

The Bare Necessities

Wiltshire Primary Mathematics Team
Making maths fun!

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Bare necessities

This year the Wiltshire Primary Maths team are focusing on raising the profile of maths through fun and games. Subsequently we have put together this resource to provide a fun way to consolidate some of the objectives that really make a difference.

The objectives included are all from the number strands within the renewed framework, judged to be 'bare necessities' for the children to have achieved by the end of that year. Tracking back to play games from previous years can also be fun!

When playing the games, encourage the children to explain what they are doing and talk about their reasoning. Such as "I'm plotting the point between _ and _ because...", or "If I add the numbers then..... because...." Try to make it the norm that "if it's your go, you're talking!!"

There is no need for complicated resources. The vast majority of these games require a 1- 100 square, digit cards or dice. None of these games are set in stone! Please feel free to adapt the rules and encourage the children to think of ways to change them as well! For example, if the game suggests number to 100 could it be played with decimal numbers up to 1? If the game suggests multiplying numbers could it be played by adding the numbers?

This flexible resource can be used in many ways! When planning a unit the games can be integrated into the daily maths lesson, but they can also be used as ongoing activities, possibly linked to curricular targets as appropriate.

Have Fun!

We would like to thank all the Wiltshire teachers who have contributed ideas to this book and the schools who have given us feedback.



