

TEACHER NOTES – A4

Firstly, a big THANK YOU for purchasing this product. Please checkout my store for more products and follow me for updates.

These CSI projects are a great way to capture your students interest in math.

Activity Focus: Measurement, calculating area of rectangles, calculating area of irregular shapes, calculating volume, cardinal directions, and time scheduling.

IMPORTANT NOTES

Before printing please check what pages you need – for the clues titled hidden message and tracking the criminal there are two options– just give your students one.

Hidden message: The rectangles are to scale so I have provided two options, one with the length and width written next to each triangle and one where the students have to measure using a ruler to find the width and length. If you choose the measurement option please note this has to be done in cm – not inches.

Tracking the criminal: This activity requires the students to measure so you will need to ensure your students have access to a ruler. I have provided two sets of instructions, one using cm and one using inches. Please select the one you need for printing.

– PLEASE CHECK YOU ARE PRINTING THE FILE WITH THE CORRECT PAGE SIZES (EITHER A4 OR US LETTER – FOR USA) – THIS IS THE A4 SIZE DOCUMENT

Possible Standards (USA)

[CCSS.MATH.CONTENT.6.G.A.1](#)

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

[CCSS.MATH.CONTENT.6.G.A.2](#)

Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

[CCSS.MATH.CONTENT.7.G.A.1](#)

Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.






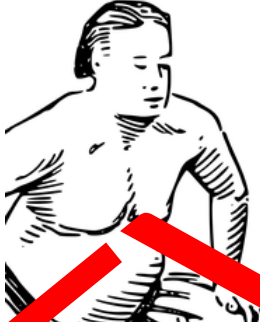


[CCSS.MATH.CONTENT.7.G.A.6](#)

Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

CRIME SCENE INVESTIGATION

Yesterday the bank was robbed. An armed offender wearing a mask entered the bank, blew a hole in the bank safe, stole \$1 million and then fled on foot.

The most likely suspects were gathered up and are shown below, one of these suspects committed the crime. Use the evidence on the following pages to find out which one.

