

The Mystery of the Pine Cone Penguin



The children in year 4 are busy preparing for their end-of-term winter fair. They are making pine cone penguins to sell on their stall to raise money for a trip to the pantomime at the local theatre.

The actor playing Dame Twinkl in this year's pantomime is coming to open the fair and choose their favourite pine cone penguin. The prize will be VIP backstage passes for the child who created the penguin and their family.

Can you solve the clues to work out which of the pine cone penguins caught Dame Twinkl's eye and won the VIP tickets?

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Name of Penguin	Type of Tree	Colour of Feet	Accessories	Pattern on Scarf	Creator's Table Number
Alaska	fir	yellow	bow tie	plain	1
Breeze	pine	orange	hat	stripy	4
Chilly	larch	black	earmuffs	spotty	3
Drench	larch	black	skis	stripy	2
Emperor	spruce	yellow	hat	plain	3
Flurry	larch	black	earmuffs	plain	3
Glacier	spruce	orange	bow tie	stripy	2
Huddle	larch	black	skis	plain	4
Icicle	fir	orange	hat	stripy	3
Jack	fir	black	earmuffs	stripy	1
Kowalski	larch	yellow	bow tie	spotty	2
Lola	pine	black	bow tie	spotty	3
Macaroni	spruce	orange	skis	stripy	3
Norbert	pine	black	bow tie	plain	4
Oreo	larch	black	earmuffs	plain	1
Polar	fir	yellow	earmuffs	stripy	4
Quinn	larch	orange	hat	spotty	3
Rocky	pine	orange	earmuffs	spotty	2
Snowflake	fir	black	skis	plain	4
Tux	fir	yellow	skis	spotty	2
Ultimo	larch	orange	hat	stripy	1
Vortex	larch	black	bow tie	plain	1
Waddle	fir	orange	bow tie	spotty	3
Yeti	pine	black	earmuffs	stripy	2
Zero	spruce	yellow	hat	spotty	4

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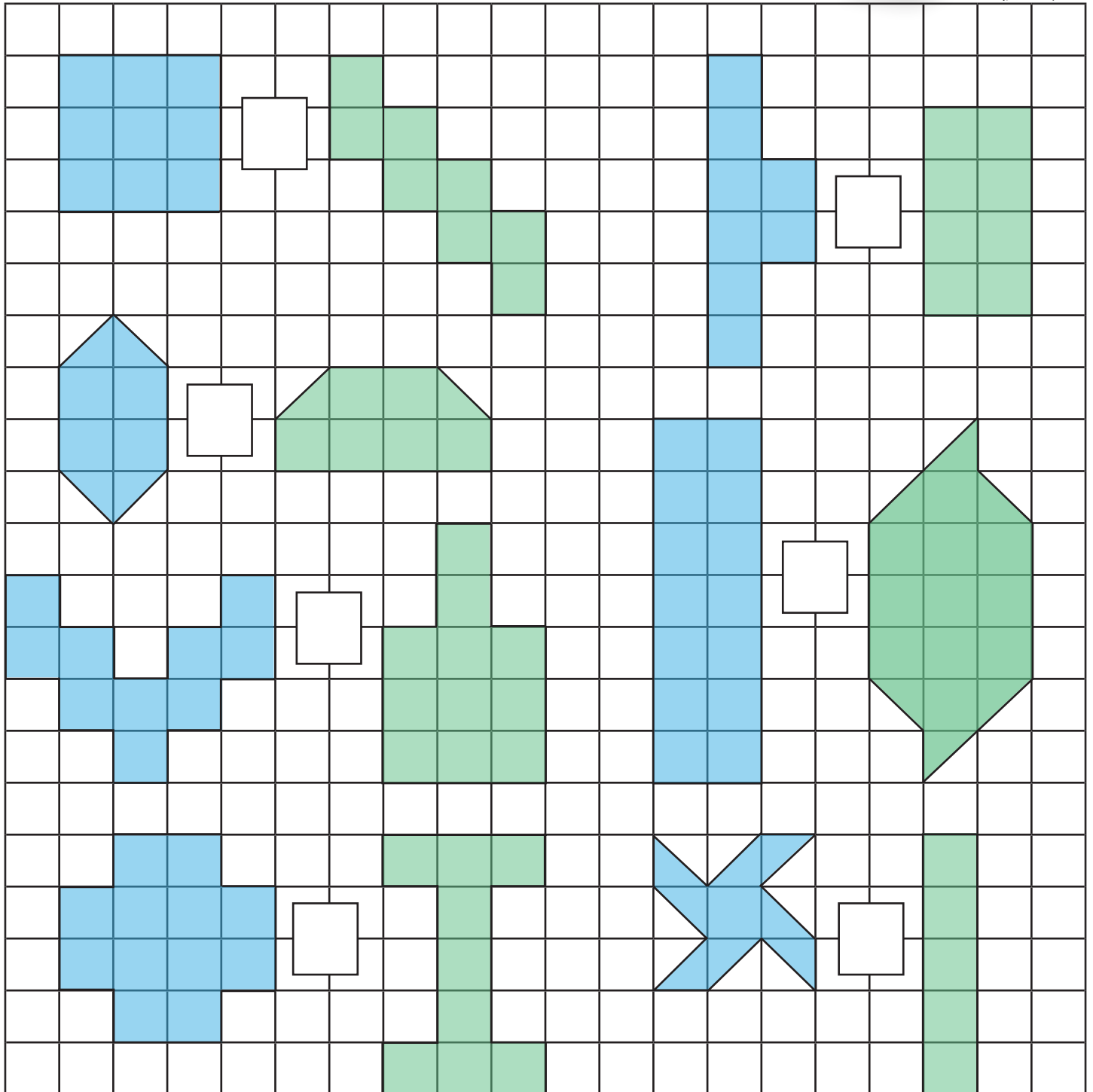
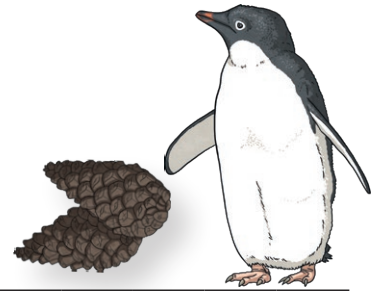
Clue 1: Comparing Area