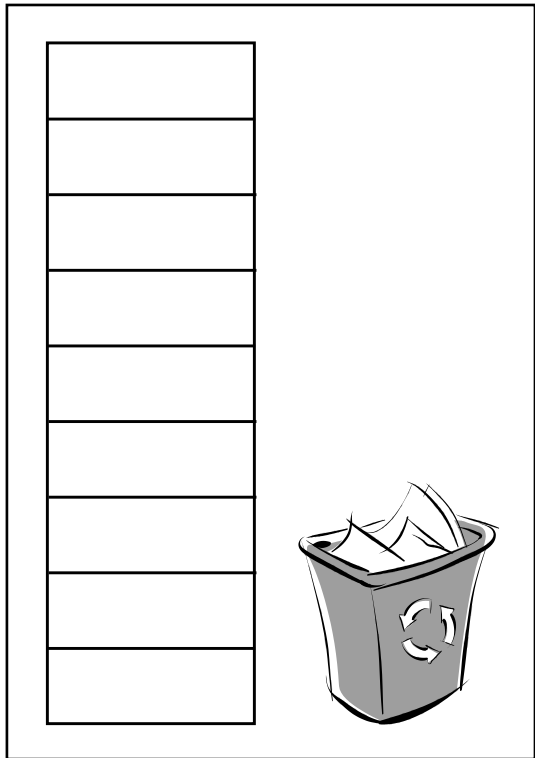
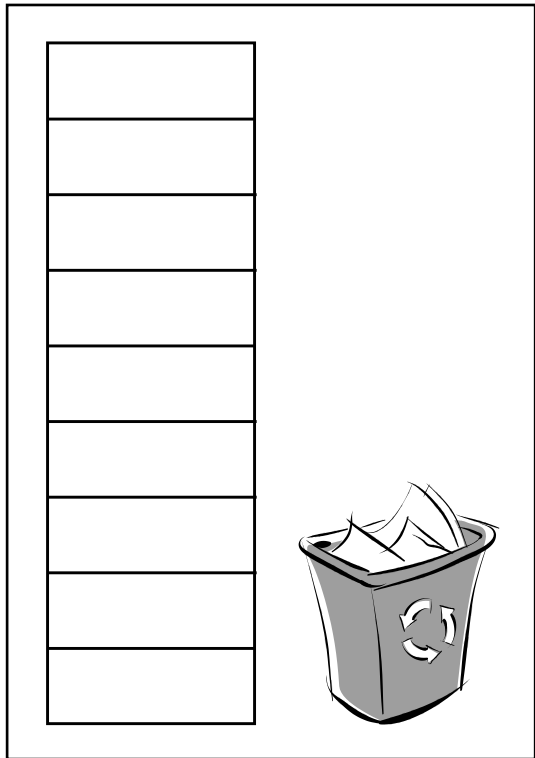
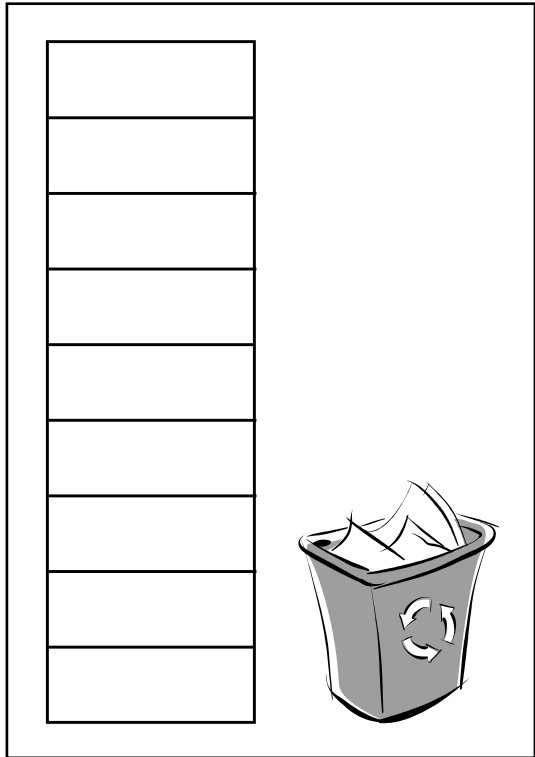
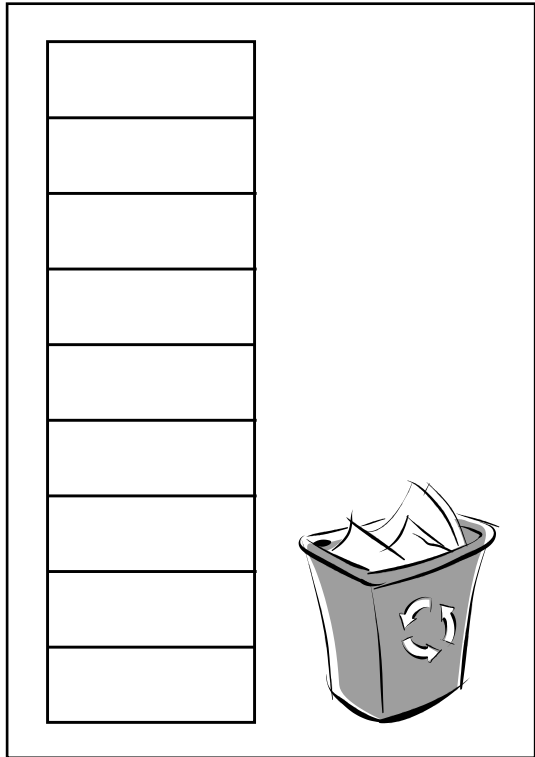
Year 1

Objective	Game	Resources
Count reliably at least 20 objects, recognising that when rearranged the number of objects stays the same; estimate a number of objects that can be checked by counting	<u>Count'em:</u> Players take it in turns to grab a handful of 'things,' count them and record the number. The aim of the game is to get each number from 10 – 20. The first one to do so is the winner	A box of things to count
Read & write numerals from 0 to 20, then beyond; use knowledge of place value to position these numbers on a number track & number line	<u>Ladder Game:</u> Shuffle cards and place in a pile, face down. Players take it in turns to turn over a card. Both players choose where to write the number on their ladder board. Once a number is placed it can not be moved! Keep going until 5 cards have been turned over. Aim to place all the numbers in order. If you can't place one, put it in the bin! The winner has most numbers in order. <u>Inbetweens:</u> Shuffle cards and place in a pile face down. Player A turns over 3 cards and puts them in order. Player B turns over 1 card and if it can be placed between any of player A's cards they score a point. Swap roles. First to 5 points wins.	0-20 cards, ladder board (See resources) 0-20 cards.
Say the number that is 1 more or less than any given number, and 10 more or less for multiples of 10	<u>More or less:</u> Players take it in turns to throw dice and move their counter. Land on blue – move on 1, Land on Red – move back 1. <u>You Choose:</u> Players take it in turns to turn over a card and decide whether to cover a number that is 1 more or 1 less than the number card. The first to cover 3 numbers in a line without an opponent's counter in between wins.	1-100 grid with lots of random numbers shaded in two colours. Dice, counters 0-20 cards, counters and 1-100 grid

