals and words

1. Olivia is **6** years old. Can you write her age using a word?

2. Miss Smith asks Rose to write **ten** as a numeral. What should she write?

3. Matt is writing a birthday card for his sister. His sister is **12**. How would he write this number using a word?

4. Write the number **eighteen** in numerals.

5. Ali writes out the numbers below in numerals, starting from the smallest to the largest. What does he write?

| twelve | nine | three | fifteen |
|---|---|---|---|
| | | | |





Name .....

# Read and write numbers from 1 to 20 in numerals and words

**1** How old are you? Write your age using a word.

**2** Circle the word that says **15**.

**fifteen** **fifty**

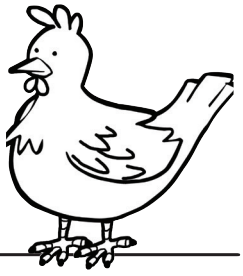
**3** Jing writes the word **eight** as a numeral. What does he write?

**4** Read the number words below and then write each number using numerals.

a **five**

b **thirteen**

**5** There are **19** chickens in a field. Write this number as a word.







Name .....

# Solve mixed problems involving number and place value

1. Rose has **20** stickers. She buys **10** more. How many does she have now?

2. Write the number **9** using a word.

3. Usma picks **18** daisies. She drops **five** of the daisies on her way home. How many does she have left?

4. Olivia says, "**14** is **one** less than **16**." Is she correct?

   **Yes / No**

   Explain how you know.

   .....

   .....

5. Which numbers are missing from the sequence below?

   **9** ☐ **19** **24** ☐ ☐ **39**

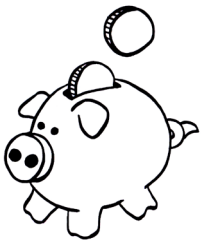




Name .....

# Solve mixed problems involving number and place value

**1** Rose has **£6**. She spends **£1**. How much does she have now?



£ ☐

**2** Ali is counting up in **fives**. He starts at **22**. What are his next **two** numbers?

☐ ☐

**3** Write the number that is **5** fewer than **13**.

☐

**4** Olivia has **15** strawberries. Usma has **18** strawberries. Who has more?

☐

**5** Jing has **12 pence**. His dad gives him **3 ten pence** coins. How much does Jing have now?


☐ p





Name .....

# Solve mixed problems involving number and place value

**1** Matt writes these numbers in order, starting with the smallest.
What does he write?

| 94 | 13 | 9 | 37 | 86 |
|---|---|---|---|---|
| | | | | |

**2** Rose is counting up in **twos**. She starts at **9**.
What are her next **3** numbers?

| | | |
|---|---|---|
| | | |

**3** Write the number **twelve** in numerals.

| |
|---|
| |

**4** Ali is **18**. His brother is **5** years younger.
How old is Ali's brother?

| |
|---|
| |

**5** Circle which is more:

**One** less than **45** **One** more than **42**





Name .....

# MASTERING

# Number and place value

**1** Matt, Ali and Rose have the results of their maths test.
Matt scored the highest with **10**.
Rose scored the least with **3**.
How many could Ali have scored?
Can you find **six** answers?

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

**2** I start from **3** and count in **twos** until I reach **9**.
How many even numbers do I say? ☐

Explain your answer.

.....

.....

**3** Draw lines to match these statements to the given numbers.
You can use each number only once.

| | |
|---|---|
| **an even number** | **seven** |
| **a number smaller than 5** | **four** |
| **a number between 8 and 6** | **three** |
| **an odd number larger than 8** | **nine** |





Name .....

**4** Usma, Rose and Olivia have **15** sweets between them.
Usma has the most sweets.
Rose has **one** less sweet than Usma and **one** more than Olivia.
How many sweets does each girl have?

**Usma** ☐ **Rose** ☐ **Olivia** ☐

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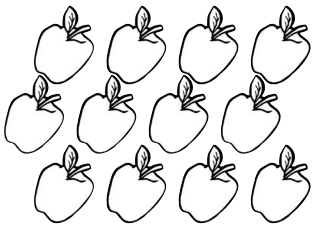
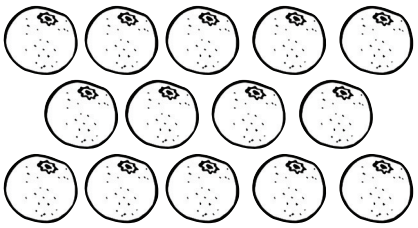
**5** Count the apples.



