MATH MYSTERY

CASE OF THE

SUPER BAD SUPERHERO

GRADE 3

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Teacher Resource Instructions

PREPARATION

Print and copy pages 5-12 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 work independently, 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 5 'Math Mystery: Case of The Super Bad Superhero' 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. Whole rows must be eliminated at a time, the final row remaining will reveal who the super bad Superhero is.

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: 'A lady was able to scare off the antihero with cookies .' So, in this example, students can conclude that the super bad Superhero's weakness is cookies, so they must cross out all superheroes who do NOT have cookies as a weakness.

Once students have correctly completed all of the clues, only one suspect will remain, and that suspect is the super bad Superhero. On page 12, the teacher ticks off the '*Well done . . .* ' box and the student can receive an Award (provided on page 19) 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 answer sheets for all of the clues, as well as who the super bad Superhero is. You will find these on pages 13-18. This includes the elimination process of rows post each clue.

AWARDS

On page 19 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! ☺

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MATH MYSTERY: CASE OF THE SUPER BAD SUPERHERO

Date: _____

It is no secret that many superheroes reside on the island of Mathhattan. They usually help fight against crime and provide protection for us all. Sadly, something has changed and someone with superpowers is beginning to cause lots of trouble. This super bad superhero has begun to scare, intimidate and kidnap citizens! The police are powerless, and are unsure as to which superhero we can truly trust anymore...it could be any one of them! People no longer feel safe and are concerned this antihero is unstoppable.

Patrick, the Mayor of Mathhattan, addressed the public earlier this morning with the following speech:
"***Stay inside your homes, shut your windows and lock your doors, keep your phones handy for help and be wary of anyone wearing a mask. The MBI (Mathhattan Bureau of Investigation) and other secret sources have recently confirmed that this villain is actually one of who we call superheroes of Mathhattan. It is a mystery to us which superhero to trust and who we cannot. It is going to take some of our finest math detectives to work with the MBI on this serious case; no superhero can be involved. Hopefully, if we can discover who this terrible superhero is, we can put a stop to this chaos and release all of the captured citizens. Until we can reveal who is behind this, we ask that you hand over any evidence or information that you come across to help solve this mystery."***

As the mayor stepped off the podium, a large puff of smoke blasted out of nowhere! As the smoke began to settle a shadowy silhouette took hold of the mayor and before anyone could do anything. . . "POOF!" They both disappeared. The Mayor is now a prisoner of this super bad superhero.

MATH DETECTIVE NEEDED TO REVEAL THE SUPER BAD SUPERHERO!

The chaos continues throughout the town; the disguised antihero is doing a good job at keeping his/her identity hidden while scaring and capturing citizens. Everyone in Mathhattan is counting on you to take a closer look at all those we call superheroes and unveil the phony! Upon discovery, alert the good superheros as to who the villain is so that they can help with the arrest and rescue the trapped mayor and citizens!

Be careful not to become a victim yourself!

Name: _____

Case of the Super Bad Superhero

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POSSIBLE SUSPECTS

Superhero Name	Main Superpower	Extra Superpower	Gender M/F	Hair Color	Weakness
Lion Man	Super Speed	Shape Shifting	Male	Orange	Cookies
Dare Girl	Invisibility	Super Strength	Female	Purple	Silver
Mega Mage	Teleportation	Poisonous Burps	Male	Green	Cookies
Owl Man	Invisibility	Shape Shifting	Male	Purple	Sunlight
Blitzfire	Energy Blasts	Super Strength	Female	Orange	Silver
Thunder Hawk	Super Speed	Sonic Scream	Male	Purple	Sunlight
Razor	Energy Blasts	Sonic Scream	Male	Orange	Cookies
Starlight	Invisibility	Flight	Female	Green	Sunlight
Lady Bug	Teleportation	Shape Shifting	Female	Purple	Silver
The Giggler	Mind Control	Poisonous Burps	Male	Green	Cookies
Captain Nucleus	Super Speed	Flight	Male	Orange	Silver
Mrs. Amazing	Mind Control	Sonic Scream	Female	Purple	Sunlight
Doctor Bolt	Mind Control	Super Strength	Male	Orange	Silver
Splash	Energy Blasts	Poisonous Burps	Male	Orange	Cookies
Zapman	Teleportation	Flight	Male	Purple	Silver
Pizza Peter	Super Speed	Poisonous Burps	Male	Green	Sunlight
Titanicus	Energy Blasts	Super Strength	Male	Green	Cookies
Typhoon	Super Speed	Sonic Scream	Female	Orange	Silver
Blinker	Teleportation	Poisonous Burps	Female	Purple	Silver
Major Fury	Super Speed	Flight	Male	Green	Sunlight
Colossal Crush	Invisibility	Super Strength	Male	Green	Cookies