Year 2 Order Board

<	<
<	<
<	<
<	<

Year 2 Ladder Boards



Objective	Game	Resources
Derive & recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; work out the corresponding subtraction facts	- Flashcards: show a number, children respond with complement to 5 or 10. Can be played as a class or in pairs. - Snap: Deal out 0 – 10 cards and play ‘Snap’. Children say ‘Snap’ when the two cards add to 10. Can also be played with a difference of 2. - Pelmanism: Spread out two packs of 0 – 10 cards face down on the table. Players take it in turns to reveal two cards. If the total is, for example, 10, they keep them, otherwise they turn them back over. - Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers on one hand. The first player to say the total of the fingers shown scores a point. First to 10 points wins. (Doing this in a rhythm, as in ‘paper, stone scissors’ whilst chanting ‘fishy fishy fingers’ makes this great fun!).	Cards Sets of 0 – 10 cards Sets of 0 – 10 cards
Use the vocabulary related to addition and subtraction and symbols to describe and record addition and subtraction number sentences	- Ten nice things: Two players choose ten items each. They take it in turns to throw a dice and choose that number of items from their opponent’s set. First to gain all items wins. - Target: Players start with 0. They take turns to throw the dice, choose to add or subtract the number. First to make exactly 10 wins.	Sets of 10 nice things, dice 0-9 dice



Year 2

Objective	Game	Resources
Count up to 100 objects by grouping them and counting in tens, fives or twos; explain what each digit in a two-digit number represents, including numbers where 0 is a place holder; partition two-digit numbers in different ways, including into multiples of 10 and 1	• How many?: One player grabs a handful of cubes. Both players estimate. Players choose whether to count in 2s, 5s or 10s to find how many. Closest estimate gets a point. First to score 10 points wins. • Biggest wins: Players throw the die and choose whether to use the digit as tens or ones in a two digit number. They throw the die again to generate the other digit. Players can not change the digit once written. When both players have made a 2 digit number, biggest wins and scores a point. First to 10 points wins. • Tens and ones: Players take turns to throw the 2 dice and make a 2 digit number. Cover it on the grid. First to get 3 in a row wins. • Split: Throw the 2 dice and make a 2 digit number. Partition it into 'a multiple of 10 and the rest' and cover the two numbers on the grid e.g. 73 = 50 + 23. If a number is already covered players can replace opponent's counter. First to get 3 in a row wins.	A box of things to count 0-9 dice 0-9 dice, 1-100 grid, counters Two 0-9 dice, 1-100 grid.
Order two-digit numbers and position them on a number line; use the greater than (>) and less than (<) signs	• Ladder Game: Take it in turns to generate a 2 digit number. Both players choose where to write the number on their board. Once a number is placed it must not be moved! Keep going until 9 numbers have been generated. Aim to place all numbers in order. If you can't place one, put it in the bin! Winner has most numbers in order.	0-9 or place value dice, ladder board each.