			
HAPPY HARRY	GRUFF GRIFF	HEROINE HILARY	MUSICAL MOLLY
			
PAPERBOY PAUL	JIMBO SAM	TINKERBELL TINA	RICH RUPERT

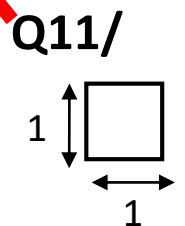
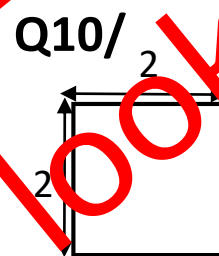
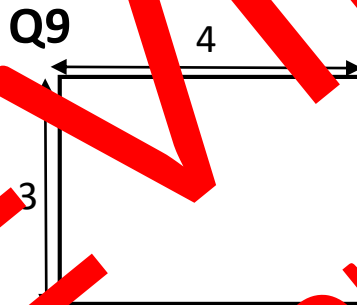
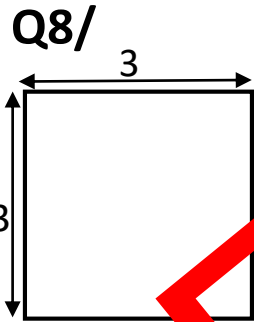
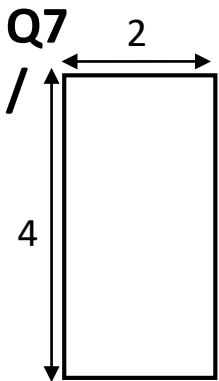
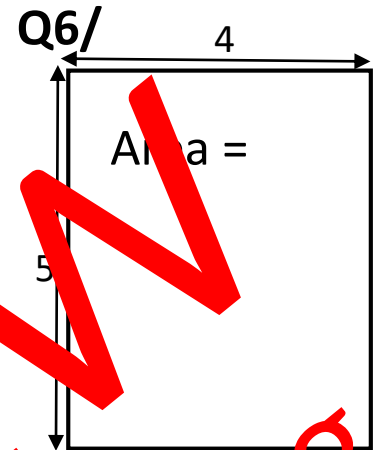
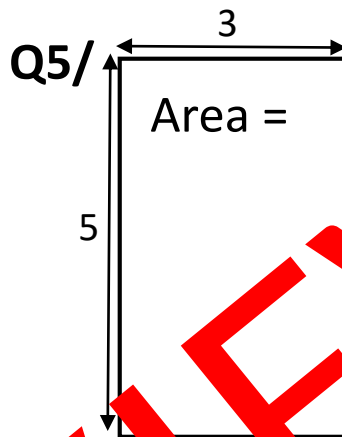
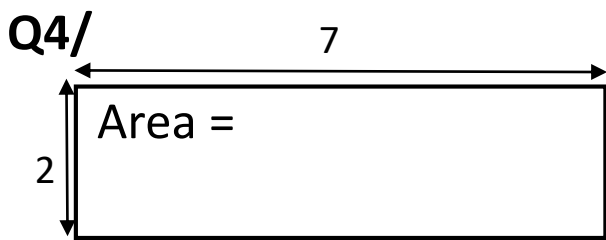
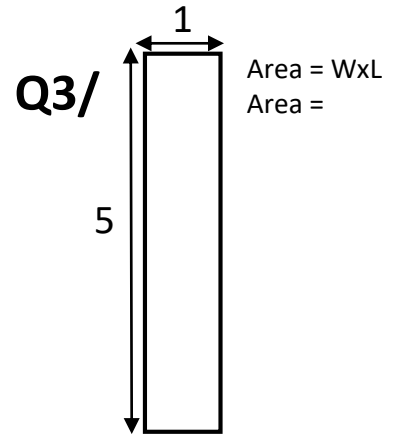
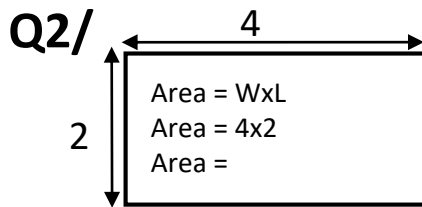
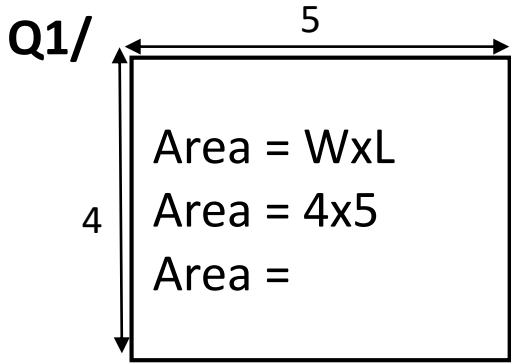
THE POLICE HAVE FOUND FIVE CLUES WHICH CAN BE SEEN ON THE FOLLOWING PAGES

AFTER YOU HAVE SOLVED EACH CLUE COME BACK HERE TO CROSS PEOPLE OFF THE SUSPECT LIST UNTIL YOU HAVE FOUND THE CRIMINAL

HIDDEN MESSAGE

The criminal left behind a hidden message at the crime scene and the police need your help to crack the code. Calculate the area of each of the shapes below. Match the answers up to a letter using the table at the bottom (e.g. A=1). Fill in the missing spaces in the message at the bottom using the answers from the questions.

To work out area multiply width x length.



Use the answers to the questions and the table below to complete the message at the bottom.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

CRIME WAS COMMITTED BY

Answer Q1 Answer Q2 Answer Q3 Answer Q4 Answer Q5 Answer Q6

Answer Q7 Answer Q8 Answer Q9 Answer Q10 Answer Q11

STORING THE MONEY

Police have found out that after the money was stolen it was hidden in the criminals attic before then being moved away. The money would of taken up a lot of space. All the suspects attics were measured and the two suspects with the smallest attics can be crossed off the suspect list as they wouldn't of had enough room to hide the money.

Which two suspects have the smallest total floor area in their attic?