Solve the clues and then cross the suspect rows off the list until only one suspect remains! The last suspect remaining is the Super Bad Superhero behind the trouble in Mathhattan!
Whole rows must be eliminated at a time.

Name: _____

Case of the Super Bad Superhero

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CONVERT FROM EXPANDED FORM – CLUE 1

Discover an important clue by converting the numbers from expanded form to numerical form. Use your answers to match and place the letters in the boxes to reveal the first 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.

T		
714	164	28

239	181	346	346	429	181	536

					T
653	429	536	536	253	714

992	346	101

700 + 10 + 4 = **714**
T

100 + 80 + 1 = _____
I

20 + 8 = _____
E

400 + 20 + 9 = _____
A

900 + 90 + 2 = _____
F

100 + 60 + 4 = _____
H

500 + 30 + 6 = _____
N

100 + 1 = _____
Y

200 + 50 + 3 = _____
O

600 + 50 + 3 = _____
C

200 + 30 + 9 = _____
V

300 + 40 + 6 = _____
L

Name: _____

Case of the Super Bad Superhero

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ADDITION – CLUE 2

Solve another important clue by completing the addition 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 for you.

62						

			N			
173	178	639	37	327	49	49

78	327	699	92	78	639	49

639	67	62	639

639	67	327

	N						
62	37	639	178	67	327	78	92

178	49

62

356	62	320	327

12	35	24	61	36	54
+ 25	+ 14	+ 43	+ 17	+ 26	+ 38
37					
N	S	H	R	A	O

145	301	645	108	236	131
+ 33	+ 26	+ 54	+ 65	+ 84	+ 225
I	E	P	W	L	M

256
+ 383

T

Name: _____

Case of the Super Bad Superhero

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SUBTRACTION – CLUE 3

Solve another important clue 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 for you.

	L			
528	30	528	258	25

411	528	112

		L		
528	44	30	96	

45	347

112	218	528	12	96

347	832	832

45	267	96

528	149	45	28	267	96	12	347

411	28	45	267

218	347	347	351	28	96	112

45	67	94	23	42	83
- 15	- 22	- 50	- 11	- 17	- 55
30	____	____	____	____	____
L	T	B	R	Y	I

427	875	138	580	361	677
- 16	- 43	- 26	- 52	- 94	- 459
____	____	____	____	____	____
W	F	S	A	H	C

384	703	297	675	846
- 126	- 352	- 148	- 579	- 499
____	____	____	____	____
D	K	N	E	O

Name: _____

Case of the Super Bad Superhero

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MULTIPLYING BY 2s & 5s – CLUE 4

Solve another important clue by completing the multiplication 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 for you.