Count the oranges.



Complete this sentence using **apples** and **oranges**.

**There are more** ..... **than** .....

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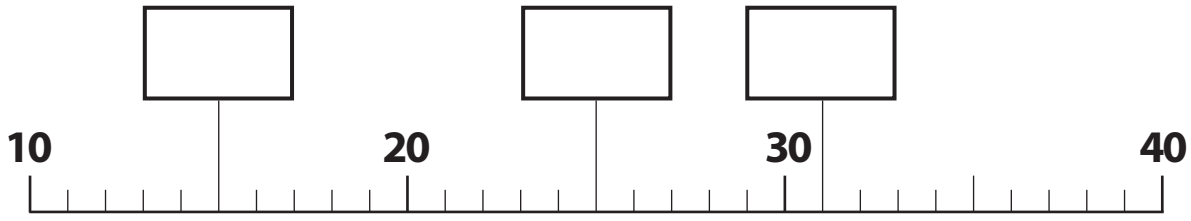
**6** Here is a number line. Fill in the missing numbers

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Name .....

**7** Mrs Hughes has cut up a **100** square. Fill in the missing numbers in each part.

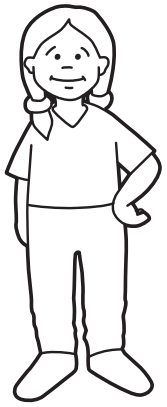
| | | |
|---|---|---|
| **11** | | **13** |
| | **22** | |
| | | **33** |

| | | |
|---|---|---|
| **74** | | |
| | **85** | |
| | | **96** |

| | | |
|---|---|---|
| | **38** | |
| | **48** | |
| | **58** | |

**8** Draw a circle around **one** number in each sequence that does not fit.

| | | | | | |
|---|---|---|---|---|---|
| a | **2** | **4** | **6** | **7** | **8** |
| b | **5** | **10** | **12** | **15** | **20** |
| c | **70** | **60** | **55** | **50** | **40** |
| d | **17** | **15** | **14** | **13** | **11** |



**9** Olivia counted on from **7**.
She wanted to stop on **3**.
Will she be able to do it?

Explain your answer.

**Yes / No**

.....

.....

**10** **Two** pupils from each class attend the school council.
There are **7** classes.
How many pupils attend the school council?





Name .....

**11** Usma has **one** more pencil than Rose.
Olivia has **one** less pencil than Rose.
Rose has **6** pencils.
How many pencils do Usma and Olivia have?

**Usma** ☐ **Olivia** ☐

---

**12** Matt counted on from **10**. How many steps will it take Matt to reach **16**?

☐

---

**13** Look at the cards:

| 3 | 2 | 6 | 4 | 5 |
|---|---|---|---|---|

**a** Use **two** cards to make numbers larger than **50**. How many can you make?

☐☐ ☐☐ ☐☐ ☐☐

☐☐ ☐☐ ☐☐ ☐☐

**b** Colour the **largest** number you have made in red.

**c** Colour the **smallest** number you have made in blue.

---



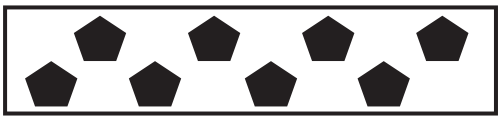


Name .....

**14** Fill in the empty boxes.

| | | | | |
|---|---|---|---|---|
| 47 | → | 10 more | → | ☐ |
| ☐ | → | 1 more | → | 40 |
| 25 | → | 10 more | → | ☐ |
| ☐ | → | 1 more | → | 60 |

**15** Draw lines to match the quantity of shapes to the correct total.



8

7

11

6





Name .....

