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Mrs J's Resource Creations



PREPARATION

Print and copy pages 4-11 for your students. You can do either of the following:

- Combine the pages to form a booklet for each student to work on; OR
- Hand out worksheets as you want students to work on them please note that if you
 choose this option, students will always need the 'Possible Suspects' page handy.
- If it is a difficult skill or something not yet done with your students, demonstration and a lesson before completing that clue is recommended.
- You could get students to workindependently, or in pairs/groups.
 IMPORTANT: The clues must be completed in the order I have arranged them in i.e. 1-5!

HOW TO USE

Read through the article on page 4 'Math Mystery: Case of The Heartbreak Hitman' to set up the activity and engage students.

Instruct students that they will need to keep referring back to their Possible Suspects list after solving each clue.

Students work through each clue, either guided by the teacher or independently (your choice). After completing a math worksheet, if students completed the questions correctly, a clue will be revealed. For example: 'Reports say that the hitman has blonde hair.' So, in this example, students must cross off any remaining suspects on the list who do not have blonde hair.

Once students have correctly completed all of the clues, only one suspect will remain and that suspect is the Heartbreak Hitman. On page 11, the teacher ticks off the 'Well done...' box and the student can receive an Award (provided on page 18) if they declare the correct suspect. If a student gets the wrong suspect, tick the second box "Oops! Try again," and instruct the student to go over their work to see where they went wrong.

ANSWERS

I have provided answersheets for all of the clues, as well as who the Heartbreak Hitman is. You will find these on pages 12-17. This includes the elimination process of suspects post each clue.

AWARDS

On page 18 you will find awards that you can print and give to students who solve the case correctly. I suggest making it a rule that students complete all of the questions on each worksheet to be eligible for the award (even if they can guess what the clue is without finishing all of the math questions!). You could also make it a condition that students show their working out on the back of the page or on a separate piece of paper if applicable.

If you need help, have any questions, or notice an error in my work please email me on JJResourceCreations@gmail.com

Thanks! @

MATH MYSTERY: CASE OF THE HEARTBREAK HITMAN

February 14

On Valentine's Day, Mathhattan is usually filled with love, kindness and romance, yet unfortunately this year the whole town is experiencing a very gloomy and sad Valentine's Day! A Valentine villain is on the loose, known as the Heartbreak Hitman, shooting people all over town with a Magic arrow that makes hearts turn dark. This is causing friendships to fall apart and couples to break up when they really didn't want to; now so many people are sitting alone on this day feeling depressed and broken hearted. Cupid has been trying to spread his arrows of love to fix the heartbreak, but unfortunately the Heartbreak Hitman works much faster, continuously undoing all of Cupid's hard work. If this hitman is not stopped soon, all of the love in Mathhattan will be completely lost!

Hear what some of the victims had to say earlier today:

"I can't feel any love, my heart just feels like it is filled with sadness and no matter what I do I can't make it go away!" Cried Linda.

Carl sadly retold his experience, "Out of nowhere my girlfriend just broke up with me! It's like she changed in a flash! Once I heard about the Heartbreak Hitman running around town, I knew instantly that she had been struck by one of those loveless magic arrows."

Lola explained, "I ruined all of my friendships! It's like all of a sudden I've become this mean person and now I'm all alone!"

Ronald exclaimed, "Everyone is arguing and bickering all over town. People that were once happy together, seem to no longer even like each other. Someone needs to put a stop to this!"

Mathhattan is in desperate need for help this Valentine's Day. The police are trying to find the Heartbreak Hitman; however, they are having a difficult time figuring out the identity of the villain. A great math detective is needed to help them solve this case!

MATH DETECTIVE NEEDED TO SOLVE WHO THE HEARTBREAK HITMAN IS!

The police have made a list of all the possible suspects who could be the Heartbreak Hitman. However, they urgently need a super math detective to help them solve this case!

