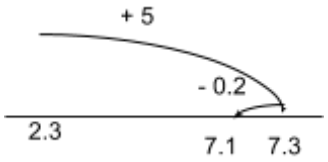
Mrs Meera Phadke

Jumping Past then Back with Decimals

I am learning to solve problems with decimals using tidy numbers and subtraction.

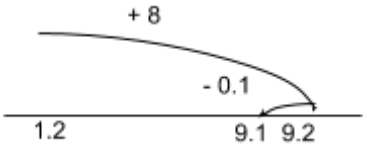
Examples:

1. 2.3 + □ = 7.1



2.3 + 5 = 7.3
7.3 – 0.2 = 7.1
and 5 – 0.2 = 4.8
so □ = 4.8

2. 1.2 + □ = 9.1



1.2 + 8 = 9.2
9.2 – 0.1 = 9.1
and 8 – 0.1 = 7.9
so □ = 7.9

Exercise 1

Use the strategy of skipping on the number line to do these additions. Do them like the examples above, by marking an empty number line and jumping past using a tidy number then back.

1.	2.4 + □ = 4.2	2.	2.7 + □ = 6.1	3.	2.6 + □ = 7.3
4.	4.3 + □ = 8.1	5.	4.6 + □ = 7.5	6.	5.3 + □ = 8.2
7.	1.7 + □ = 7.4	8.	3.8 + □ = 6.2	9.	4.9 + □ = 7.6
10.	1.8 + □ = 4.5	11.	2.2 + □ = 8.1	12.	2.7 + □ = 7.2
13.	8.6 + □ = 17.3	14.	1.27 + □ = 2.24	15.	1.77 + □ = 2.62
16.	5.9 + □ = 23.1	17.	1.46 + □ = 4.72	18.	3.26 + □ = 5.71

Exercise 2 Word problems

1. Two brothers, Mark and Paul, have $74.25 altogether. If Mark has $28.55 how much does Paul have?
2. Joe needs to save $92.50 to buy a PS2 game. His Dad gives him $26.75 to start his saving, how much more does Joe need to save to buy the game?
3. The width of my table is 0.8 metres. If the length is 1.3 metres how much longer is it than its width?
4. Write 3 more word problems of your own that can easily be done using this strategy of jumping past then back.

How Many Tens and Hundreds?

I am learning how many tens and hundreds there are in amounts of money.

Examples:

1. The Bank of Mathematics has run out of $1,000 notes. Alison wants to withdraw $2,315 in $1, $10, and $100 notes. How many one-hundred-dollar notes does she get?"

   She gets 5 $1 notes, 1 $10 note 3 $100 notes and then the $2000 has to be given in $100 as well. Each $1000 is the same as 10 $100 notes. So Alison gets 23 $100 notes.

2. Tickets to a concert cost $100 each. How many tickets can you buy if you have $3,215?

   The 15 in 3215 are not important. You get 2 tickets for the $200 and each 10 tickets for each $1000. So you get 2 + 30, 32 tickets in all.

3. How many hundreds are there in $2,897?

   You get 8 from the $800 and 10 for each $1000. So you get 28 hundreds.

Exercise 1

Write down how many $100 notes you would get for the following:

1.	$2,601	2.	$3,190	3.	$1,555
4.	$1,209	5.	$2,001	6.	$1,222
7.	$2,081	8.	$2,897	9.	$2,782
10.	$1,608	11.	$3,519	12.	$3,091
13.	$3 459	14.	$8 012	15.	$9 090
16.	$6 088	17.	$280	18.	$7 721

Exercise 2 **Challenging examples**

Find and record the number of **hundreds** in:

1.	13 409	2.	28 002	3.	78 370
4.	12 088	5.	45 290	6.	82 356

Find the number of **tens** in:

7.	3 709	8.	8 002	9.	8 579
10.	5 208	11.	4 829	12.	82 333
13.	12 897	14.	30 897	15.	50 890

16. Write two word problems that use this strategy.

Example: Subtraction - equal additions to both numbers

The answer to 173 - 97 (173+3 - 97+3) is the same as 176 – 100 = 76

Exercise 2

Do the subtraction problems by increasing both numbers like the example above.

16.	153 – 96	17.	181 – 95	18.	115 – 96	19.	126 - 99
20.	143 – 98	21.	165 – 97	22.	158 – 96	23.	187 - 95
24.	119 – 96	25.	238 – 197	26.	357 - 196	27.	537 - 195
28.	865 – 299	29.	800 – 394	30.	1000 - 496		

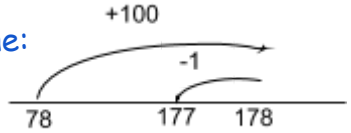
Round and Compensate 1

I am learning to use different strategies when a number is near 100.

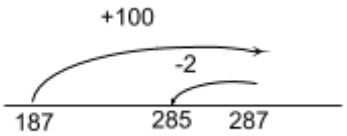
Examples:

1. 78 + 99 = □
   □ = 78 + 100 – 1
   = 177
   We add on the tidy number 100 to get 178, but this is one too many, so the answer is 177

   We can show this strategy on an empty number line:



2. 187 + 98 = □
   □ = 187 + 100 – 2
   = 285



Use number line jumps to do these problems.