**16** I count on from **30**. Put a circle around the number which I will **not** say.

**51** **35** **43** **27** **62**

**17** Fill in the gaps to show the numbers that are between the **two** given numbers.

| | | |
|---|---|---|
| **8** | | **6** |

| | | | | | |
|---|---|---|---|---|---|
| **4** | | | | | **9** |

| | | | | |
|---|---|---|---|---|
| **14** | | | | **10** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **11** | | | | | | | | **19** |

**18** Fill in the missing numbers in these sequences.

a) **14** **16** **18** ☐ **22** **24** **28**

b) **45** ☐ **35** **30** **25** **20** ☐ **10**

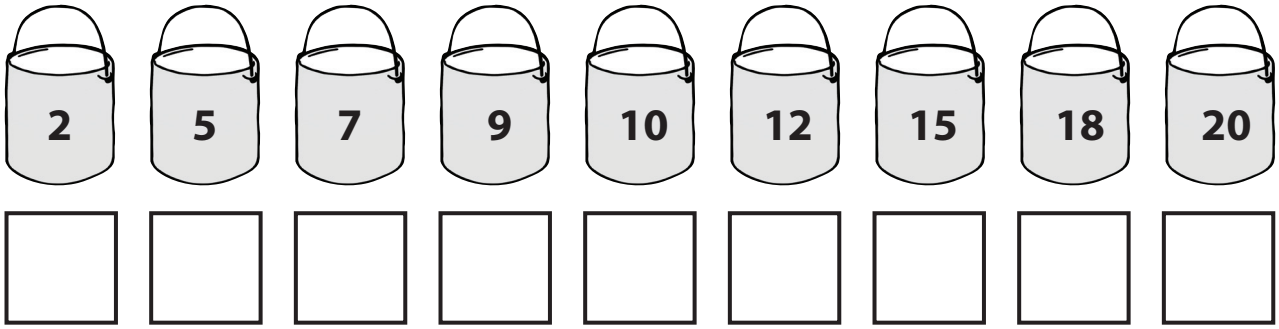
c) **30** **40** ☐ **60** **70** ☐ **90**



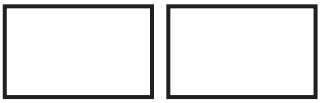


Name .....

**19** Matt and Ali are playing a game.
Matt must throw balls into buckets labelled with multiples of **2**.
Ali must throw balls into buckets labelled with multiples of **5**.
Which buckets must they throw balls into? Write **M** for Matt or **A** for Ali in the boxes below the buckets.

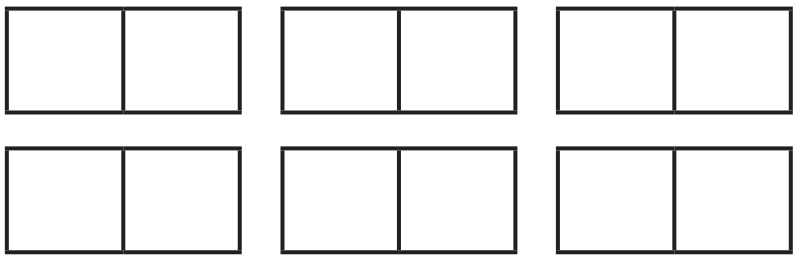



Which buckets could they both throw balls into?

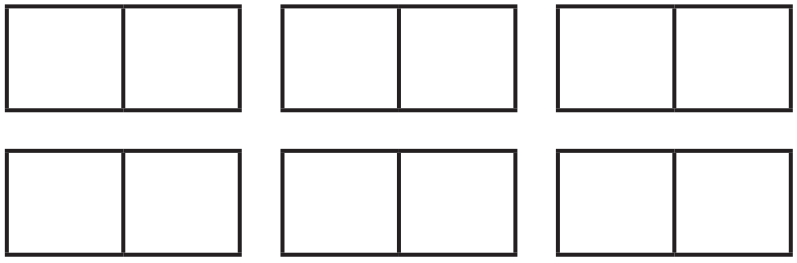


**20** Usma wants to make **2-digit** numbers using these cards:


a Make 6 different **2-digit** numbers.



b Write your **2-digit** numbers in order starting with the smallest.







Name .....

**21** Matt thought of a number. **One** less than his number was **23**.

a What was his number? ☐

Rose added **10** to Matt's number.

b What number did Rose make? ☐

Usma took **one** away from Rose's number.

c What number did Usma make? ☐

---

**22** Write numbers in the boxes to make these calculations correct.

**62** = ☐ + **2**

**35** = **30** + ☐

☐ = **70** + **4**





Name .....