Name:

POSSIBLE SUSPECTS LIST

Name	Gender	Tall/ Short	Hair Color	Eye Color	Wears a
Kyle Arrow	Male	Short	Black	Blue	Hat
Billy Wilson	Male	Tall	Brown	Brown	Hat
Kenny Meyers	Male	Tall	Blonde	Green	Watch
Talora Zamen	Female	Tall	Red	Green	Hat
Jackie Knapp	Female	Short	Red	Blue	Watch
Sonya Steel	Female	Tall	Brown	Brown	Watch
Craig Dupey	Male	Short	Blonde	Blue	Hat
Zissy Whittle	Female	Short	Black	Blue	Watch
Archie Hart	Male	Tall	Black	Brown	Watch
Marco Perez	Male	Short	Brown	Green	Watch
Miriam Nickel	Female	Tall	Red	Brown	Watch
Lily Vogel	Female	Tall	Blonde	Brown	Watch
Miri Lynn	Female	Short	Black	Brown	Watch
Shane Pratt	Male	Short	Red	Blue	Hat
Rose Ayers	Female	Short	Brown	Brown	Watch
Sasha Logan	Female	Tall	Black	Blue	Watch

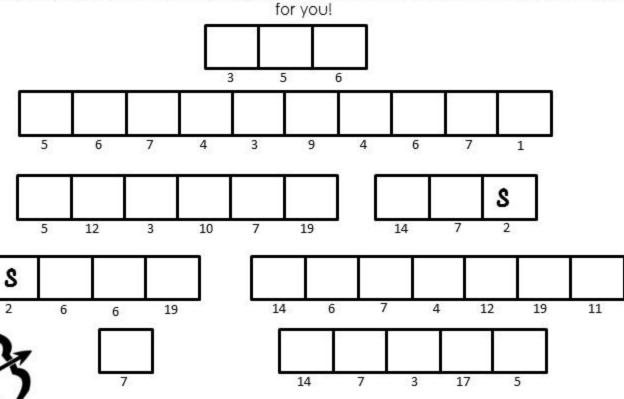
Solve the clues and then cross suspects off the list until one remains! The suspect remaining is the Heartbreak Hitman!

Name:

SUBTRACTING WITHIN 20 - CLUE 1



Crack the code by completing the subtraction questions. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done



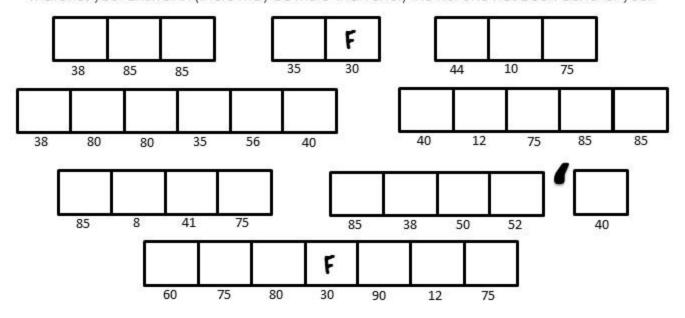
20 - 6 = _____



COUNTING PATTERNS - CLUE 2



To discover the next clue, complete the counting pattern boxes below. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you!



Count forward by tens from 20.

Count forward by twos from 6.

6, ____, ___, ____

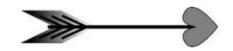
Count forward by fives from 70.

Count **forward** by **threes** from 32.

^{32,} O A K T

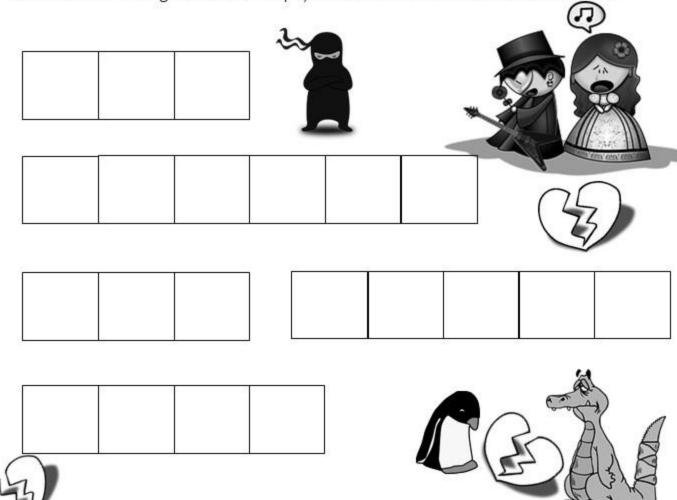
Count **forward** by **fours** from 48.

