Mystery at the Swimming Baths Maths Game

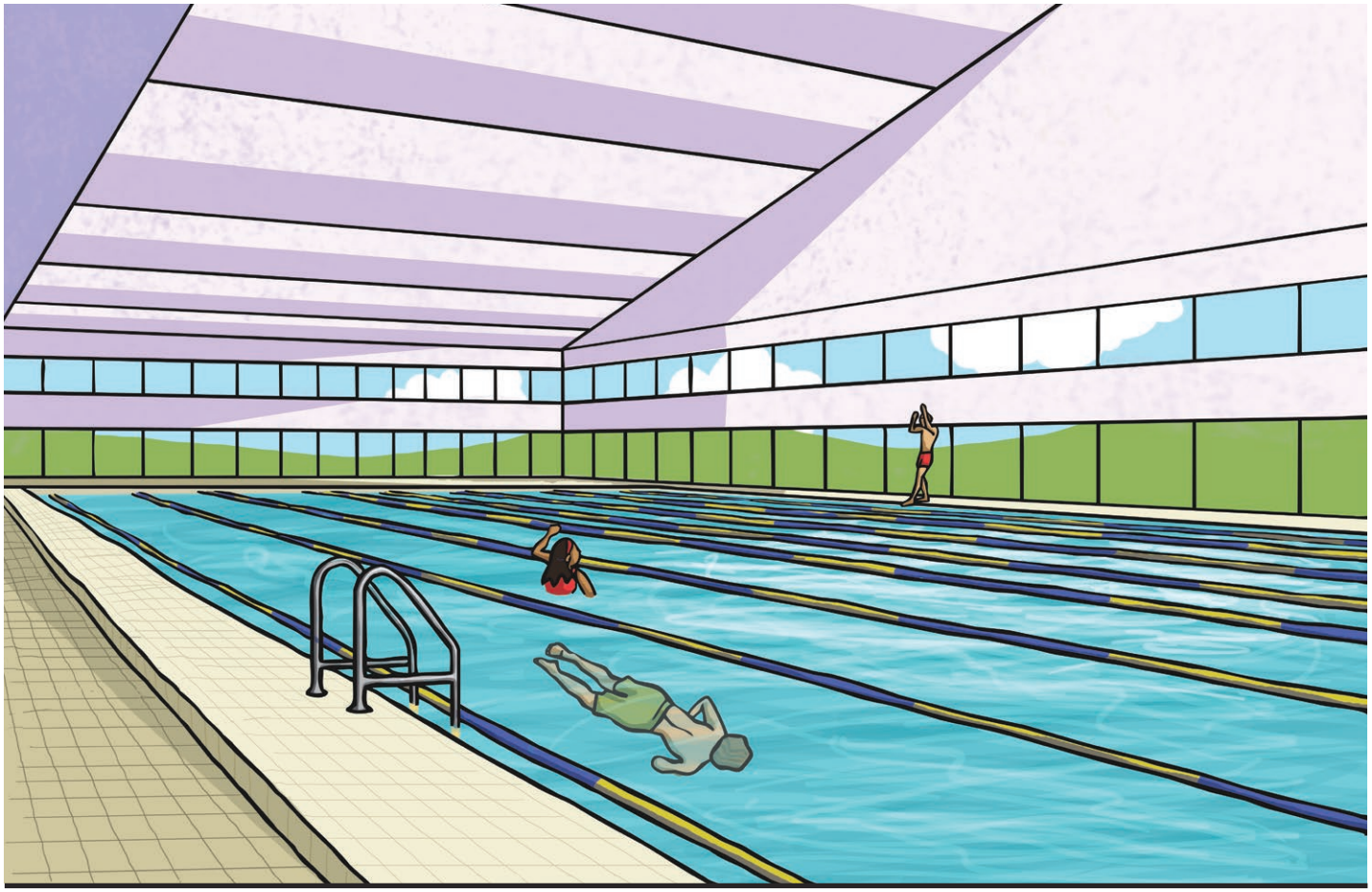
The Year 4 pupils of St. Trevallyan School for Girls go swimming every week. They always look forward to it and enjoy their time out of the classroom and in the swimming pool.

This week is no exception. Swimming bags are at the ready, teachers are raring to go, and off they go in the coach to the local leisure centre.

They have a fabulous time learning how to do the backstroke, with many of them taking to it like a duck to water!

However, when the girls come to get out of the pool, to their horror, they find someone has removed all their towels! Their towels are missing, and aren't anywhere to be seen!

Your job is to analyse all the clues and solve the mystery of the towel taker of St. Trevallyan!



