The Mystery of the Best Sledging Spot

Winter Maths Mystery Game

It is a cold Saturday morning. As you wake up, you stretch and look out the window. To your delight, it has snowed heavily during the night. All your plans for the day are cancelled so you and some friends make it your mission to go sledging.

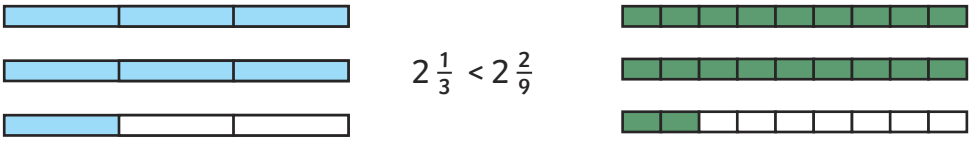
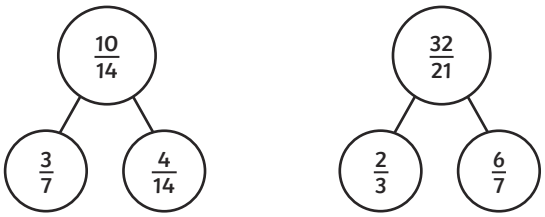
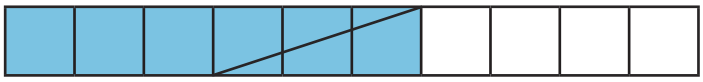
The roads have been gritted so you are able to travel to find the best place to sledge. Last year, you found a great place but you want to find somewhere new today and you are able to go a bit further away if needed. You pull on your hat, scarf, gloves and waterproof trousers and jump in your friend's car. Your friend's mum asks you where you all want to go but you are not sure which nearby area would have the best sledging spot.

Solve the clues to work out where the best sledging spot is.

Area	Distance Away in Miles	Is Parking Available?	Have You Heard of it Before?	Direction From Your House	Depth of Snow in Centimetres
Steep Peak	0.3	yes	yes	north	12
Powderdale	4.3	yes	no	south	10
Whitecombe	2.4	no	no	east	8
Driftville	3.8	yes	yes	north	7
Frostester	6.6	yes	no	east	10
Whiteview	5.8	no	yes	west	8
Thawtown	4.2	no	no	south	13
Coldville	3.2	yes	no	north	9
Icemoor	7.1	yes	no	east	8
Crispfield	5.3	no	no	south	14
Flurryholme	0.9	yes	yes	west	3
Steepester	1.8	no	no	north	6
Meltcoom	4.7	yes	no	west	9
Coldview	1.2	no	no	east	9
Whitemoor	2.7	no	no	south	7
Flakeville	7.8	no	yes	west	13
Chilly Peak	0.7	yes	no	east	4
Skidale	5.2	yes	no	north	6
Speedstan	4.4	no	no	south	10
Drifton	4.1	yes	no	south	14
Frostdale	6.7	no	yes	west	16
Coldlow	5.3	no	no	north	7
Chillmere	1.6	yes	no	north	12
Flakefirth	6.4	no	yes	east	17
Shiverdale	2.5	yes	no	west	6

Clue 1: True or False Fractions

Look at the fraction statements below and decide if each one is true or false. Then, tick the correct box. If there are more true ticks, you have heard of the area with the best sledging spot before. If there are more false ticks, you have not heard of the area before.

	True	False
This image represents $\frac{1}{3} + \frac{1}{4} = \frac{7}{12}$ 		
$\frac{11}{5} = 2\frac{1}{10}$		
 $2\frac{1}{3} < 2\frac{2}{9}$		
Both of the missing digits are 2. $\frac{11}{16} + \frac{3}{4} = \frac{11}{16} + \frac{1?}{16} = \frac{?3}{16} = 1\frac{7}{16}$		
		
The fractions are in ascending order. $\frac{9}{20}$ $\frac{1}{2}$ $\frac{7}{10}$ $\frac{3}{5}$ $\frac{3}{4}$		
The bar model shows the subtraction $\frac{6}{9} - \frac{1}{3} = \frac{3}{9}$ 		

Clue 1: You _____ heard of the best sledging spot before.

Clue 2: Rounding Puzzle

Read the clues and match the correct number to each child.
Use Zeke's number and the grid to find the answer to the second clue.

2 017 988	2 017 824	2 018 142	2 017 189

Amrit

My number is 2 018 000 when rounded to the nearest multiple of 1000.

Zeke

My number has 1 hundred.

Jia

My number is 2 017 990 when rounded to the nearest multiple of 10.

Abi

My number is 2 017 000 when rounded to the nearest multiple of 1000.

2 017 189 between 0 and 2	2 017 824 between 2 and 4
2 018 142 between 4 and 6	2 017 988 between 6 and 8

Clue 2: The best sledging spot is _____ miles away.