(Cross these suspects off your suspect list – they didn't do it)

Hint: To calculate area you can either **count the number of squares** in each attic **OR** break the area up into parts and multiple length x width for each part



e.g. has an area of 6 squares
 $3 \times 2 = 6$
 (length) x (width)

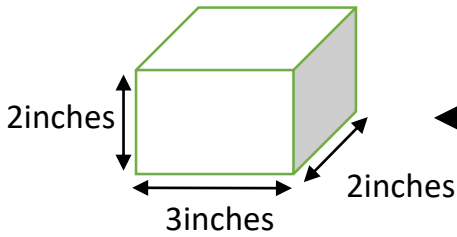
<p>Harry's Attic Amount of squares (area): _____</p>	<p>Griff's Attic Amount of squares (area): _____</p>	<p>Hilda's Attic Area: _____</p>	<p>Mony's Attic Area: _____</p>
<p>Paul's Attic Area: _____</p>	<p>Sam's Attic Area: _____</p>	<p>Tina's Attic Area: _____</p>	<p>Rupert's Attic Area: _____</p>

CROSS THE TWO SUSPECTS WITH THE TWO SMALLEST ATTICS OFF YOUR SUSPECT LIST

BREAKING INTO THE SAFE

The safe to the bank was blown open using gunpowder from fireworks. All the suspects were found to have empty firework boxes in their houses, however it would of taken a large amount fireworks to get the amount of gunpowder needed to blow open the safe.

Calculate the volume of each suspects fireworks box and cross the suspect who has the fireworks box with the smallest volume off the suspect list.



To Calculate Volume = height x width x length
 e.g. 2inches x 3inches x 2inches
 = 12inches³

CROSS THE ONE SUSPECT WHO HAS THE BOX WITH THE SMALLEST VOLUME OFF THE SUSPECT LIST.

Happy Harry	Gruff Griff	Heroine Hilda	Musical Molly
Volume= height x width x length Volume = 4 x 5 x 2 Volume =	Volume= height x width x length Volume = 6 x 3 x 2 Volume =	Volume =	Volume =
Paperboy Paul	Sumo Sam	Tinkerbell Tina	Rich Rupert
Volume =	Volume =	Volume =	Volume =

PREVIEW
Thanks for looking

TRACKING THE CRIMINAL - Centimetres

After the crime the criminal escaped from the bank and their path was tracked using a sniffer dog. Some witness reported seeing suspects in different parts of the city after the crime.

Track the path of the criminal using the table on the side. Any suspect who was NOT seen along the path of the criminal can be crossed off the suspect list. Hint – stay on the roads.



**PATH OF
CRIMINAL**

SCALE
1cm =
10m

- From Bank**
- Criminal went**
 - 10 metres east,
 - 30 metres north
 - 30 metres east
 - 40 metres north
 - 70 metres west
 - 30 metres south
 - 40 metres west
 - 30 metres south
 - 20 metres east
 - 35 metres south
 - 75 metres east
 - 25 metres south
 - 60 metres east
 - 95 metres north
 - 15 metres east
 - 40 metres north

PREVIEW
Thanks for looking

IN TIME FOR CRIME?

All the suspects took the bus to visit the bank on the day it was robbed. The police have been able to work out when the suspects got on the bus, and what bus they took, but not what time they arrived at the bank. The bank was robbed at 11:05 am, so any suspect who arrived after 11:05am can be crossed off the suspect list.

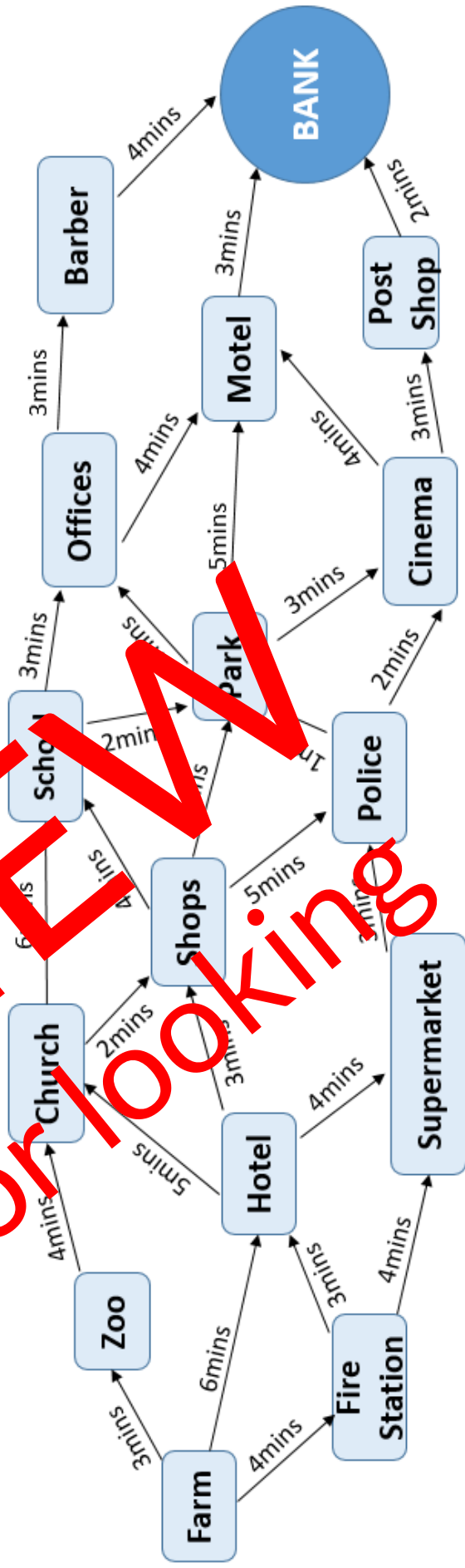
CROSS ANY SUSPECTS WHO ARRIVED AT THE BANK AFTER 11:05AM OFF THE SUSPECT LIST.