**23** Ali started counting from **5**. Draw a circle around any number he would say if he:

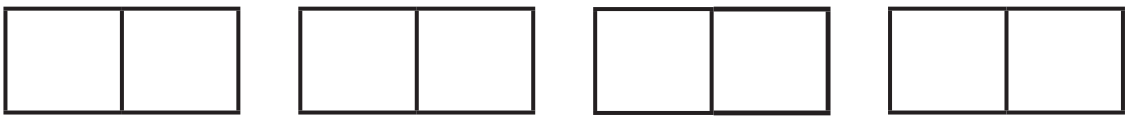
| | | | | | |
|---|---|---|---|---|---|
| a counted in **fives** | **65** | **17** | **12** | **30** | **15** |
| b counted in **tens** | **33** | **75** | **24** | **15** | **20** |
| c counted in **twos** | **8** | **13** | **9** | **6** | **7** |

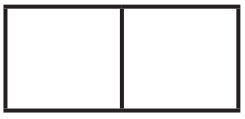
**24** Look at these cards:

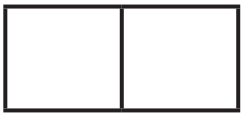
| | | | | |
|---|---|---|---|---|
| **3** | **7** | **5** | **1** | **4** |

Choose **two** cards to make:

a **4** numbers between **30** and **40**



b the largest number possible 

c the smallest possible even number 





Name .....

**25** Ali, Jing and Matt are thinking of numbers.

Ali's number is **12**.

Jing's number is **10** more than Ali's number.

Matt's number is **1** less than Jing's number.

Fill in the boxes to show Jing and Matt's numbers.

**Jing** ☐ **Matt** ☐

**26** Choose numbers to make these statements correct.

☐ is **1** more than ☐

☐ is **1** less than ☐

☐ is **10** more than ☐

☐ is **10** less than ☐





Name .....

# NUMBER

## Addition and subtraction

## Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

1 Write a number statement that shows the total of **12** and **13**.

2 Write a number statement that shows the difference between **9** and **3**.

3 Ali has **£15** and Jing has **£8** more.
How much does Jing have?

£

Show your answer as a number statement.

4 Usma runs **100 metres** in **25 seconds** and Rose runs **100 metres** in **18 seconds**.
How many **seconds** quicker is Rose than Usma?

Show your answer as a number statement.





Name .....

# Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

**1** Jing writes as many words as he can think of that mean the same as subtract. What might he write?

| | | |
|---|---|---|
| | | |

**2** Write the correct number statement to show **twelve** minus **seven** is **five**.

| |
|---|
| |

**3** Ali writes **2** addition statements that have the answer of **5**. What might he write?

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | + | | = **5** | | | + | | = **5** |

**4** Using numbers less than **12**, write **2** subtraction statements that have an answer of **three**.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | – | | = **3** | | | – | | = **3** |

**5** Write an addition statement and a subtraction statement using the numbers **8**, **3** and **11**.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | + | | = | | | – | | = | |





Name .....

# Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

**1** Write the missing numbers below.

**5** is one more than ☐

☐ is one more than **8**

---

**2** Write a number statement to show the sum of **four** and **five**.

☐

---

**3** Write a number statement to show the difference between **eight** and **three**.

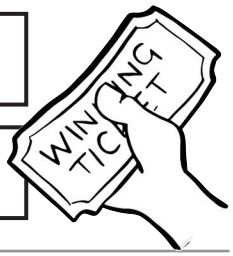
☐

---

**4** Dad won **£5** playing Bingo and then another **£12** on the Lottery. How much did he win in total?

Show your answer as number statement. **£** ☐

☐

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**5** Ali has **19** toy cars. He gives **seven** to his little brother. How many toy cars does Ali have now? ☐

Show your answer as a number statement.

☐

---





Name .....

# Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

1. Explain what the word '**total**' means.

.....

.....

2. Write the number statement below using words.

**4 + 6 = 10**

3. Write the number statement below using words.

**7 – 5 = 2**

4. Write a number statement to show that **three** and **six** put together equals **nine**.

5. Write a number statement to show the difference between **seven** and **two**.



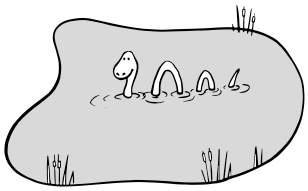


Name .....

# Use number bonds to 10

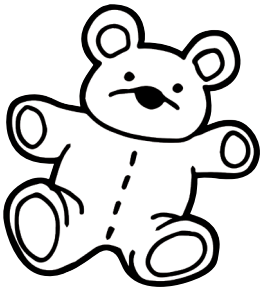
1. In the garden, there are **6** red flowers and **4** yellow flowers.
How many flowers are in the garden?