^{48,} **y W P**



ORDERING NUMBERS - CLUE 3

Discover another clue by arranging the numbers below in **ascending order**. Cut out the numbers (paired with letters) at the bottom of the page, arrange and paste them from smallest to largest into the empty boxes to make the letters reveal a clue.



	The second second	\$1 <u></u> -	В	N	Н	W	Н	V
57	2	280	112	70	19	138	8	208
<u> </u>	S	E	E	R	Н	M	S	N
23	102	11	188	118	85	52	299	180

88	121	38
Α	0	T

Name:

EVEN & ODD NUMBERS – CLUE 4

An unusual witness has given you instructions to color all of the boxes with **even numbers** in <u>red</u> and all of the **odd numbers** in <u>blue</u>. Doing this will reveal a feature about the suspect.

_	_	_	-	_	-	_	_	_	_	_		_	_	_
3	1	9	11	23	95	15	17	7	33	29	55	71	37	13
2	6	10	45	44	22	1	5	8	27	73	21	54	29	91
77	34	49	72	41	11	80	65	12	19	83	31	78	95	37
63	60	55	66	33	99	88	39	42	9	45	97	54	27	43
15	58	47	40	86	16	20	23	28	65	75	35	18	81	89
31	62	73	76	37	17	92	49	50	53	69	29	82	19	33
59	28	87	56	31	75	84	3	30	14	24	43	38	26	98
25	83	35	95	7	67	49	81	33	27	99	67	85	19	15

An Even Number is a number that can be divided into two equal groups.

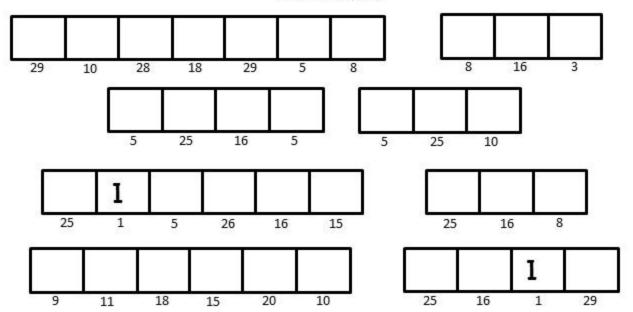
An Odd Number is a number that cannot be divided into two equal groups.

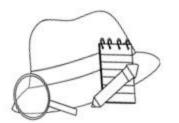
Read each number in the grid: EVEN NUMBERS - COLOR RED ODD NUMBERS - COLOR BLUE

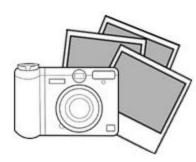


Making 30: Fill in The Missing Number - CLUE 5

Crack the code by filling in the missing number to make 30. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you.







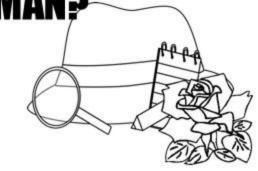


SOLVE THE MYSTERY: WHO IS THE









(your name)

Has discovered that the Heartbreak Hitman is:

CI	ues	cł	nec	ckl	ist:

Teacher to check and tick

Clue I	
0 1 0	00

Well done! You have discovered who the Heartbreak Hitman is! Because of your hard work, the police arrested the criminal, which put a stop to the heartache spreading. Cupid is now able to restore the love back into Mathhattan! Thank you!

Clue 2

Clue 4

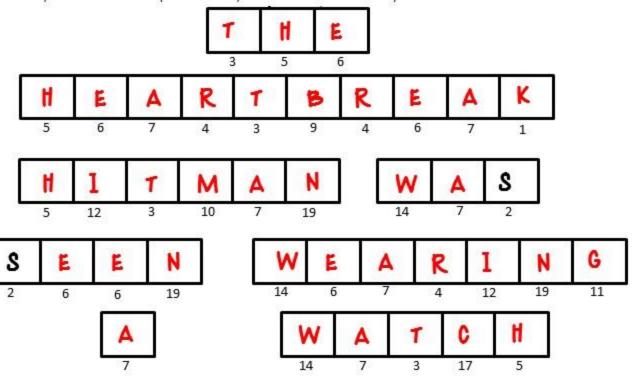
Oops! No that is not the Heartbreak Hitman. Go over, check your clues

and try again.