1.	56 + 99	2.	67 + 98	3.	97 +63	4.	38 + 98
5.	55 + 97	6.	97 + 86	7.	53 + 97	8.	65 + 98
9.	76 + 99	10.	97 + 28				

Bigger numbers

11.	125 + 98	12.	199 + 85	13.	198 + 73	14.	197 + 84
15.	196 + 67	16.	126 + 99	17.	234 + 96	18.	297 + 88
19.	398 + 67	20.	314 + 397				

Exercise 2 Word problems

1. Tony Hawk gets 298 points in an Xbox game, then another 236 points the next day. How many points does he have altogether?
2. Crash Bandicoot crashes 46 times in level one and another 97 times in level two. How many crashes does he have altogether?
3. The artists drew 697 cartoons that got used in Shrek 2, and 259 that were not used. How many were drawn altogether?
4. Goldenhorse sold 596 disks in the first week and 234 more the next week. How many is that altogether?
5. Write two-word problems of your own that could be done using this strategy.

Round and Compensate 2

I can compensate when subtracting. I am practising this.

Example:

725 – 389 (389+11=400)

Rewrite as 725 – 400 + 11
725 – 400 = 325, 325 + 11 = 336

Exercise

Explain your answers as shown in the example.

1.	45 – 29	2.	54 – 39	3.	82 – 69	4.	73 – 48
5.	84 – 17	6.	92 – 27	7.	53 – 27	8.	65 – 28
9.	76 – 19	10.	67 – 28	11.	125 – 37	12.	143 – 85
13.	132 – 65	14.	174 – 28	15.	151 – 67	16.	126 – 49
17.	234 – 56	18.	227 – 88	19.	352 – 67	20.	314 – 37

Harder Problems

21.	425 – 107	22.	433 – 126	23.	452 – 236	24.	561 – 237
25.	680 – 358	26.	796 – 288	27.	837 – 279	28.	961 – 485

29.	922 – 874	30.	903 - 778	31.	8 – 5.9	32.	12 - 4.9
33.	18.3 - 14.8	34.	12.3 – 2.9	35.	19.4 – 8.5	36.	16.3 – 13.8
37.	18.6 – 12.9	38.	128.1 – 69.5	39.	253.3 – 49.4	40.	151.2 – 38.7 – 12.8

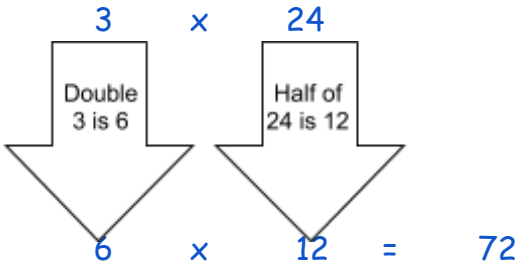
Word Problems

1. Mrs Jones has $105 in her purse. If she spends $98 at the canteen how much money does she have in her purse now?
2. Mike has 150 grapes and he eats 97 of them. How many grapes does he have left?
3. 574 people are on the waiting list for tickets to a special event at the stadium. If 96 people get tickets how many people are still on the waiting list?
4. Richard has 146 marbles. If he gives 92 of them to his sister how many does he have now?
5. Jim has $7.35 worth of coins left. He spends $2.90 on an ice-cream. How much does he have left?
6. Phil used to weigh 98.3kg. He now weighs 128.2 kg. How much has he gained?
7. Greg starts with 26.32grams of sodium chloride. He uses 12.89 grams in an experiment. How much does he have left?

Cut and Paste: Doubling and Halving

I am learning to solve multiplication problems using doubling and halving.

Example:



Exercise 1

Double these numbers:

1.	13	2.	4	3.	6	4.	20	5.	12
6.	8	7.	15	8.	7	9.	24	10.	18

Exercise 2

Halve these numbers:

11.	10	12.	18	13.	6	14.	22	15.	120
16.	28	17.	36	18.	1000	19.	50	20.	72

Exercise 3

Work the following out by doubling the first number and halving the second.

21.	6 x 8	22.	5 x 12	23.	3 x 14	24.	4 x 18	25.	7 x 20
26.	6 x 16	27.	25 x 8	28.	5 x 22	29.	3 x 24	30.	35 x 20

Exercise 4

Work the following out by doubling one number and halving the other.

31.	6 x 14	32.	12 x 3	33.	24 x 5	34.	18 x 3	35.	4 x 16
36.	18 x 2	37.	14 x 5	38.	16 x 3	39.	6 x 22	40.	20 x 45

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Exercise 5

41. There are 4 containers. Each container has 24 counters in it. How many counters are there altogether?

42. There are 5 grandfathers. Each grandfather has 14 grandchildren. How many grandchildren are there altogether?
43. There are 6 jars. Miss Young puts 25 V Pops in each jar. How many V Pops are there altogether?
44. Write three word problems of your own that could be done using this strategy.