Use $<$, $>$ or $=$ to compare the area of the shapes.

If there are more < symbols, the winning penguin's feet are yellow.

If there are more = symbols, the winning penguin's feet are black.

If there are more > symbols, the winning penguin's feet are orange.



Clue 1: The winning pine cone penguin's feet are _____.

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Clue 2: Odd One Out

Solve the calculations to identify the odd one out in each row.

The column with the most odd ones out will reveal which pattern is on the scarf of the winning pine cone penguin.



$2 \times 3 \times 5 =$	$5 \times 6 =$	$7 \times 4 =$
$25 \div 25 =$	$5 \times 5 =$	$25 \times 1 =$
$7 \times 1 =$	$56 \div 8 =$	$48 \div 6 =$
$3 \times 0 =$	$12 \div 12 =$	$12 \times 0 \times 5 =$
$12 \times 7 =$	$4 \times 6 \times 3 =$	$9 \times 8 =$
$3 \div 3 =$	$18 \div 6 =$	$3 \times 1 =$
$10 \times 1 =$	$10 \times 0 =$	$10 \div 1 =$
The pine cone penguin's scarf is plain .	The pine cone penguin's scarf is stripy .	The pine cone penguin's scarf is spotty .

Clue 2: The winning pine cone penguin's scarf is _____.


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Clue 3: Multiples

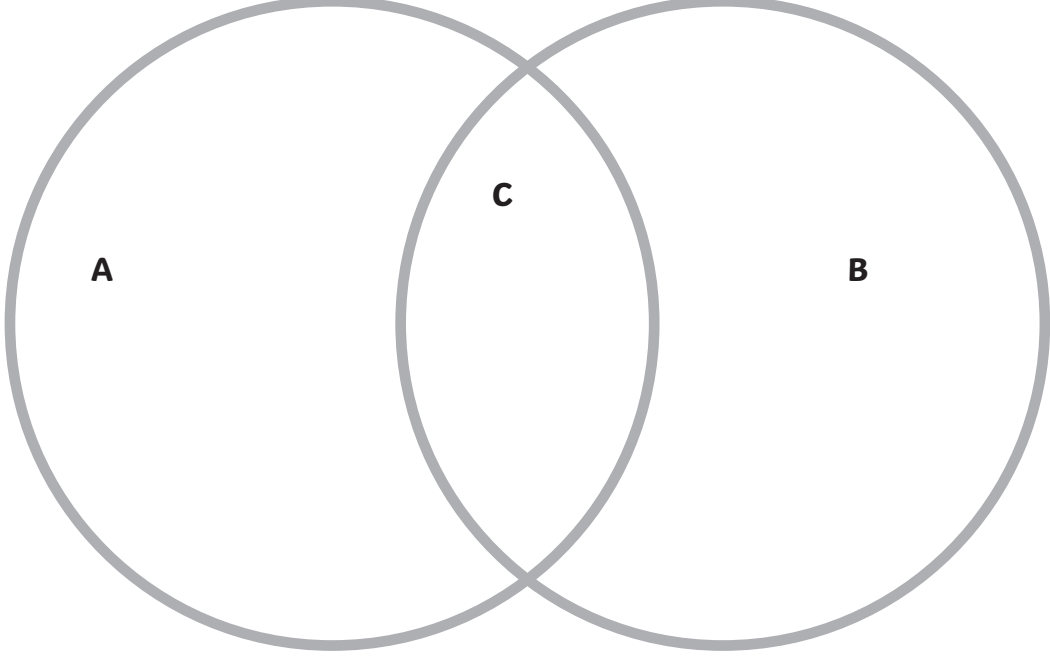
Sort these numbers in the grid into the Venn diagram.

