

MURDER ? MYSTERY

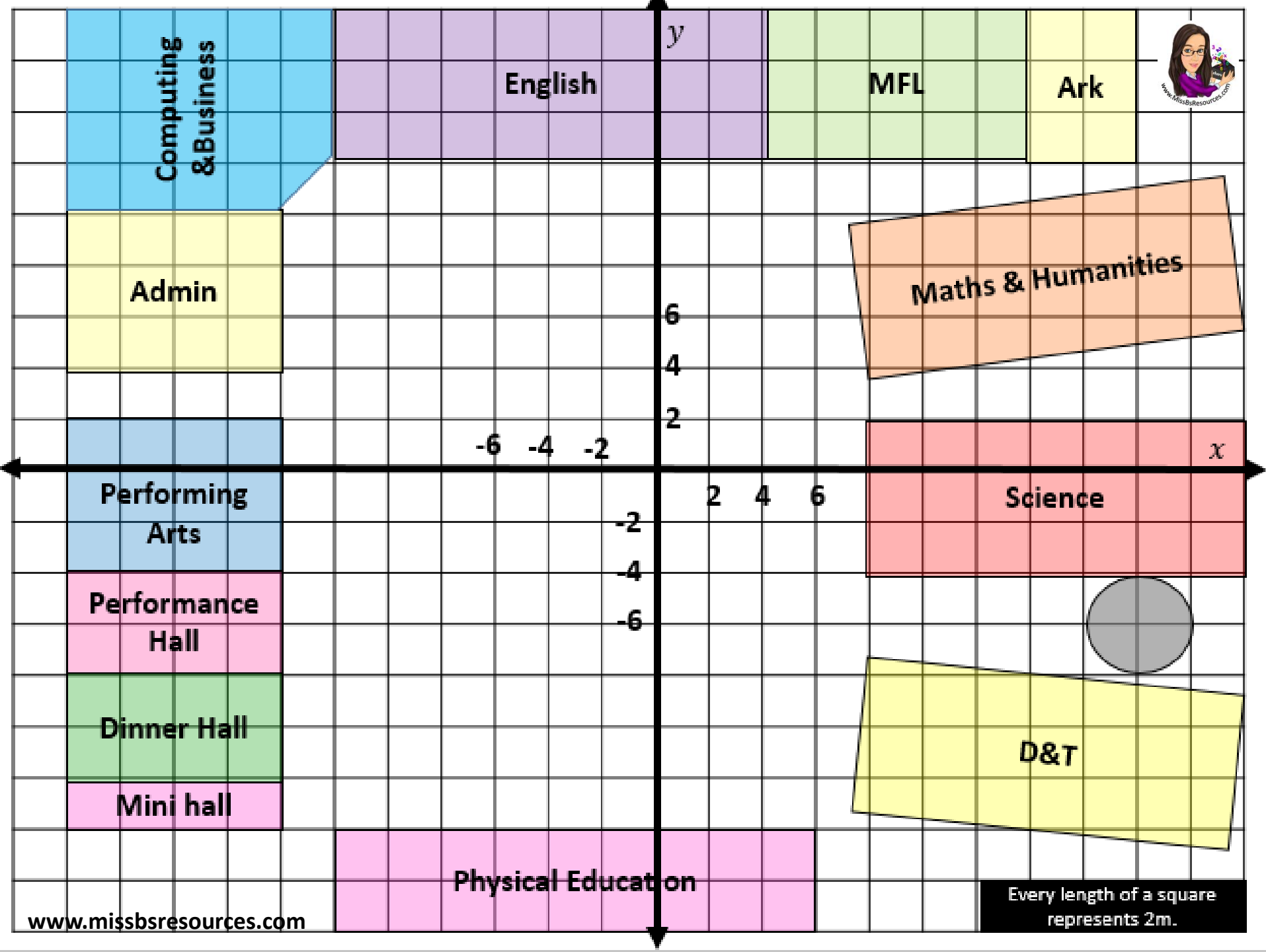


There was a murder committed at a School, when only the Micky Mouse, Sponge Bob and Garfield were in. It is down to you to help the detectives solve the mystery. You need to use and apply all of your mathematical skills in order to fine the murder scene, weapon, time frame and murderer.

The prime minister is relying on you to solve the crime.

Make sure you justify your answers mathematically and present you case in a logical manner.







Clue 1: Detectives were asked to attend a crime scene within School. Unfortunately the unknown person who left the tip off wouldn't give the police detectives a precise location.

They did however provide the detectives with a map and a piece of paper saying.

It WAS iNSide a bUildIng WiThIN the
FOLLOWiNg regions.

$$x > 4,$$
$$2 \leq y < 12$$

Can you help the detectives discover where the crime happened?



Clue 2: After finding the crime scene detectives discovered a deep wound from what looks like a pair of compasses. They used metal detectors to track down the compasses. It identified the region where they were.

Metal identified in the following
regions:

$$y < x - 4$$

$$y \geq -x$$

$$-8 \leq y < -4$$

Can you help the detectives find where the murder weapon was hidden?



Clue 3: The post mortem gave the detectives a time stamp for the murder, this will be vitally important piece of information in the investigation

The murder happened in the region of

$$4(x + 5) \geq 82 \text{ and } 2(x - 4) > 3(2x - 24)$$

Can you help the detectives discover an approximate time of murder and represent this solution set on a time line

(*Hint* Number Line).