Year 1 Ladder Boards

1 - 100 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
91	92	93	94	95	96	97	98	99	100

Objective	Game	Resources
Order two-digit numbers and position them on a number line; use the greater than (>) and less than (<) signs	• Order!: Players take it in turns to turn over a card and choose where to write it on their board. Once a number is placed it must not be moved! Keep going until both players have turned over 4 cards. Players score a point for making a true number sentence. First to 10 points wins. • Line up: Players take it in turns to throw the dice twice. The first throw represents tens, the second is units. Plot the 2 digit number on the number line. First to get 4 in a line without opponent's points in between wins.	0-9 cards, order board 0 - 100 blank number line, 0-9 dice
Derive and recall all addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100	• Flashcards: show a number, children respond with complement to 10 or 20. Can be played as a class or in pairs. • Snap: Deal out 0 - 20 cards and play 'Snap.' Children say 'Snap' when the two cards add to 20. Can also be played with a difference of 2. • Pelmanism: Spread out two packs of 0 - 20 cards face down on the table. Players take it in turns to reveal two cards. If the total is, for example, 20, they keep them, otherwise they turn them back over. • Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers. The first player to say the total of the fingers shown scores a point. First to 10 points wins. (Doing this in a rhythm, as in 'paper, stone scissors' whilst chanting 'fishy fishy fingers' makes this great fun!). • Make 100: Each player writes down the multiples of 10 from 10 - 100. Players take turns to throw the dice to generate a multiple of 10. They calculate the complement to 100 and tick it on their list. First to tick all multiples of 10 wins.	Cards 0-20 cards 0-20 cards Multiples of ten dice

Objective	Game	Resources
Add or subtract mentally a one-digit number or a multiple of 10 to or from any two-digit number; use practical and informal written methods to add and subtract two-digit numbers	Jump on: Players take it in turns to throw the dice and move their counter. If they land on blue – they move on 10. If they land on red – they move on 5. (Change these numbers as appropriate!) The winner is the first to pass 100. Jump Back: As above but players start at 100 and play towards 0, moving back 10 or 5.	1-100 grid with lots of random numbers shaded in two colours, counters, a dice.
Derive and recall multiplication facts for the 2, 5 and 10 times-tables and the related division facts; recognise multiples of 2, 5 and 10	2s and 5s: Players take it in turns to throw the dice and move up the board. If they land on a multiple of 2 or 5 they score a point. A multiple of both scores 2 points! The winner is the player with the most points when a player reaches 100. Beat the clock: Shuffle 2 packs of 0 – 9 cards. Against the clock, turn over a card and multiply it by 2, 5 or 10, saying the answer to partner. Try to beat previous time. Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers. One player has to hold up 2, 5 or 10 fingers. The other can choose any number of fingers. The first player to say the product of the fingers shown scores a point. First to 10 points wins. (Doing this in a rhythm, as in 'paper, stone scissors' whilst chanting 'fishy fishy fingers' makes this great fun!).	1-100 grid, counters, dice 0-9 cards



Objective	Game	Resources
Calculate mentally with integers and decimals: $U.t \pm U.t$, $TU \times U$, $TU \div U$, $U.t \times U$, $U.t \div U$	Chunky: Agree a number to divide by. Players take it in turns to throw the dice to generate a 3 digit number. Decide what the biggest chunk of 7s is that can be made e.g. Throw 456, biggest chunk of 7s is 420 (60x7). Score the difference, in this case 36. Player with the lowest score after 5 throws each wins. Quick decimal add: Players generate a units and tenths number each. The first to add them gets a point. First to 10 points wins. Quick decimal difference: As above but players find the difference. Plot it: Decide which colour dice represents units and which represents tenths. Players take turns to generate two units and tenths numbers. Choose whether to add or find the difference and plot the answer on a 0 – 20 blank number line. First to get 4 numbers without opponent's number in between wins. Multiplication choice: Players take it in turns to generate 3 digits. They make a 2 digit and a 1 digit number and multiply them. They plot their answer on a 0-1000 blank number line. First to plot 4 numbers without opponent's number in between wins.	0-9 dice 0-9 dice 0-9 dice 0-9 dice, 0-1000 blank number line 0-9 dice, blank 0-1000 number line