Y		
2	16	5

40	4	14	8

30	20	10	12	14	8	30

16	40

35	10	25	25	14

22	12	4	10

6	22	25	10	25

20	22	25

		Y		
18	12	2	16	10

6	12	30

20	12	15	25	14

2 X 1 = **2** → Y

2 X 2 = _____ → I

2 X 3 = _____ → W

2 X 4 = _____ → D

5 X 1 = _____ → U

5 X 2 = _____ → R

5 X 3 = _____ → K

5 X 4 = _____ → T

2 X 6 = _____ → A

2 X 7 = _____ → N

2 X 8 = _____ → O

2 X 9 = _____ → M

5 X 5 = _____ → E

5 X 6 = _____ → S

5 X 7 = _____ → G

5 X 8 = _____ → F

2 X 11 = _____ → H

Name: _____

Case of the Super Bad Superhero

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DIVIDING BY 2 – CLUE 5

In the grid below you will find a number of statements being texted to you, however, only one of them is revealing the correct final clue. Complete the division questions, and then look for your answer in the statement boxes and cross out that box (meaning that the statement in that box has been eliminated). The one statement box left standing after completing all of the questions, is the one with the correct clue!

The super bad superhero uses invisibility to shock people with sudden energy blasts coming out of nowhere. **7**	The super bad superhero uses super strength to throw a magical trap on victims and then teleports them to a secret dungeon. **3**	The super bad superhero casts icy energy blasts to make victims stick to the floor and uses mind control to make them walk back to wherever this strange imprisonment is. **2**	The super bad superhero teleports behind victims and uses mind control to make them go to a prison of some sort. **5**
The super bad superhero uses poisonous burps to weaken victims, then teleports to make a fast get away. **11**	The super bad superhero uses super strength to lift cars with people in them and then uses the power of invisibility to make them disappear. **12**	The super bad superhero uses invisibility to stealth through the streets and uses super strength to keep everyone away. **4**	The super bad superhero uses electric energy blasts to destroy walls and then teleports victims inside to somewhere strange. **6**
The super bad superhero uses poisonous burps to make people faint and then casts mind control to make them walk to the hidden prison. **1**	The super bad superhero uses super speed to catch victims without no one else noticing, then teleports them somewhere secret. **9**	The super bad superhero casts a sonic scream to stun everyone around, and then uses teleportation to make a quick get away. **10**	The super bad superhero travels around like a bug and then shapeshifts into human form to cast poisonous burps on everyone.. **8**

20 ÷ 2 =_____ 8 ÷ 2 =_____ 2 ÷ 2 =_____

16 ÷ 2 =_____ 10 ÷ 2 =_____ 24 ÷ 2 =_____

12 ÷ 2 =_____ 6 ÷ 2 =_____ 18 ÷ 2 =_____

4 ÷ 2 =_____ 14 ÷ 2 =_____

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SOLVE THE MYSTERY:
CASE OF THE SUPER BAD SUPERHERO

Detective

_____

(your name)

Has discovered that the super bad Superhero is:

_____

Teacher to check and tick

Clues Checklist:

Clue 1 ☐

Clue 2 ☐

Clue 3 ☐

Clue 4 ☐

Clue 5 ☐

☐ Well done! You have correctly revealed the identity of the Super Bad Superhero! Thanks to your brilliant math skills and detective work, the police were able to gather the real superheroes to help them capture the phony. Once they caught the antihero, all of the captured citizens were released from their imprisonment. All of the victims, including the Mayor, are very grateful for your help in setting them free and putting a stop to the Chaos in Mathhattan.

! ☐ Oops! No that is not the identity of the Super Bad Superhero.
Check your work and try again!

Name: _____

Case of the Super Bad Superhero

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ANSWER SHEET – CLUE 1

Discover an important clue by converting the numbers from expanded form to numerical form. Use your answers to match and place the letters in the boxes to reveal the first 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.

T	H	E
714	164	28

V	I	L	L	A	I	N
239	181	346	346	429	181	536

C	A	N	N	O	T
653	429	536	536	253	714

F	L	Y
992	346	101

700 + 10 + 4 = 714
T

100 + 80 + 1 = 181
I

20 + 8 = 28
E

400 + 20 + 9 = 429
A

900 + 90 + 2 = 992
F

100 + 60 + 4 = 164
H

500 + 30 + 6 = 536
N

100 + 1 = 101
Y

200 + 50 + 3 = 253
O

600 + 50 + 3 = 653
C

200 + 30 + 9 = 239
V

300 + 40 + 6 = 346
L

Cross off all superheroes who have flight as a superpower

Name: _____

Case of the Super Bad Superhero

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ANSWER SHEET – CLUE 2

Solve another important clue by completing the addition 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 for you.