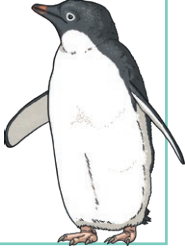
0	6	10	14	18	21	28	30	32	53	56	77
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Then, circle the numbers which appear in section C or D of the Venn diagram in the grid below and find the corresponding words. Rearrange the words to find out which type of tree the winning pine cone came from.



Multiples of 3 Multiples of 7





0 from	6 fir	10 a	14 was
18 on	21 tree	28 pine	30 growing
32 came	53 larch	56 forest	77 spruce

Clue 3: The winning pine cone _____.

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Clue 4: Calculation Count

Complete the following calculations. Then, count the number of times the digits 1, 2, 3 and 4 appear in the answers. The missing digit that appears the most is the table number the creator of the winning penguin sat on.



	Th	H	T	O
	5	7	0	2
-	1	4	6	1

	Th	H	T	O
	3	7	1	4
+	2	4	7	1

	Th	H	T	O
	3	8	5	2
-	1	2	3	4

	Th	H	T	O
	4	3	6	5
+	2	7	5	4

	Th	H	T	O
	5	5	3	9
-	2	4	5	6

	Th	H	T	O
	4	2	9	7
+	2	9	4	1

	Th	H	T	O
	5	7	8	3
-	1	6	7	8

	Th	H	T	O
	3	2	6	6
+	6	0	8	1

	Th	H	T	O
	6	5	5	7
-	3	4	7	1

Missing Digit	1	2	3	4
Number of Times it Appears in Answers				

Clue 4: The child who created the winning pine cone penguin sat on table number _____.

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Clue 5: Roman Numeral Codebreaker

Complete the table below. Match each answer to the corresponding letter in the grid to spell out where the winning penguin is wearing its accessory.

Roman Numeral	Number	Letter
XV		
C		
XXIV		
X - III		
C - L		
XII + VIII		
XL		
LXXVI		
XXX + XX		

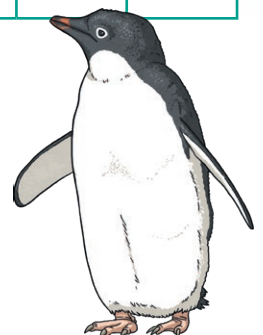
A	B	C	D	E	F	G	H	I	J	K	L	M
40	10	85	6	20	32	75	18	24	11	9	60	25
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100	15	64	30	76	50	7	26	90	2	5	28	8