Clue 3: Calculations Maze

Starting from the top left-hand corner of the maze, find a path through the maze to discover which direction from your house the best spot for sledging is.
You can only move to the next box horizontally or vertically, not diagonally. Find the correct answers to move through the maze. If the answer is incorrect, find another path.

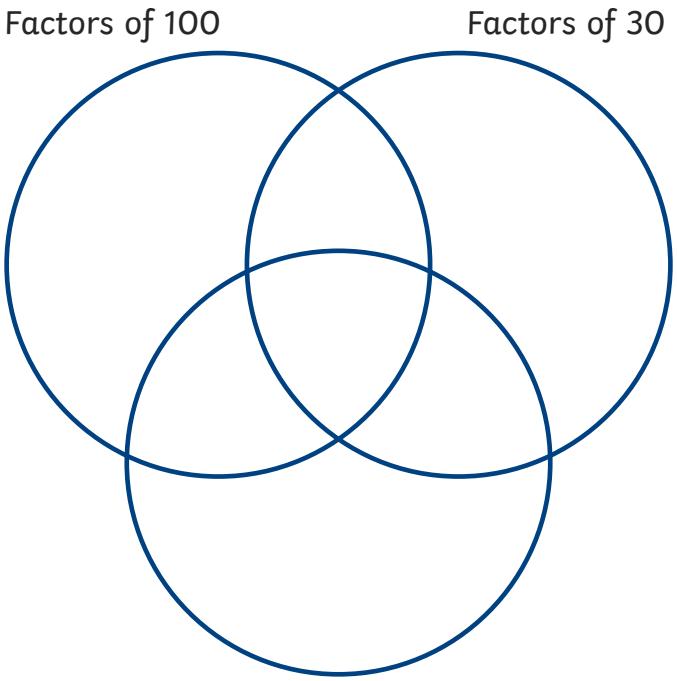
START	$900 \div 30 = 300$	160 225 is divisible by 2.	$82 + 10 + 64 = 158$
98 is divisible by 2	$(85 + 61) - 18 = 128$	$6^3 > 12^2$	$418 \times 99 = 42\,218$
$3 \times (6 + 1) = 19$	$9^2 < 81$	$1400 \div 20 = 70$	$134 + 94 - 78 = 166$
$52 + 98 + 35 = 137$	9 201 351 is divisible by 3.	$7 \times (9 - 6) = 21$	651 047 is divisible by 3.
$152 \times 999 = 151\,847$	$1026 + 53 - 82 = 997$	$5600 \div 4 = 224$	$(4 \times 11) - 1 = 40$
east	south	north	west

Clue 3: The best sledging spot is _____ from your house.

Clue 4: Factor Venn Diagram

Sort the numbers below into this Venn diagram. Then, match the numbers which are in the intersection (crossover of all three sets) to the words on the grid below. Rearrange them to find the answer to the fourth clue.

1	2	3	4	5	6	7	8	9	10	12	15	20	25	35	40	50	100



6 the	15 fourteen	1 eleven	35 three
8 nine	20 is	4 six	100 five
40 deep	2 and	12 snow	5 fifteen
3 eighteen	10 between	50 seven	25 twenty

Clue 4: The snow at the best sledging spot is _____ centimetres deep.

Clue 5: Correct Multiplications

Which of these calculations have been completed correctly? If there are more correct calculations, there is parking at the best sledging spot. If there are more incorrect calculations, there is no parking at the best sledging spot.

Th	H	T	O	
		7	3	
×		8	9	
	6	5_{2}	7	(73 × 9)
5	6_{2}	4	0	(73 × 80)
5	2	9	7	
1				

Th	H	T	O	
		5	9	
×		4	2	
	1	1_{1}	8	(59 × 2)
2	3_{3}	6	0	(59 × 40)
2	4	7	8	

Th	H	T	O	
	2	3	8	
×		2	7	
1	6_{2}	6_{5}	6	(238 × 7)
4	7_{1}	6	0	(238 × 20)
6	4	2	6	
1	1			

193 × 57 = 11 001

247 × 25 = 6236

TTh	Th	H	T	O	
	2	5	7	3	
×			3	2	
	5_{1}	1_{1}	4	6	(2573 × 2)
7_{1}	7_{2}	1	9	0	(2573 × 30)
8	2	3	3	6	
1		1			

HTh	TTh	Th	H	T	O	
		4	9	1	7	
	×			8	5	
	2	4_{4}	5	5_{3}	5	(4917 × 5)
3_{3}	9_{7}	3_{1}	3_{5}	6	0	(4917 × 80)
4	1	7	9	1	5	
1			1			

Clue 5: The _____ parking at the best sledging spot.

Your investigation is complete.
The best sledging spot is at _____.