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Name	Height (cm)	Hair Colour	Name of goggles	Locker number	Colour of hair bobbles
Amy Angelfish	137	brown	Swish	201	green
Beatrice Blowfish	131	blonde	ClearBrite	130	red
Clara Carp	135	blonde	ClearBrite	120	blue
Devinder Dartfish	137	black	AquaSeal	104	green
Eshal Eel	137	blonde	Swish	220	red
Fi Flounder	131	red	AquaSeal	310	red
Gurvinder Guppy	135	black	Swish	440	blue
Hannah Haddock	136	brown	ClearBrite	410	green
Izzy Ide	137	blonde	Swish	500	purple
Ju Jackfish	137	black	Swish	110	green
Kasia Koi	138	blonde	AquaSeal	520	red
Lowri Longfin	131	red	Swish	301	purple
Monika Mackerel	137	black	Swish	510	purple
Nikita Needlefish	137	brown	AquaSeal	290	red
Olivia Oarfish	138	brown	AquaSeal	510	blue
Pippa Piranha	137	black	Swish	424	red
Ruby Roach	135	brown	AquaSeal	402	red
Sophie Sprat	132	blonde	AquaSeal	312	green
Terri Tuna	137	black	Swish	525	green
Ursula Uaru	131	brown	AquaSeal	200	purple
Violet Viperfish	137	black	Swish	103	blue
Wendy Whiting	137	brown	ClearBrite	320	red
Yan Yellowtail	132	blonde	Swish	530	blue
Zoe Zander	137	black	Swish	422	blue
Ava Angler	131	black	Swish	515	red
Brittney Beardfish	135	blonde	AquaSeal	330	green
Chrissie Cod	137	brown	AquaSeal	222	blue
Daria Dory	137	black	Swish	132	red
Elif Elver	136	black	ClearBrite	560	blue
Frankie Flathead	131	brown	AquaSeal	426	green

Clue 1: More, Less and Multiples

Follow the instructions and fill in the empty circles with your answers.

Then, look in the table below to find the numbers you've written in the last circles.

Rearrange the words to form a sentence and reveal the first clue.

Count on, adding 8 each time.

16 ○ ○ ○ ○

+ 100, − 10, + 100, − 10

626 ○ ○ ○ ○

Count on, adding 10 each time.

234 ○ ○ ○ ○

Count back, subtracting 8 each time.

64 ○ ○ ○ ○

Count on, adding 4 each time.

24 ○ ○ ○ ○

Count back, subtracting 4 each time.

44 ○ ○ ○ ○

Count on, adding 100 each time.

378 ○ ○ ○ ○

48 pair	274 were	816 brown	32 a
254 ClearBrite	44 purple	806 discovered	577 blonde
221 lost	28 Swish	56 bobbles	678 AquaSeal
778 goggles	264 red	36 hair	40 of

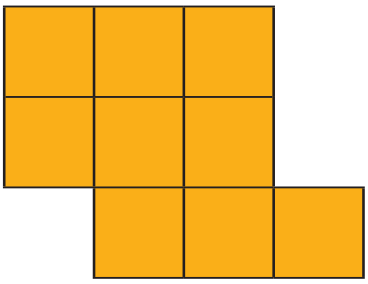
Answer: _____

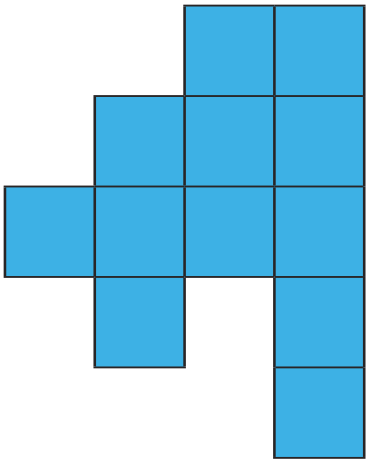
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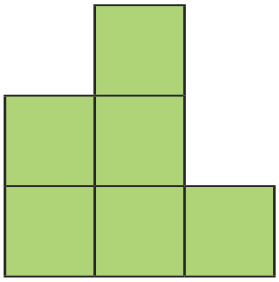
Clue 2: Big Pools, Big Area

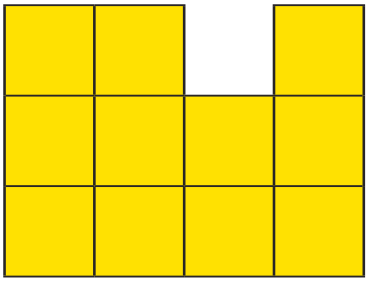
Work out the area of these unusual shaped swimming pools.

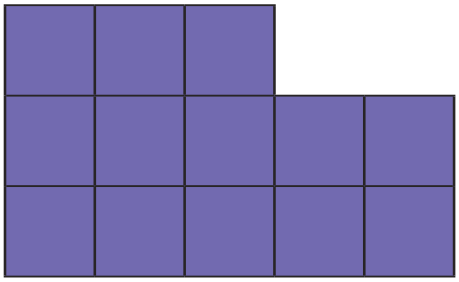
Find the number in the table below and rearrange the words to solve the second clue.