Clue 5



Crack the code by completing the subtraction questions. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done



$$3-1=$$
 2 $9-5=$ 4 $18-6=$ 1 $11-4=$ 7 A

$$15-12 = \frac{3}{T}$$
 $20-10 = \frac{10}{M}$ $14-8 = \frac{6}{K}$ $8-7 = \frac{1}{K}$

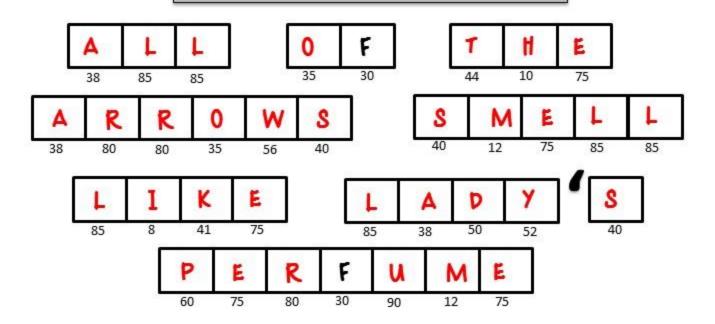
$$19-2 = \frac{17}{C}$$
 $16-7 = \frac{9}{B}$ $20-1 = \frac{19}{N}$ $18-7 = \frac{11}{G}$

All suspects who do not wear a watch should be crossed off the list.

ANSWER SHEET - CLUE 2



All male suspects to be crossed off the list.



Count **forward** by **tens** from 20.

Count **forward** by **fives** from 70.

Count **forward** by **threes** from 32.

32, <u>35</u>, <u>38</u>, <u>41</u>, <u>44</u>,

O A K T

Count **forward** by **fours** from 48.

48, <u>52</u>, <u>56</u>, <u>60</u>

Y W P

ANSWER SHEET - CLUE 3

Discover another clue by arranging the numbers below in **ascending order**. Cut out the numbers (paired with letters) at the bottom of the page, arrange and paste them from smallest to largest into the empty boxes to make the letters reveal <u>a c</u>lue.

2 8 11 T H E



19	23	38	52	57	70
Н	1	Т	M	Α	N



85	88	102
H	Α	S

112	118	121	138	180
В	R	0	W	N

188	208	280	299
E	Υ	E	S



All suspects who do not have brown eyes should be crossed off the list.



ANSWER SHEET – CLUE 4

An unusual witness has given you instructions to color all of the boxes with **even numbers** in <u>red</u> and all of the **odd numbers** in <u>blue</u>. Doing this will reveal a feature about the suspect.

3	1	9	11	23	95	15	17	7	33	29	55	71	37	13
2	6	10	45	44	22	1	5	8	27	73	21	54	29	91
77	34	49	72	41	11	80	65	12	19	83	31	78	95	37
63	60	55	66	33	99	88	39	42	9	45	97	54	27	43
15	58	47	40	86	16	20	23	28	65	75	35	18	81	89
31	62	73	76	37	17	92	49	50	53	69	29	82	19	33
59	28	87	56	31	75	84	3	30	14	24	43	38	26	98
25	83	35	95	7	67	49	81	33	27	99	67	85	19	15

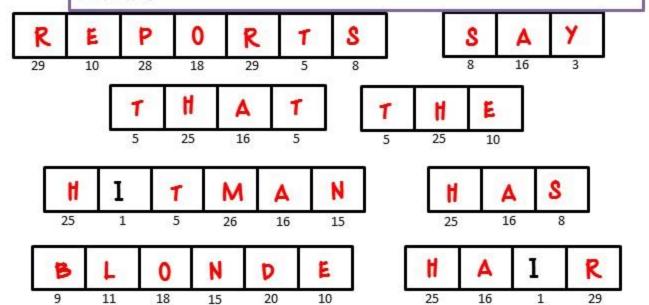
An Even Number is a number that can be divided into two equal groups.

An Odd Number is a number that cannot be divided into two equal groups.