2. There are **7** frogs and **3** newts in a pond. How many frogs and newts are there altogether?



3. Rose has **10** cupcakes. She eats **none** of them.
How many does she have left?

4. Olivia has **10** teddies. She gives **one** to her sister.
How many teddies does she have left?



5. **Ten** birds are in a tree. **5** fly away. How many birds are left?





Name .....

# Use number bonds to and within 10

1. There are **5** girls and **4** boys in the library. What is the total number of children in the library?

2. Miss Blake is carrying **8** reading books. She puts **6** on a table. How many is she now carrying?

3. Olivia has **8** tropical fish. She buys **2** more. How many tropical fish does she have now?

4. **6** children are painting. **Four** more children start painting. How many are painting now?

5. There are **10** counters on the table. Jing takes away **3**. How many are left?

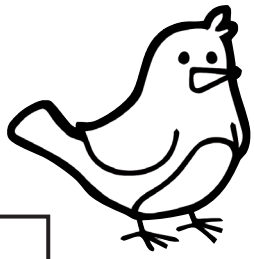




Name .....

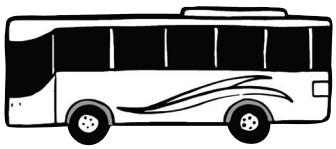
# Use number bonds to 20

1. Ali counted **16** sparrows and **4** robins in his garden. How many birds did he see altogther?



2. There are **12** boys and **8** girls playing football. How many children are playing football?

3. **20** people are on the bus. **10** people get off. How many people are left on the bus?



4. Jing has **20** sweets. **14** are fizzy sweets. How many are not fizzy?

5. Olivia has **9** red counters and **11** blue counters. How many counters does she have altogether?

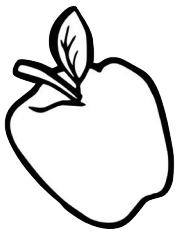




Name .....

# Use number bonds to and within 20

1. Rose buys **8** red apples and **6** green apples from the fruit shop. How many apples does she buy altogether?

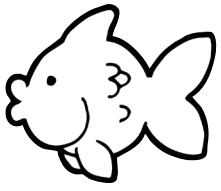


2. Matt has **20** stickers. He gives **9** to his brother. How many does he have left?

3. Olivia likes dolls. She has **7** with blonde hair and **12** with brown hair. How many dolls does she have altogether?

4. In the supermarket, there were only **20** bananas on the shelf. Mrs Smith bought **8**. How many bananas were left on the shelf then?

5. There are **11** fish in one tank and **9** in another. How many fish are there in both tanks altogether?







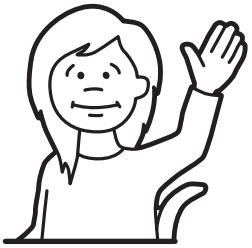
Name .....

# Add one-digit and two-digit numbers to 20, including zero

1. What is the total of **5** and **10**?

2. What is **8** more than **11**?

3. Olivia puts together the numbers **7** and **12**. Her answer is **20**.
Is she correct? **Yes / No**



Explain why.

.....

.....

4. Rose has **8** red beads and **11** blue beads. How many beads does she have altogether?

5. Mr Ahmed asks his class to add **12** and **0**.
What should their answer be?





Name .....

# Subtract one-digit and two-digit numbers to 20, including zero

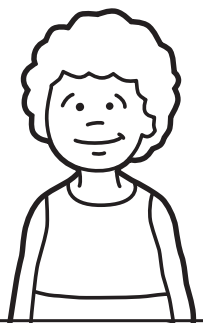
1. What is **10** take away **2**?

2. The zoo has **20** penguins. **5** penguins escape.
How many are left?

3. Olivia has **15** felt tips. Usma has **4** fewer felt tips than Olivia. How many does Usma have?

4. What is the difference between **20** and **6**?

5. Rose works out the distance on a number line between **17** and **8**.
What is her answer?







Name .....

## Add and subtract one-digit and two-digit numbers to 20, including zero

1. Mum buys **15** packets of crisps. Her family eats **5** in a week. How many packets are left?


2. Usma works out **3** more than **16**. What is her answer?

3. Jing puts together **6** red balls and **12** blue balls. How many balls does he have altogether?

4. What is **11** take away **zero**?

5. Matt puts **5** oranges in the fruit bowl. He adds another **11**. What is the total number of oranges in the fruit bowl?