10cm^2 brown	13cm^2 black	4cm^2 found	9cm^2 had
6cm^2 taker	8cm^2 tallest	11cm^2 hair	15cm^2 strands
3cm^2 bobble	12cm^2 towel	14cm^2 height	7cm^2 red

Answer: _____

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Clue 3: How Tall?

Complete these columnar addition and subtraction equations and whichever answer is the most common will give the height of the towel thief.

1. $541 - 403$

2. $83 + 52$

3. $386 - 249$

4. $99 + 39$

5. $88 + 49$

6. $444 - 306$

7. $79 + 57$

8. $695 - 558$

9. $112 + 25$

The troublesome towel taker is _____ cm tall.

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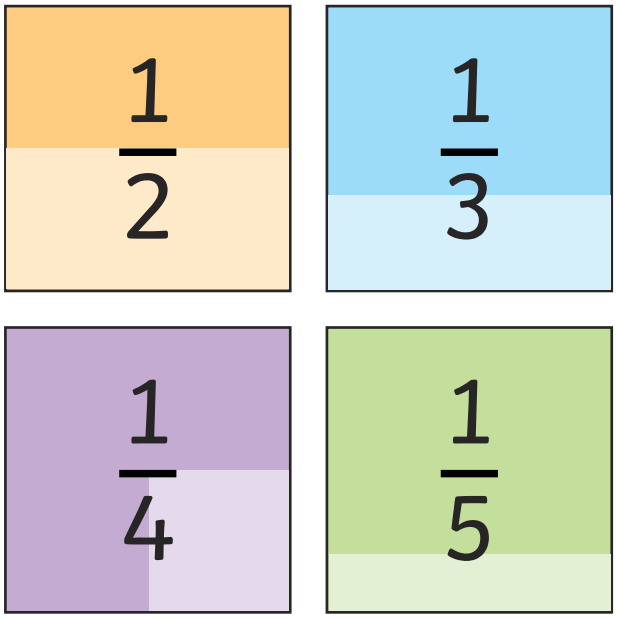
Clue 4: What's the Colour?

A hair bobble belonging to the towel thief was found in the changing rooms!

Follow these instructions to find out what colour it was.

Here are 4 boxes labelled $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$.

Sort the fractions below into the correct box, depending on which fraction they are equivalent to.



$\frac{1}{2}$	$\frac{2}{4}$	$\frac{4}{12}$	$\frac{3}{12}$	$\frac{5}{10}$
$\frac{2}{6}$	$\frac{2}{10}$	$\frac{4}{8}$	$\frac{3}{9}$	$\frac{3}{6}$

If there are more fractions equivalent to $\frac{1}{4}$, then the hair bobble was purple.

If there are more fractions equivalent to $\frac{1}{5}$, then the hair bobble was blue.