(hint: add the time travelled together between locations. i.e taking bus C from cinema → post shop → bank = 3min + 2min = 5min).

REMEMBER THERE ARE 60 MIN IN AN HOUR

BUS ROUTES	
BUS A	Farm → Zoo → Church → Shops → Park → Offices → Motel → Bank
BUS B	Fire Station → Supermarket → Police → Park → Offices → Barber → Bank
BUS C	Hotel → Shops → School → Park → Cinema → Post Shop → Bank

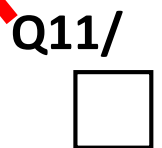
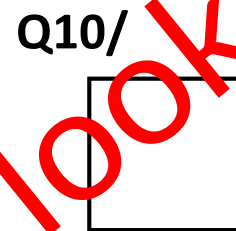
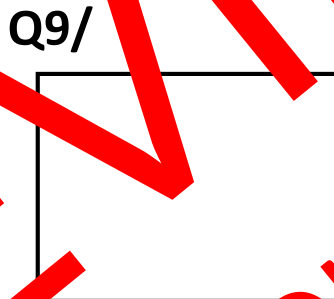
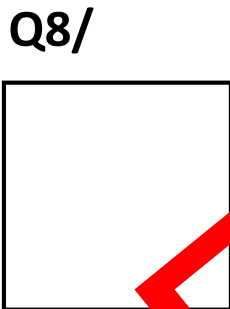
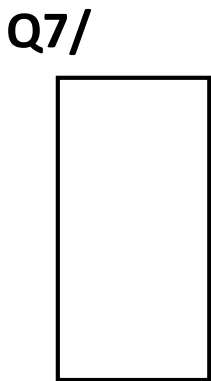
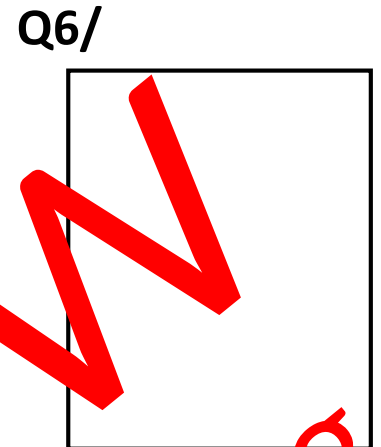
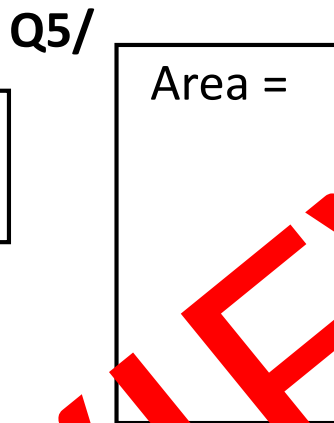
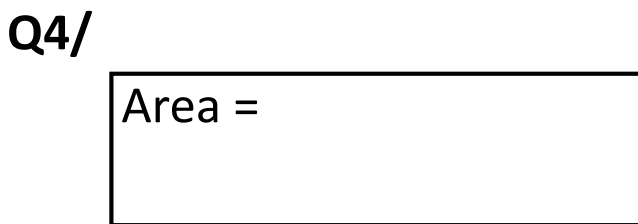
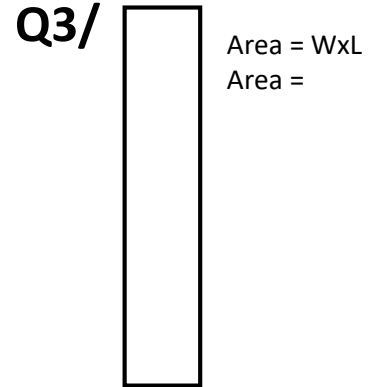
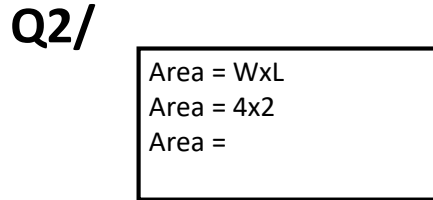
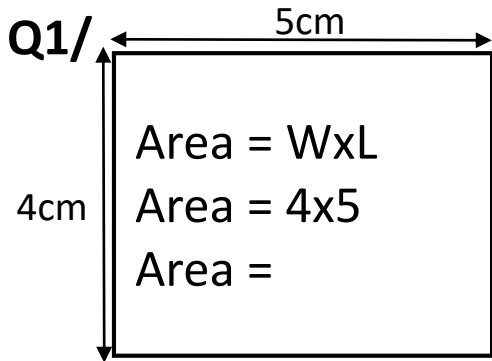
SUSPECT	BUS TAKEN	STARTING POINT	LEAVING TIME	JOURNEY TIME	ARRIVAL TIME
Happy Gary	C	Shops	10:50		
Gruff Griff	A	Park	10:59		
Heroine Hilda	B	Offices	10:57		
Musical Molly	C	School	10:52		
Paperboy Paul	B	Supermarket	10:55		
Sumo Sam	B	Barber	11:00		
Tinkerbella Tina	A	Farm	10:48		
Rich Rupert	A	Church	10:48		