Clue 5: The winning pine cone penguin is wearing an accessory

_____.

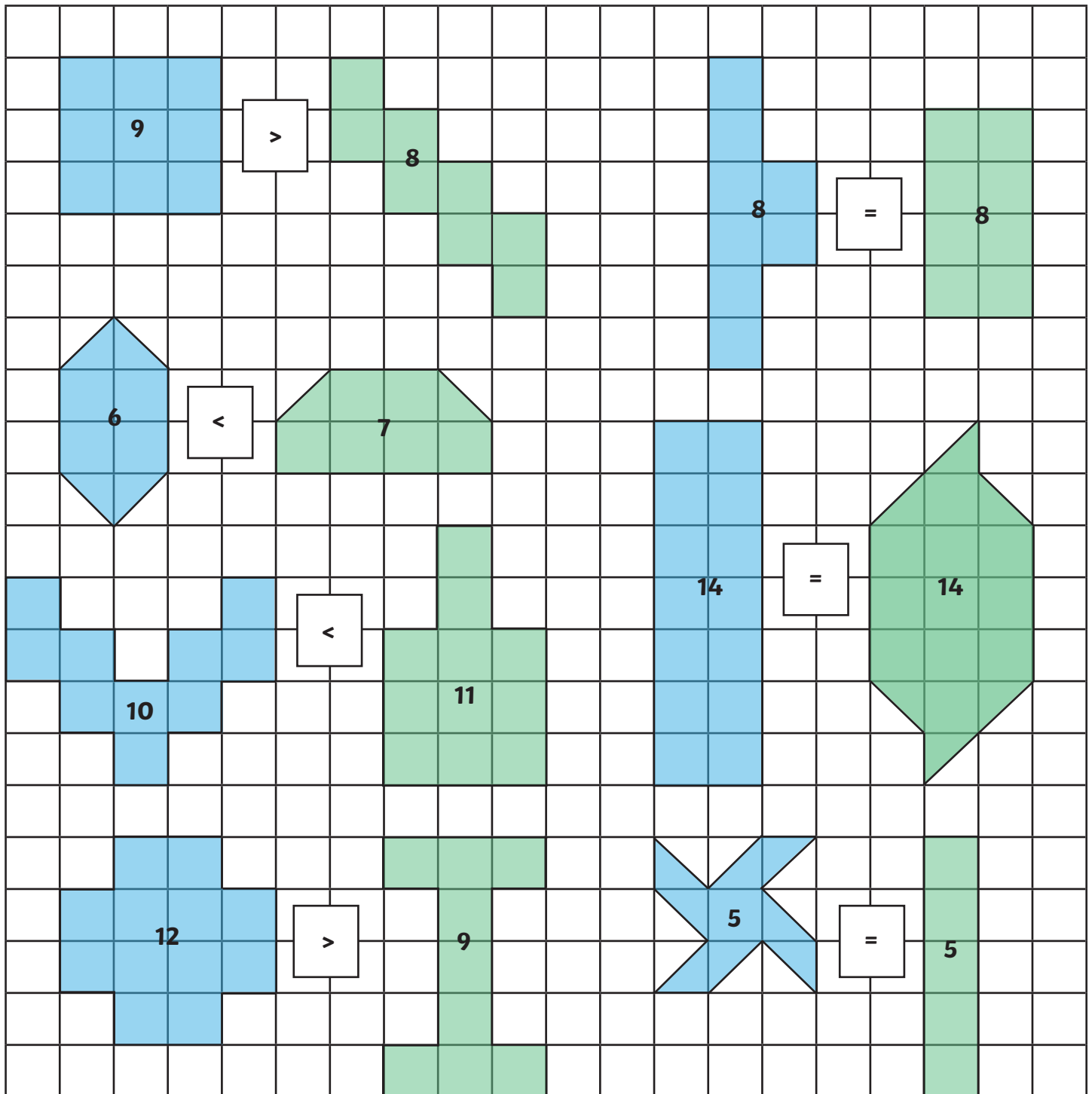
Your investigation is complete.

The winning pine cone penguin was _____.



The Mystery of the Pine Cone Penguin **Answers**

Clue 1: Comparing Area **Answers**



Clue 1: The winning pine cone penguin's feet are **black**.

The Mystery of the Pine Cone Penguin **Answers**

$2 \times 3 \times 5 = 30$	$5 \times 6 = 30$	$7 \times 4 = 28$
$25 \div 25 = 1$	$5 \times 5 = 25$	$25 \times 1 = 25$
$7 \times 1 = 7$	$56 \div 8 = 7$	$48 \div 6 = 8$
$3 \times 0 = 0$	$12 \div 12 = 1$	$12 \times 0 \times 5 = 0$
$12 \times 7 = 84$	$4 \times 6 \times 3 = 72$	$9 \times 8 = 72$
$3 \div 3 = 1$	$18 \div 6 = 3$	$3 \times 1 = 3$
$10 \times 1 = 10$	$10 \times 0 = 0$	$10 \div 1 = 10$
The pine cone penguin's scarf is plain .	The pine cone penguin's scarf is stripy .	The pine cone penguin's scarf is spotty .