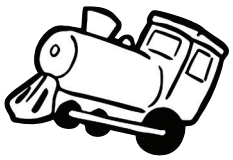


Name .....

# Solve one-step problems involving addition

1. Draw counters showing how you would find the answer to **2** add **5**.

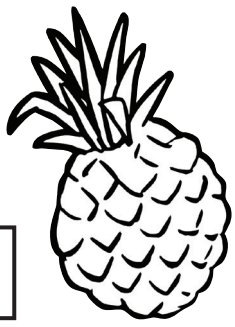
2. Matt has **4** toy trains. His mum buys him **3** more for his birthday. How many trains does Matt have now?



3. There are **5** sweets in a bag. Olivia puts **6** more sweets into the bag. How many sweets are in the bag now?

4. Jing has **8** coins. His dad gives him another **6** coins. How many does he have now?

5. Olivia buys **10** pineapples and **12** watermelons. How many pieces of fruit has she bought?







Name .....

# Solve one-step problems involving addition

1. Rose has **6** tennis balls. Usma has **4** tennis balls. How many tennis balls do they have altogether?

2. Usma has **5** red dresses and **6** pink dresses. How many dresses does she have altogether?

3. There are **16** children in class at **9 o'clock**. If **5** more children arrive late, how many children are in class now?

4. Matt says that **16 + 6 = 21**. Is he correct? Explain your answer.

**Yes / No**

.....

.....

5. Jing has **12** marbles and Matt has **9** marbles. How many marbles do they have between them?





Name .....

# Solve one-step problems involving subtraction

1. Olivia has **8** ice lollies. She gives **5** to her friends. How many does Olivia have left?

2. Draw counters showing how you would find the answer to **8** take away **5**.

3. A jar contains **12** biscuits. Ali eats **six** of them.
How many biscuits are left in the jar?

4. Olivia has **18** grapes in a bag. She gives **4** to her friend. How many grapes does Olivia have left?

5. Can you fill in the missing number?

**13 = ☐ + 4**





Name .....

# Solve one-step problems involving subtraction

1. Matt has **14** football cards. He gives **6** to his friend. How many cards does Matt have left?

2. Jing works out the distance between **12** and **6** on a number line. What is his answer?

3. There are **20** children eating their lunch. **7** children have a packed lunch. How many do not?

4. Usma has **18** strawberries. She eats **9**. How many does she have left?

5. Usma writes down **two** numbers that have a difference of **9**. What numbers might she write?

and





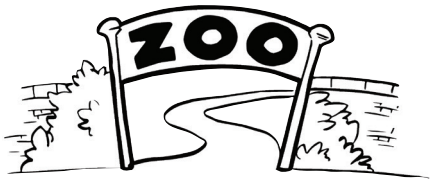
Name .....

# Solve one-step problems involving addition and subtraction

1. Grandma bakes **12** cakes. She gives **2** to Usma.
How many cakes are left?

2. What is the total of **5** and **11**?

3. The zookeeper has **18** bananas. He gives the monkeys **8** bananas.
How many are left?




4. Ali has **22** stickers. Matt has **10** more than Ali. How many stickers does Matt have?

5. Rose makes **12** bracelets. She gives **8** to her friends. How many bracelets does she have left?





Name .....

## Solve one-step problems involving addition and subtraction

1. There are **7** apples and **8** oranges in a bowl. How many pieces of fruit are there altogether?

2. Write the number that is **6** less than **12**.

3. Draw counters showing how you would find the answer to **3** add **6**.

4. Write down **2** subtraction statements, where the answer is **5**.

☐ – ☐ = **5** ☐ – ☐ = **5**

5. Help Olivia to fill in this missing number.

**7 =** ☐ **– 9**





Name .....

# Solve one-step problems involving addition and subtraction

1. Ali collects **5** red leaves and **6** brown leaves.
How many leaves has he collected altogether?

2. There are **12** chocolates in a box. Mum eats **7**. How many chocolates are left?

3. What is the difference between **16** and **10**?

4. In a field, there are **19** sheep. **11** sheep are eating grass.
How many sheep are not eating grass?

5. Olivia thinks of a number and subtracts **11**.
Her answer is **7**. What was the number she thought of?





Name .....