Objective	Game	Resources
Add or subtract mentally combinations of one-digit and two-digit numbers	Target: Turn over 4 digit cards. Players compete to get as close to an agreed target as possible using each of the digits once and addition. You may set a time limit. Closest scores 2 points, equal closest, score 1 point each. First to 10 points wins. Add or Take: Players take turns to generate two 2 digit numbers. They then choose to add or subtract the numbers and cover the answer on the grid. (Addition answers are often not on the grid which forces more subtraction!) First to 3 in a line wins.	0-9 digit cards, timer 1-100 grid and digit cards, counters
Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000	Beat the clock: Shuffle 2 packs of 0 – 9 cards. Against the clock, turn over a card and multiply it by 2, 3, 4, 5, 6 or 10, saying the answer to partner. Players go through the pack as fast as they can, trying to beat previous time. Remainder: Players take turns to throw the dice and move their counter. Players divide the number they land on by 4 and score the remainder. The player with the highest score when first player passes 40, wins. (divide by 6, pass 60) Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers. One player has to hold up 2,3, 4, 5 or 6 fingers. The other can choose any number of fingers. The first player to say the product of the fingers shown scores a point and writes a letter of 'fishy fingers.' First to spell 'fishy fingers' wins. (Doing this in a rhythm, as in 'paper, stone, scissors' whilst chanting 'fishy fishy fingers' makes this great fun!).	0-9 cards, timer 1-100 grid, dice, counter each.
Multiply one-digit and two-digit numbers by 10 or 100, and describe the effect	Flip 'n Roll: Use dice to generate a 2 digit number then flip the coin. Heads means multiply by 10 and tails, by 100. The first to say the product gets a point. The first to 10 points wins the game.	Place value or 0-9 dice, coin

Objective	Game	Resources
Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000	Noughty noughty: Players take it in turns to choose a number on the 1-100 grid. Throw the dice and perform that operation on their chosen number. If correct they can cover the number. If incorrect play moves to the next player. First to get 4 in a row wins. (A calculator could be used to check, if necessary.)	1 - 100 grid, dice with x10, x100, x1000, +10,+100, +1000 on its faces, counters



Objective	Game	Resources
Recall quickly multiplication facts up to 10×10 and use them to multiply pairs of multiples of 10 and 100; derive quickly corresponding division facts	• Remainder choice: Players take turns to throw the dice and move up the board. Players choose whether to divide the number they land on by 6, 7 or 8. Score the remainder. Highest score when first player reaches 100 wins. • Beat the clock: Shuffle 2 packs of 0 – 9 cards. Against the clock, turn over a card and multiply it by 6, 7, 8, or 9, saying the answer to a partner. Try to beat previous time. • Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers. The first player to say the product of the fingers shown scores a point and writes a letter of 'fishy fingers.' First to spell 'fishy fingers' wins. (Doing this in a rhythm, as in 'paper, stone, scissors' whilst chanting 'fishy fishy fingers' makes this great fun!).	1-100 grid, dice, counters 0-9 cards, timer
Extend mental-methods for whole-number calculations, for example to multiply a two-digit by a one-digit number (e.g. 12×9), to multiply by 25 (e.g. 16×25), to subtract one near-multiple of 1000 from another (e.g. $6070 - 4097$)	• Chunky: Agree a number to divide by. Players take it in turns to throw the dice to generate a 3 digit number. Decide what the biggest chunk of 7s is that can be made e.g. Throw 456, biggest chunk of 7s is 420 (60×7). Score the difference, in this case 36. Player with the lowest score after 5 throws each wins. • Multiplication Choice: Players take in turns to generate 3 digits, make a 2 digit and a 1 digit number and multiply them. They plot their answer on a 0-1000 blank number line. First to get 4 numbers without opponent's number in between wins.	HTU place value dice 0-9 dice, 0-1000 blank number line