A	W	I	T	N	E	S	S
62	173	178	639	37	327	49	49

R	E	P	O	R	T	S
78	327	699	92	78	639	49

T	H	A	T
639	67	62	639

T	H	E
639	67	327

A	N	T	I	H	E	R	O
62	37	639	178	67	327	78	92

I	S
178	49

A
62

M	A	L	E
356	62	320	327

12 + 25 = **37**	35 + 14 = **49**	24 + 43 = **67**	61 + 17 = **78**	36 + 26 = **62**	54 + 38 = **92**
N	S	H	R	A	O

145 + 33 = **178**	301 + 26 = **327**	645 + 54 = **699**	108 + 65 = **173**	236 + 84 = **320**	131 + 225 = **356**
I	E	P	W	L	M

256 + 383 = **639**
T

Cross off all female superheroes

Name: _____

Case of the Super Bad Superhero

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ANSWER SHEET – CLUE 3

Solve another important clue 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 for you.

A	L	A	D	Y	W	A	S
528	30	528	258	25	411	528	112

A	B	L	E	T	O	S	C	A	R	E
528	44	30	96	45	347	112	218	528	12	96

O	F	F	T	H	E
347	832	832	45	267	96

A	N	T	I	H	E	R	O	W	I	T	H
528	149	45	28	267	96	12	347	411	28	45	267

C	O	O	K	I	E	S
218	347	347	351	28	96	112

45 - 15 = **30**	67 - 22 = **45**	94 - 50 = **44**	23 - 11 = **12**	42 - 17 = **25**	83 - 55 = **28**
L	T	B	R	Y	I

427 - 16 = **411**	875 - 43 = **832**	138 - 26 = **112**	580 - 52 = **528**	361 - 94 = **267**	677 - 459 = **218**
W	F	S	A	H	C

384 - 126 = **258**	703 - 352 = **351**	297 - 148 = **149**	675 - 579 = **96**	846 - 499 = **347**
D	K	N	E	O

Keep only any remaining heroes with a weakness for cookies. Cross out the rest.

Name: _____

Case of the Super Bad Superhero

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ANSWER SHEET – CLUE 4

Solve another important clue by completing the multiplication 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 for you.

Y	O	U
2	16	5

F	I	N	D
40	4	14	8

S	T	R	A	N	D	S
30	20	10	12	14	8	30

O	F
16	40

G	R	E	E	N
35	10	25	25	14

H	A	I	R
22	12	4	10

W	H	E	R	E
6	22	25	10	25

T	H	E
20	22	25

M	A	Y	O	R
18	12	2	16	10

W	A	S
6	12	30

T	A	K	E	N
20	12	15	25	14

Keep any remaining heroes with green hair. Cross out the rest.

2 X 1 = **2** → **Y**

2 X 2 = **4** → **I**

2 X 3 = **6** → **W**

2 X 4 = **8** → **D**

5 X 1 = **5** → **U**

5 X 2 = **10** → **R**

5 X 3 = **15** → **K**

5 X 4 = **20** → **T**

2 X 6 = **12** → **A**

2 X 7 = **14** → **N**

2 X 8 = **16** → **O**

2 X 9 = **18** → **M**

5 X 5 = **25** → **E**

5 X 6 = **30** → **S**

5 X 7 = **35** → **G**

5 X 8 = **40** → **F**

2 X 11 = **22** → **H**

Name: _____

Case of the Super Bad Superhero

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ANSWER SHEET– CLUE 5

In the grid below you will find a number of statements being texted to you, however, only one of them is revealing the correct final clue. Complete the division questions, and then look for your answer in the statement boxes and cross out that box (meaning that the statement in that box has been eliminated). The one statement box left standing after completing all of the questions, is the one with the correct clue!

