Learning objectives

Children will:
- make number fact families using the same two parts and a whole.
- understand that equivalent number sentences have the same answer.

Common Core State Standards

Number & Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Use place value understanding and properties of operations to add and subtract.

2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Key vocabulary

addition, subtraction, inverse operations, equivalent number sentences

Extra assistance

Write equivalent number sentences on the board, missing the last number, eg $12 + 5 = 20 - \square$. Illustrate the left side of the equation using Base Ten blocks going into the left side of a balance scale; 12 and 5 more. Put 20 blocks in the right side. Discuss how to balance the scale: how many blocks need to be taken away from the right side? Write the number into the equation. Write a series of similar equations for the class to solve using scales and blocks.

Worksheet answers

Worksheet 1

1 **a** 68 **b** $13 + 72 = 85$ **c** $25 + 69 = 94$
  d 17 **e** $59 - 23 = 36$ **f** $91 - 48 = 43$
2 **a** $84, 84 - 29 = 55$ **b** $41, 41 + 41 = 82$ **c** $89, 89 - 58 = 31$
  d $37, 37 + 38 = 75$ **e** $79, 79 - 15 = 64$ **f** $44, 44 + 53 = 97$
3 **a** $32 + 46 = 78$ **b** $11 + 62 = 73$
    $46 + 32 = 78$ $62 + 11 = 73$
    $78 - 46 = 32$ $73 - 62 = 11$
    $78 - 32 = 46$ $73 - 11 = 62$
  c $75 + 23 = 98$ **d** $54 + 34 = 88$
    $23 + 75 = 98$ $34 + 54 = 88$
    $98 - 23 = 75$ $88 - 54 = 34$
    $98 - 75 = 23$ $88 - 34 = 54$

Worksheet 2

1 **a** 818 **b** $484 + 326 = 810$
  c $222 + 555 = 777$ **d** $987 - 471 = 516$
  e $676 - 411 = 265$ **f** $324 - 205 = 119$
2 **a** $891, 891 - 589 = 302$ **b** $209, 209 + 709 = 918$
  c $584, 584 - 159 = 425$ **d** $222, 222 + 653 = 875$
  e $670, 670 - 385 = 285$ **f** $420, 420 + 128 = 548$
3 **a** $629 + 131 = 760$ **b** $352 + 507 = 859$
    $131 + 629 = 760$ $507 + 352 = 859$
    $760 - 131 = 629$ $859 - 507 = 352$
    $760 - 629 = 131$ $859 - 352 = 507$

Worksheet 3

1 **a** ✓ **b** ✗ **c** ✗ **d** ✓ **e** ✓ **f** ✗
2 **a** 5 **b** 1 **c** 30 **d** 20 **e** 93 **f** 30
3 **a-h** Teacher to check
4 **a-f** Teacher to check

Worksheet 4

1 **a** 10 **b** Max 16, Bella 9
  c Lim 15, Yee 7
2 **a** $9 - 4 = 3 + 2$ **b** 12 minutes, $17 + 8 = 13 + 12$

Mathseeds Lesson sequence	TEACH Content and skills	PRACTICE Children will:	APPLY
Animated Lesson: Number sentences	Understand a sum as made of two parts and a whole. Learn that equivalent number sentences have the same answer.	make related number sentences and number fact families. Fill in the missing numbers in equivalent number sentences.	**Worksheet 1** 2-digit number fact families
Making sums work: Make the Number Bar, Letter Box, Treasure Chests, Fact Cubes	Make a sum to match the given answer. Calculate sums using all four operations. Use addition facts to 20. Identify related number sentences.	choose two numbers which add to the given number. Match sums to answers. Make pairs of numbers that add to a given total. Choose the two sums using the given numbers.	**Worksheet 2** 3-digit number fact families
Equivalent sums: Are They Equal?, True or False?, Balancing Act	Identify equivalent number sentences. Recognize true or false number sentences. Understand how equivalent sentences work.	work out if the two given sums have the same answer. Decide if a given number sentence is true or false. Make equivalent number sentences.	**Worksheet 3** Equivalent number sentences
Word problems: Puzzle Pieces, Fruit Shop	Interpret a two-step word problem. Add prices together. Work out the change from a bill.	choose the matching equations and answer. Find the total of two or more prices, and calculate change.	**Worksheet 4** Word problems
End of Lesson Quiz	Test understanding of lesson content and skills.	complete a 10 question quiz to earn a reward game.	*Reward game:* Build a Bot

Related Mathseeds Activities, Interactives, Apps, and Books
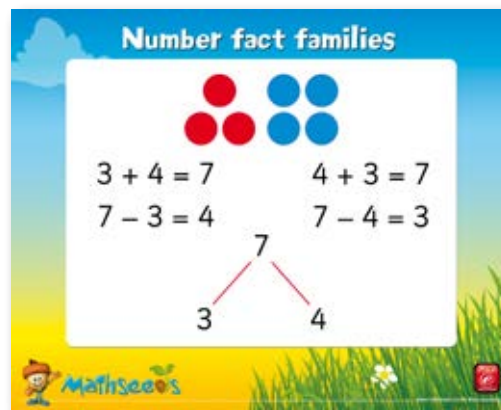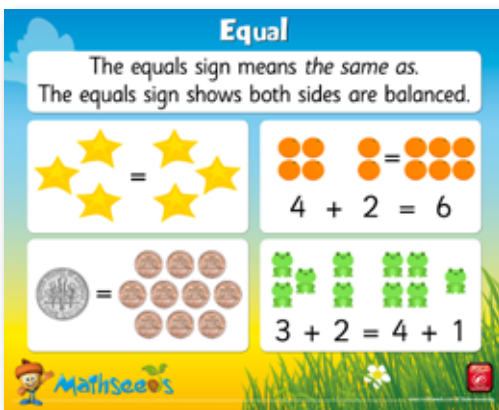
Classroom Activities

Fact Families

Make two groups of Base Ten blocks, eg a ten and 2 ones, plus 2 tens and a one. Students should write the number fact family depicted, eg 12 + 21 = 33, 21 + 12 = 33, 33 – 12 = 21, 33 – 21 = 12. Make more groups of blocks and write more number fact families until they have filled a page with equations.
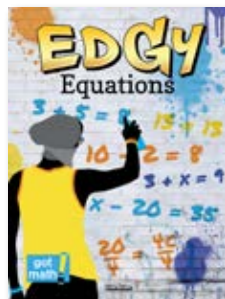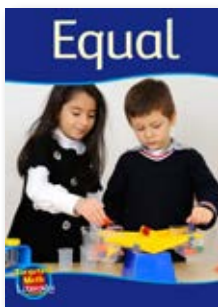
What's the problem?

Model some real life scenarios where equivalent number sentences are used, eg making equivalent weights, fair shares or equal amounts of time. Then give each student a pair of equivalent sums and ask them to write a word problem using the sums. Swap and share.

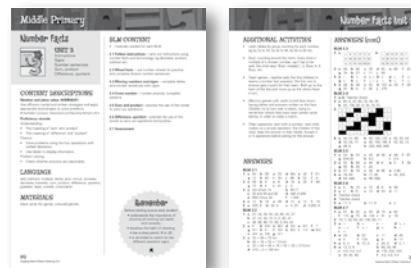### Mathseeds Posters (for printout or IWB)

Mathseeds Library Big Books (for IWB)

Targeting Math Middle Primary

Number Facts (Unit 2)

Math Apps

Mathseeds Play & Learn

Reward Game