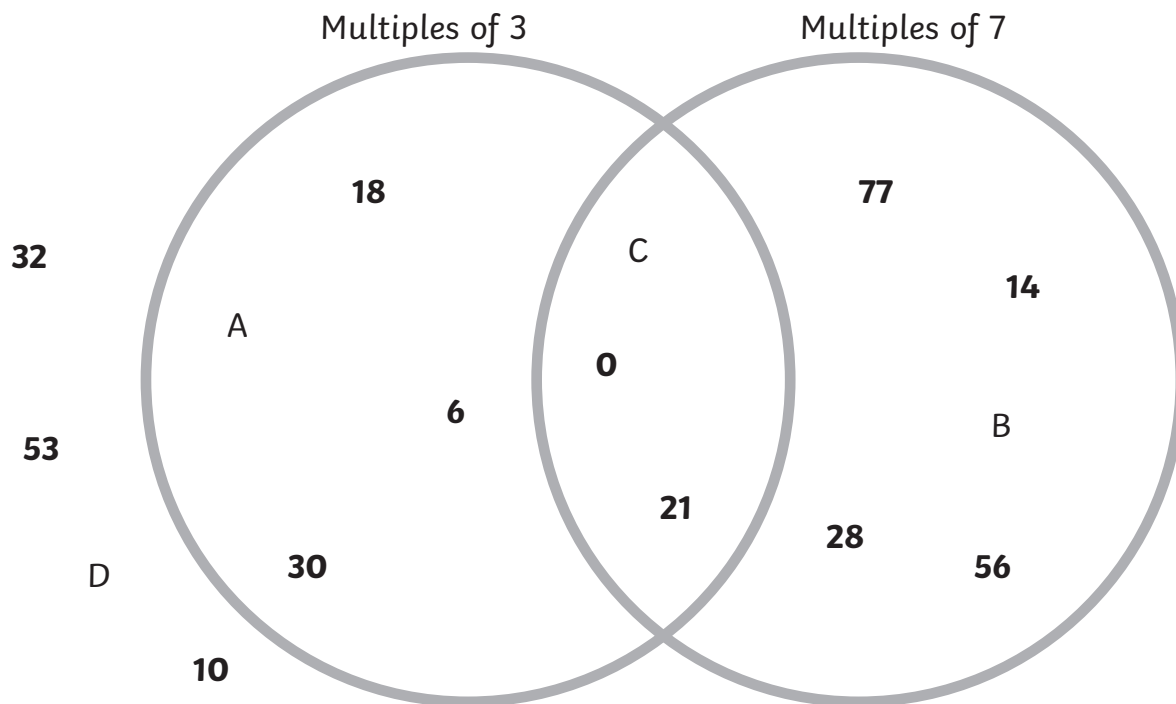
Clue 2: The winning pine cone penguin's scarf is **plain**.

The Mystery of the Pine Cone Penguin **Answers**

Clue 3: Multiples **Answers**

Sort the numbers in the grid into the Venn diagram.

Then, highlight the numbers which appear in section C or D of the diagram. Rearrange those words to find out which type of tree the winning pine cone came from.



0 from	6 fir	10 a	14 was
18 on	21 tree	28 pine	30 growing
32 came	53 larch	56 forest	77 spruce

Clue 3: The pine cone **came from a larch tree**.

The Mystery of the Pine Cone Penguin **Answers**

Clue 4: Calculation Count **Answers**

	Th	H	T	O
	5	6 ⁷	1 ⁰	2
-	1	4	6	1
	4	2	4	1

	Th	H	T	O
	3	7	1	4
+	2	4	7	1
	6	1	8	5
	1			

	Th	H	T	O
	3	8	4 ¹	2
-	1	2	3	4
	2	6	1	8

	Th	H	T	O
	4	3	6	5
+	2	7	5	4
	7	1	1	9
	1	1		

	Th	H	T	O
	5	4 ¹	3 ⁹	
-	2	4	5	6
	3	0	8	3

	Th	H	T	O
	4	2	9	7
+	2	9	4	1
	7	2	3	8
	1	1		

	Th	H	T	O
	5	7	7 ¹	3
-	1	6	7	8
	4	1	0	5

	Th	H	T	O
	3	2	6	6
+	6	0	8	1
	9	3	4	7
		1		

	Th	H	T	O
	6	4 ¹	5 ⁷	
-	3	4	7	1
	3	0	8	6

Missing Digit	1	2	3	4
Number of Times it Appears in Answers	6	3	5	4

Clue 4: The child who created the winning pine cone penguin sat on table number **1**.

The Mystery of the Pine Cone Penguin **Answers**

Clue 5: Roman Numeral Codebreaker **Answers**

Roman Numeral	Number	Letter
XV	15	O
C	100	N
XXIV	24	I
X- III	7	T
C - L	50	S
XII + VIII	20	E
XL	40	A
LXXVI	76	R
XXX + XX	50	S

A	B	C	D	E	F	G	H	I	J	K	L	M
40	10	85	6	20	32	75	18	24	11	9	60	25
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100	15	64	30	76	50	7	26	90	2	5	28	8

Clue 5: The winning pine cone penguin is wearing an accessory **on its ears**.

Your investigation is complete.

The winning pine cone penguin was **Oreo**.