Read each number in the grid: EVEN NUMBERS - COLOR RED ODD NUMBERS - COLOR BLUE

All short suspects should be crossed off the list.

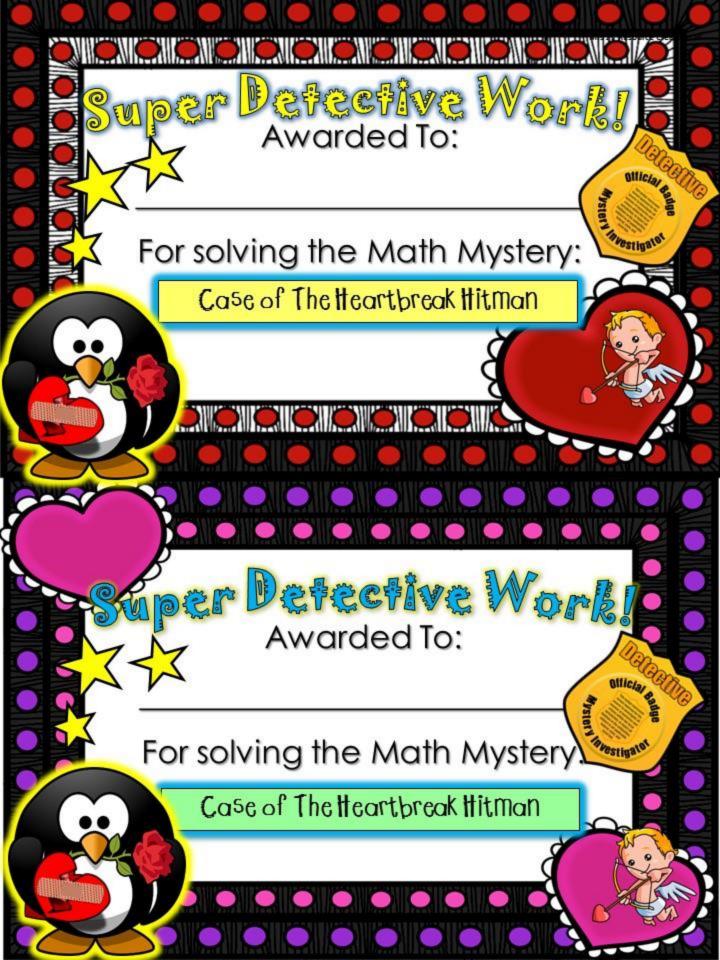
Keep only any remaining suspects that have blonde hair. This should leave one person remaining, and this is who the Heartbreak Hitman is!

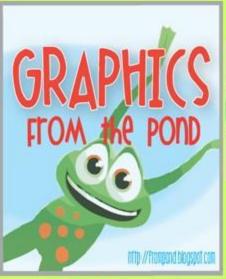


SUSPECT ELIMINATION GUIDE

Name	Gender	Tall/ Short	Hair Color	Eye Color	Wears a
Kyle Arrow	Male	Short	Black	Blue	Hat
Billy Wilson	Male	Tall	Brown	Brown	Hat
Kenny Meyers	Male	Tall	Blonde	Green	Watch
Talora Zamen	Female	Tall	Red	Green	Hat
Jackie Knapp	Female	Short	Red	Blue	Watch
Sonya Steel	Female	Tall	Brown	Brown	Watch
Craig Dupey	Male	Short	Blonde	Blue	Hat
Zissy Whittle	Female	Short	Black	Blue	Watch
Archie Hart	Male	Tall	Black	Brown	Watch
Marco Perez	Male	Short	Brown	Green	Watch
Miriam Nickel	Female	Tall	Red	Brown	Watch
Lily Vogel	Female	Tall	Blonde	Brown	Watch
Miri Lynn	Female	Short	Black	Brown	Watch
Shane Pratt	Male	Short	Red	Blue	Hat
Rose Ayers	Female	Short	Brown	Brown	Watch
Sasha Logan	Female	Tall	Black	Blue	Watch

On the answer sheets you will find a comment about who needs to be crossed off. Please refer to the color of the font and the color of the shaded suspect rows to show who has been crossed off from that clue.







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Thank You!