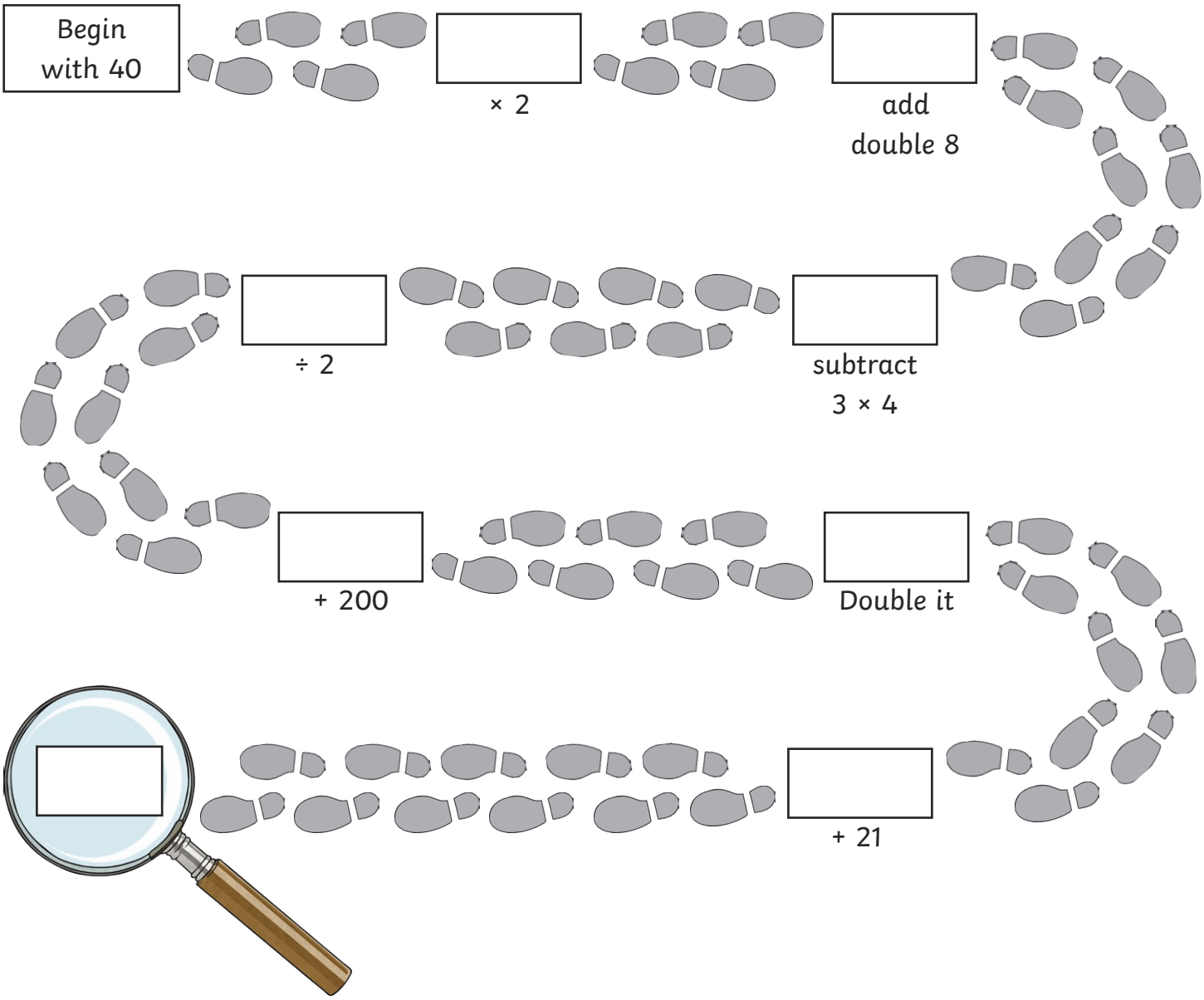
If there are more fractions equivalent to $\frac{1}{2}$, then the hair bobble was green.

If there are more fractions equivalent to $\frac{1}{3}$, then the hair bobble was red.

Answer: The hair bobble was _____.

Clue 5: Locker Number

Follow the pathway.



If your answer is **less** than 500, the perpetrator's locker number is a multiple of 10. If your answer is **more** than 500, their locker number is **not** a multiple of 10.

The perpetrator is _____.

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Clue 1: More, Less and Multiples **Answers**

48 **pair**	274 **were**	816 brown	32 **a**
254 ClearBrite	44 purple	806 **discovered**	577 blonde
221 lost	28 **Swish**	56 bobbles	678 AquaSeal
778 **goggles**	264 red	36 hair	40 **of**

A pair of Swish goggles were discovered.

Clue 2: Big Pools, Big Area **Answers**

$10cm^2$ brown	$13cm^2$ **black**	$4cm^2$ found	$9cm^2$ **had**
$6cm^2$ **taker**	$8cm^2$ tallest	$11cm^2$ **hair**	$15cm^2$ strands
$3cm^2$ bobble	$12cm^2$ **towel**	$14cm^2$ height	$7cm^2$ red

Towel taker had black hair.

Clue 3: How Tall? **Answers**

1. $541 - 403 = 138$

2. $83 + 52 = 135$

3. $386 - 249 = \mathbf{137}$

4. $99 + 39 = 138$

5. $88 + 49 = \mathbf{137}$

6. $444 - 306 = 138$

7. $79 + 57 = 136$

8. $695 - 558 = \mathbf{137}$

9. $112 + 25 = \mathbf{137}$

The troublesome towel taker is 137cm tall.

Clue 4: What's the Colour? **Answers**

Fractions equivalent to $\frac{1}{3}$: $\mathbf{\frac{2}{6}}$, $\mathbf{\frac{3}{9}}$, $\mathbf{\frac{4}{12}}$

Fractions equivalent to $\frac{1}{5}$: $\mathbf{\frac{2}{10}}$

Fractions equivalent to $\frac{1}{4}$: $\mathbf{\frac{3}{12}}$

Fractions equivalent to $\frac{1}{2}$: $\mathbf{\frac{2}{4}}$, $\mathbf{\frac{3}{6}}$, $\mathbf{\frac{4}{8}}$, $\mathbf{\frac{5}{10}}$

There are more fractions equivalent to $\frac{1}{2}$, the hair bobble was green.

Clue 5: Locker Number **Answers**

The answer is 505. This is more than 500, so the locker number is not a multiple of 10.

The perpetrator is Terri Tuna.

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