# Solve one-step problems involving addition (money)

1. Matt has a **10p** coin and a **5p** coin. How much money does he have altogether?

p

2. Usma buys a lolly for **10p** and a sweet for **8p**. How much money has she spent?

p

3. It costs **£5** for a t-shirt and **£8** for a pair of shorts. How much do they cost altogether?

£

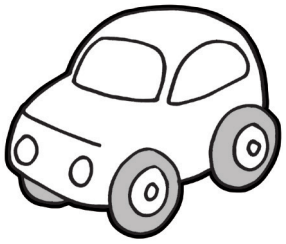
Prices in the school shop

| | |
|---|---|
| Yo-Yo - **15p** | Toy Car - **12p** |
| Sticker - **8p** | Bouncy Ball - **9p** |

4. Ali buys a Yo-Yo and a Sticker. How much does he spend altogether?

p

5. Mum buys Matt a Toy Car and a Bouncy Ball. How much does she spend in total?



p

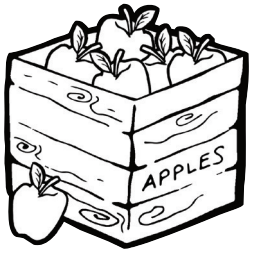




Name .....

# Solve one-step problems involving subtraction (money)

1. How much change does Jing get from **10p** if he buys an apple from the fruit shop for **8p**?




_____ **p**

2. Usma has **£9**. She buys a sandwich for **£2**. How much money does she have left?

**£** _____

3. Jing has saved **£15**. He spends **£7** on a football. How much money does he have left?

**£** _____

4. Ali has **19p**. He buys a cake for **5p**. How much money does he have left?


_____ **p**

5. Matt has **50p**. He buys a comic for **20p**. How much money does he have left?

_____ **p**





Name .....

# Solve one-step problems involving addition and subtraction (money)

1. Olivia has a **5p** coin and a **2p** coin. How much money does she have altogether?

p

2. Ali buys an apple for **12p**. How much change does he get from **15p**?

p

3. Matt buys a drink for **16p** and a lolly for **10p**. How much money has he spent?

p

4. Rose buys some chewy sweets. She spends **16p**. How much change does she have from **20p**?

p

5. Usma has **20p**. She buys a banana for **8p** and a notebook for **10p**. How much money does she have left?

p





Name .....

HeadStart primary

# PROBLEM SOLVING AND REASONING

YEAR 1

# Part 1

ANSWERS

## Year 1: NUMBER - Number and place value

**Page 1:** 1) 8 2) 13 3) 36 4) 69 5) 101

**Page 2:** 1) 7 2) 7 3) 10 4) 22 5) 93

**Page 3:** 1) 6 2) 14 3) 21 4) 55 5) 95

**Page 4:** 1) 7 2) 19 3) 17 4) £74 5) 96

**Page 5:** 1) 4 2) 7 3) 13 4) 24 5) 91

**Page 6:** 1) 10 2) 16 3) 25, 30, 35 4) 11 5) 40, 45, 50, 55

**Page 7:** 1) 16 2) 20 3) 31, 41 4) 42 5) 116

**Page 8:** 1) 4 2) 10 3) 12, 14, 16 4) 33, 43, 53 5) 82, 77, 72

**Page 9:** 1) 10 2) 7, 9, 11 3) 8 4) 68, 63 5) 36, 56

**Page 10:** 1) 18p 2) 20 3) circle 9, square 3 4) 5, 8, 12, 14, 18 5) 8

**Page 11:** 1) 98 2) 9 3) 13, 21, 34, 43, 98 4) 9 5) 9, 13, 21, 34, 43, 98

**Page 12:** 1) 4 2) 13 3) 19 4) 17 5) appropriate answer

**Page 13:** 1) 31 2) 44 3) 51 4) 91 5) 59, 62

**Page 14:** 1) 30 2) 22 3) 75 4) 62, 82 5) 42, 72

**Page 15:** 1) 8 2) 10 3) 8 4) 14 5) 41

**Page 16:** 1) 15 2) Billy Budgie 3) C 4) 12 5) 22

**Page 17:** 1) six 2) 10 3) twelve 4) 18 5) 3, 9, 12, 15

**Page 18:** 1) appropriate answer 2) fifteen circled 3) 8 4) a) 5 b) 13 5) nineteen

**Page 19:** 1) 30 2) nine 3) 13 4) no; appropriate explanation 5) 14, 29, 34

**Page 20:** 1) £5 2) 27, 32 3) 8 4) Usma 5) 42p

**Page 21:** 1) 9, 13, 37, 86, 94 2) 11, 13, 15 3) 12 4) 13 5) one less than 45; 44

## MASTERING - Number and place value

**Page 22:** 1) 4, 5, 6, 7, 8, 9 2) none; appropriate explanation
3) an even number - four, a number smaller than 5 - three, a number between 8 and 6 - seven, an odd number larger than 8 - nine