The super bad Superhero uses invisibility to block people and hidden energy blasts coming out of nowhere. **7**	The super bad Superhero uses super strength and a magic wand to trap victims and then teleports them to a secret dungeon. **3**	The super bad Superhero casts icy energy blasts to make victims stick to the floor and then mind control to make them walk back to wherever this strange imprisonment is. **2**	The super bad Superhero teleports behind victims and uses mind control to make them walk to a prison of some sort. **5**
The super bad Superhero uses poisonous burps to weaken victims, then teleports to make a fast get away. **11**	The super bad Superhero uses super strength to lift cars with people in them and then use the power of invisibility to make them disappear. **12**	The super bad Superhero uses invisibility to stealth through the streets and uses super strength to keep everyone away. **4**	The super bad Superhero uses electric energy blasts to destroy walls and then teleports victims inside to somewhere strange. **6**
The super bad Superhero uses poisonous burps to make people faint and then casts mind control to make them walk to the hidden prison. **1**	The super bad Superhero uses super speed to kidnap victims without anyone else noticing, then teleports them somewhere secret. **9**	The super bad Superhero makes a sonic scream to stun everyone around, and then uses teleportation to make a quick get away. **10**	The super bad Superhero travels like a bug and then shifts into human form to cast poisonous burps on everyone.. **8**

Keep only the remaining hero that has the ability to do both poisonous burps and teleport. This should leave only one suspect remaining.

20 ÷ 2 = 10

8 ÷ 2 = 4

2 ÷ 2 = 1

16 ÷ 2 = 8

10 ÷ 2 = 5

24 ÷ 2 = 12

12 ÷ 2 = 6

6 ÷ 2 = 3

18 ÷ 2 = 9

4 ÷ 2 = 2

14 ÷ 2 = 7

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ELIMINATION PROCESS

Superhero Name	Main Superpower	Extra Superpower	Gender M/F	Hair Color	Weakness
Lion Man	Super Speed	Shape Shifting	Male	Orange	Cookies
Dare Girl	Invisibility	Super Strength	Female	Purple	Silver
Mega Mage	**Teleportation**	**Poisonous Burps**	**Male**	**Green**	**Cookies**
Owl Man	Invisibility	Shape Shifting	Male	Purple	Sunlight
Blitzfire	Energy Blasts	Super Strength	Female	Orange	Silver
Thunder Hawk	Super Speed	Sonic Scream	Male	Purple	Sunlight
Razor	Energy Blasts	Sonic Scream	Male	Orange	Cookies
Starlight	Invisibility	Flight	Female	Green	Sunlight
Lady Bug	Teleportation	Shape Shifting	Female	Purple	Silver
The Giggler	Mind Control	Poisonous Burps	Male	Green	Cookies
Captain Nucleus	Super Speed	Flight	Male	Orange	Silver
Mrs. Amazing	Mind Control	Sonic Scream	Female	Purple	Sunlight
Doctor Bolt	Mind Control	Super Strength	Male	Orange	Silver
Splash	Energy Blasts	Poisonous Burps	Male	Orange	Cookies
Zapman	Teleportation	Flight	Male	Purple	Silver
Pizza Peter	Super Speed	Poisonous Burps	Male	Green	Sunlight
Titanicus	Energy Blasts	Super Strength	Male	Green	Cookies
Typhoon	Super Speed	Sonic Scream	Female	Orange	Silver
Blinker	Teleportation	Poisonous Burps	Female	Purple	Silver
Major Fury	Super Speed	Flight	Male	Green	Sunlight
Colossal Crush	Invisibility	Super Strength	Male	Green	Cookies

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

MYSTERY ANSWER:

MEGA MAGE.

Super Detective Work!

Awarded To:

_____

For solving the Math Mystery:

Case of The Super Bad Superhero

Super Detective Work!

Awarded To:

_____

For solving the Math Mystery:

Case of The Super Bad Superhero

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