HIDDEN MESSAGE - MEASURE

The criminal left behind a hidden message at the crime scene and the police need your help to crack the code. Calculate the area of each of the shapes below. Match the answers up to a letter using the table at the bottom (e.g. A=1). Fill in the missing spaces in the message at the bottom using the answers from the questions.

To work out area multiply width x length. You will need to measure the sides with you ruler to find the width and the length in CM. – DO NOT measure in inches.



Use the answers to the questions and the table below to complete the message at the bottom.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Answer
Q1

Answer
Q2

Answer
Q3

CRIME WAS

Answer
Q4

Answer
Q5

Answer
Q6

COMMITTED BY

Answer
Q7

Answer
Q8

Answer
Q9

Answer
Q10

Answer
Q11

PREVIEW for looking

TRACKING THE CRIMINAL – (INCHES)

After the crime the criminal escaped from the bank and their path was tracked using a sniffer dog. Some witness reported seeing suspects in different parts of the city after the crime.

Track the path of the criminal using the table on the side. Any suspect who was NOT seen along the path of the criminal can be crossed off the suspect list. Hint – stay on the roads



**PATH OF
CRIMINAL**

**SCALE
1INCH = 10m**

- From Bank**
- Criminal went**
 - 5 metres east,
 - 12 metres north
 - 12 metres east
 - 15 metres north
 - 30 metres west
 - 12 metres south
 - 13 metres west
 - 12 metres south
 - 7 metres east
 - 13 metres south
 - 28 metres east
 - 9 metres south
 - 25 metres east
 - 38 metres north
 - 5 metres east
 - 15 metres north

DRAFT

Thanks for looking

HOUSE MAKE OVER

Awesome work, you've caught the criminal. The public have got together and decided that as a reward they will redo your house how ever you like! Design your own house or room with anything you want in it – you just need to work out the area of everything you put in. Draw it below and then work out the areas of each feature you put in. What's going to be in your room or house? A pool table? A bowling alley? A card table? – It's up to you!



Feature 1: _____ Area: _____	Feature 2: _____ Area: _____
Feature 1: _____ Area: _____	Feature 2: _____ Area: _____
Feature 1: _____ Area: _____	Feature 2: _____ Area: _____