**Page 23:** 4) Usma 6, Rose 5, Olivia 4 5) oranges, apples 6) 15, 25, 31

**Page 24:** 7) square 1; 12, 21, 23, 31, 32, square 2; - 75, 76, 84, 86, 94, 95, square 3; 37, 39, 47, 49, 57, 59 8) 7, 12, 55, 14 9) no; appropriate explanation 10) 14

**Page 25:** 11) Usma 7, Olivia 5 12) 6 13 a) 52, 53, 54, 56, 62, 63, 64, 65 b) appropriate answer c) appropriate answer

**Page 26:** 14) 57, 39, 35, 59 15) squares 7, triangles 11, stars 6, pentagons 8

**Page 27:** 16) 27 17) 7, 5, 6, 7, 8, 13, 12, 11, 12, 13, 14, 15, 16, 17, 18
18) a) 20 b) 40, 15 c) 50, 80

**Page 28:** 19) Matt 2, 10, 12, 18, 20 Ali 5, 10, 15, 20 both 10, 20 20) a) 23, 24, 32, 34, 42, 43
b) 23, 24, 32, 34, 42, 43

**Page 29:** 21) a) 24 b) 34 c) 33 22) 60, 5, 74

**Page 30:** 23) a) 65, 30, 15 b) 75, 15 c) 13, 9, 7 24) a) 31, 34, 35, 37 b) 75 c) 14

**Page 31:** 25) Jing 22, Matt 21 26) appropriate answers

**Year 1: NUMBER - Addition and subtraction**

**Page 32:** 1) 12 + 13 = 25 2) 9 – 3 = 6 3) £23, £15 + £8 = £23 4) 7, 25 – 18 = 7 5) appropriate answer

**Page 33:** 1) appropriate answers 2) 12 – 7 = 5 3) appropriate answers 4) appropriate answers 5) 3 + 8 = 11 or 8 + 3 = 11 and 11 – 3 = 8 or 11 – 8 = 3

**Page 34:** 1) 4, 9, appropriate answer 2) 4 + 5 = 9 3) 8 – 3 = 5 4) £17, £5 + £12 = £17 5) 12, 19 – 7 = 12

**Page 35:** 1) appropriate explanation 2) four add six equals ten 3) seven minus five equals two 4) 3 + 6 = 9 5) 7 – 2 = 5

**Page 36:** 1) 10 2) 10 3) 10 4) 9 5) 5

**Page 37:** 1) 9 2) 2 3) 10 4) 10 5) 7

**Page 38:** 1) 20 2) 20 3) 10 4) 6 5) 20

**Page 39:** 1) 14 2) 11 3) 19 4) 12 5) 20

**Page 40:** 1) 15 2) 19 3) no; appropriate explanation 4) 19 5) 12

**Page 41:** 1) 8 2) 15 3) 11 4) 14 5) 9

**Page 42:** 1) 10 2) 19 3) 18 4) 11 5) 16

**Page 43:** 1) 7; appropriate drawing 2) 7 3) 11 4) 14 5) 22

**Page 44:** 1) 10 2) 11 3) 21 4) no; appropriate explanation 5) 21

**Page 45:** 1) 3 2) 3; appropriate drawing 3) 6 4) 14 5) 9

**Page 46:** 1) 8 2) 6 3) 13 4) 9 5) appropriate answer

**Page 47:** 1) 10 2) 16 3) 10 4) 32 5) 4

**Page 48:** 1) 15 2) 6 3) 9; appropriate drawing 4) appropriate answers 5) 16

**Page 49:** 1) 11 2) 5 3) 6 4) 8 5) 18

**Page 50:** 1) 15p 2) 18p 3) £13 4) 23p 5) 21p

**Page 51:** 1) 2p 2) £7 3) £8 4) 14p 5) 30p

**Page 52:** 1) 7p 2) 3p 3) 26p 4) 4p 5) 2p