Multiplication Smorgasbord 1: Compensation

I am learning to solve multiplication problems using a tidy number and compensating.

Example:

1. $3 \times 27 = (3 \times 30) - (3 \times 3)$
$= 80 - 9$
$= 51$

2. $36 \times 5 = (40 \times 5) - (4 \times 5)$
$= 200 - 20$
$= 180$

3. $29 \times 7 = (30 \times 7) - (1 \times 7)$
$= 210 - 7$
$= 203$

Exercise

Do the problems in your head first then check you are right by writing them down. Show them like the examples above.

1. $7 \times 38 =$	2. $6 \times 28 =$	3. $4 \times 27 =$	4. $57 \times 8 =$
5. $38 \times 4 =$	6. $57 \times 6 =$	7. $47 \times 5 =$	8. $4 \times 38 =$
9. $26 \times 5 =$	10. $38 \times 6 =$	11. $7 \times 78 =$	12. $9 \times 69 =$
13. $2 \times 218 =$	14. $348 \times 3 =$	15. $698 \times 3 =$	16. $599 \times 4 =$
17. $547 \times 8 =$	18. $347 \times 7 =$	19. $478 \times 5 =$	20. $737 \times 6 =$

Word Problems

21. There were 58 staff at the school and each of them had 6 classes a day. In total how many classes did they teach in one day?

22. There were 397 seats on one level of the theatre. There were 4 levels in total so how many seats were there altogether?

23. I run 68 km a month consistently. After one year how many km would I have run?

24. At the end of the year Mr Grump has to prepare mark 797 students exams. Each student sits at least 5 exams so how many papers does he mark? (Now you know why he was Mr Grump!)

Multiplication Smorgasbord 2: Place Value

I am learning to solve multiplication problems using my knowledge of place value.

Example:

1. $8 \times 24 = (8 \times 20) + (8 \times 4)$
$= 160 + 32$
$= 192$

2. $36 \times 5 = (30 \times 5) + (6 \times 5)$
$= 150 + 35$
$= 185$

3. $25 \times 17 = (20 \times 17) + (5 \times 17)$
$= (20 \times 10) + (20 \times 7) + (5 \times 10) + (5 \times 7)$
$= 200 + 140 + 50 + 35$
$= 425$

Exercise

Do the problems in your head first and check you are right by writing them down. Show them like the examples above.

1. $7 \times 34 =$	2. $6 \times 25 =$	3. $4 \times 27 =$	4. $52 \times 8 =$
5. $33 \times 4 =$	6. $52 \times 6 =$	7. $42 \times 5 =$	8. $4 \times 32 =$
9. $25 \times 5 =$	10. $38 \times 6 =$	11. $7 \times 73 =$	12. $9 \times 69 =$
13. $2 \times 215 =$	14. 325×4	15. $625 \times 7 =$	16. $571 \times 4 =$
17. $547 \times 8 =$	18. $367 \times 7 =$	19. $474 \times 5 =$	20. $733 \times 3 =$

Word Problems

21. There were 469 students involved in the cross country run. Each student needed 4 safety pins to pin on their number. How many safety pins were needed altogether?

22. The organizers of the event decided they needed a number on the back as well so how many safety pins were needed in total?

23. Every morning I have 7 Weetbix for breakfast. How many have I eaten after 168 days.

24. There are 27 desks in each room in C block. There are 9 rooms in C block so how many desks are there in total.

Multiplication Smorgasbord 3: Choose the Best Method

I am learning to solve multiplication problems using a variety of strategies.

Example:

Steve, Kate and Michael are asked to work out the same problem, but they each do it out differently:
"Each pizza has 27 pieces of salami on it. How many pieces of salami are needed for six pizzas?"

Steve:	Kate:	Michael:
Add 3 to each pizza.	Split into 10s and ones	Take 2 from each pizza
6 thirties are 180	6 twenties are 120	6 x 25 = 150
6 threes are 18	6 sevens are 42	6 x 2 = 12
180 - 18 = 162	120 + 42 = 162	150 + 12 = 162

Exercise

Solve these problems by using one of the methods above (some methods are better suited to certain problems). Make sure you write down the problem and any intermediate steps you use to get the answer.

Set A

1. 68 x 5 =
2. 4 x 97 =
3. 9 x 46 =
4. 99 x 3 =
5. 26 x 7 =
6. 8 x 103 =
7. 52 x 4 =
8. 5 x 96 =
9. 46 x 7 =
10. 51 x 6 =
11. 4 x 27 =
12. 37 x 3 =
13. 89 x 4 =
14. 5 x 93 =
15. 6 x 49 =

Set B

16. 8 x 179 =
17. 66 x 3 =
18. 348 x 4 =
19. 83 x 9 =
20. 6 x 78 =
21. 333 x 6
22. 486 x 5
23. 275 x 4
24. 306 x 7 =
25. 999 x 5 =
26. 7 x 127 =
27. 203 x 9 =
28. 7 x 895 =
29. 252 x 8 =
30. 247 x 7 =