Year 4

Objective	Game	Resources
Partition, round and order four-digit whole numbers; use positive and negative numbers in context and position them on a number line; state inequalities using the symbols $<$ and $>$ (e.g. $-3 > -5$, $-1 < +1$) Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	• Target: Have a target number less than 10,000. Take turns to turn over 4 digit cards and make a four digit number as close to the target as you can. Score the difference between your number and the target. After 5 goes each, largest total loses! • Rounding target: As above but round to the nearest 10 or 100 before finding the difference. • Decimal plot: Players take it in turns to throw the dice to generate units and tenths. They plot their number on the line. First to get 3 numbers without opponent's number in between wins. • 2 place decimal plot: As above but using 0–1 number line and generating tenths and hundredths.	Digit cards Digit cards 0-9 dice, 0-10 blank number line 0-9 dice, 0-1 blank number line
Add or subtract mentally pairs of two-digit whole numbers (e.g. $47 + 58$, $91 - 35$)	• Flashcards: show number, children respond with a complement to 100, as a class or in pairs. • Quick add: Players generate a 2 digit number each. The first to add them gets a point. First to 10 points wins. • Quick difference: As above but players find the difference. • Plot it: Players take turns to generate two 2 digit numbers. Choose whether to add or find the difference and plot the answer on a 0 – 200 blank number line. First to get 3 numbers without opponent's number in between wins.	1-100 cards Digit cards or place value dice Digit cards or place value dice, 0-200 blank number line

Objective	Game	Resources
Derive and recall multiplication facts up to 10×10 , the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	Remainder choice: Players take turns to throw the dice and move up the 1- 100 grid. Players choose whether to divide the number they land on by 4 or 6. Score the remainder. Highest score when first player reaches 100 wins. Beat the clock: Shuffle 2 packs of 0 – 9 cards. Against the clock, turn over a card and multiply it by 7, 8 or 9, saying the answer to partner. Try to beat previous time. Fishy, fishy fingers: 2 children face each other and at the same time hold up some fingers. The first player to say the product of the fingers shown scores a point and writes a letter of 'fishy fingers.' First to spell 'fishy fingers' wins. (Doing this in a rhythm, as in 'paper, stone, scissors' whilst chanting 'fishy fishy fingers' makes this great fun!).	1-100 grid, dice, counters 0-9 cards, timer
Multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), understanding the effect; relate to scaling up or down	Ten times: Use dice to generate a 3 digit number then flip the coin. Heads means multiply by 10 and tails means multiply by 100. The first to say the product gets a point. The first to 10 points wins the game. Round and divide: Players take it in turns to generate a 3 digit number and round it off to the nearest 10. They then divide the result by 10 and cover the answer on the 100 grid. If a number is already covered they can replace their opponent's counter.	0-9 dice. Coin 0-9 dice, 1-100 grid, counters

Year 5

Objective	Game	Resources
Explain what each digit represents in whole numbers and decimals with up to two places, and partition, round and order these numbers	Target: Choose one target number with 1 decimal place, between 1 and 9. Players take turns to turn over 2 cards and make a number with 1 decimal place, as close to the target as they can. Score the difference between the number and the target. After 5 goes each, largest total loses! Rounding target: Choose one target number with 1 decimal place, between 1 and 9. Players take turns to turn over 3 cards to make a number with 2 decimal places, then round the number to the nearest 1 or tenth before finding the difference. After 5 goes each, largest total loses! 2 place decimal plot it: Players take it in turns to throw the dice to generate tenths and hundredths. They plot their number on the line. First to get 4 numbers without opponent's number in between wins.	0 -9 cards 0-9 cards 0-9 dice, 0-1 blank number line
Use knowledge of place value and addition and subtraction of two-digit numbers to derive sums and differences and doubles and halves of decimals (e.g. 6.5 ± 2.7 , half of 5.6, double 0.34)	Half or double plot it: Players take it in turns to throw the dice to generate units and tenths. Choose whether to halve or double and plot the answer on a 0 – 20 blank number line. First to get 4 numbers without opponent's number in between wins. Quick decimal add: Players generate a units and tenths number each. The first to add them gets a point. First to 10 points wins. Quick decimal difference: As above but players find the difference. Plot it: Decide which colour dice represents units and which represents tenths. Players take turns to generate two units and tenths numbers. Choose whether to add or find the difference and plot the answer on a 0 – 20 blank number line. First to get 4 numbers without opponent's number in between wins.	0 – 9 dice 0 – 9 Digit cards 0-9 Digit cards Two 0-9 dice if different colours