MURDER ? MYSTERY



Clue 4: There are three possible suspects.



Micky Mouse

Is in the reflect
which is inside the
physical education
block.



Sponge Bob

Is in the D&T
department.



Garfield

Is in the
Performance
Hall.

There was a blood trail found within the following region

$$y \leq 2x + 6$$

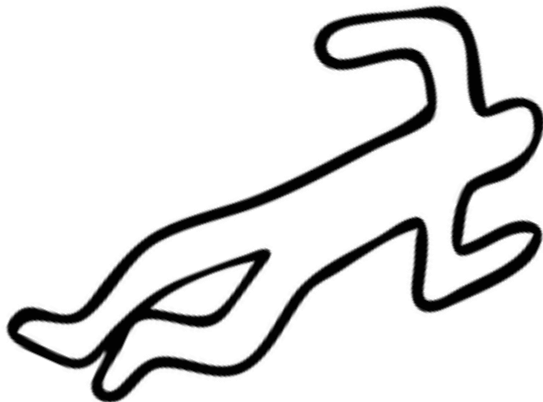
$$x < -6$$

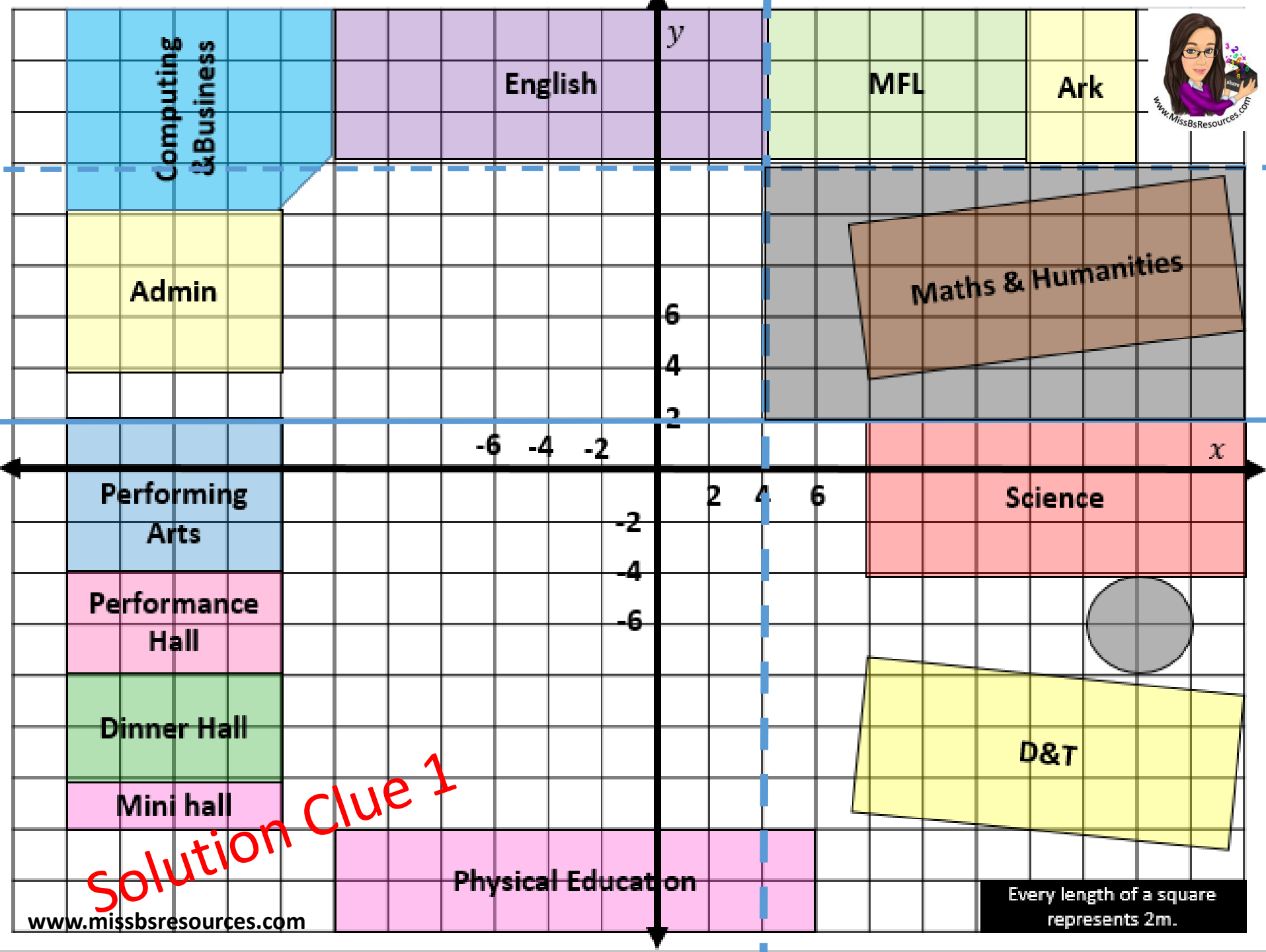
$$y \geq -x - 8$$



Solutions

- Maths Department – Murder
- Science Dome – Weapon
- Time Frame – Between 15:30 and 16:00
- Murderer – Sponge Bob





Computing
& Business

English

MFL

Ark

Admin

Maths & Humanities

Performing
Arts

Performance
Hall

Dinner Hall

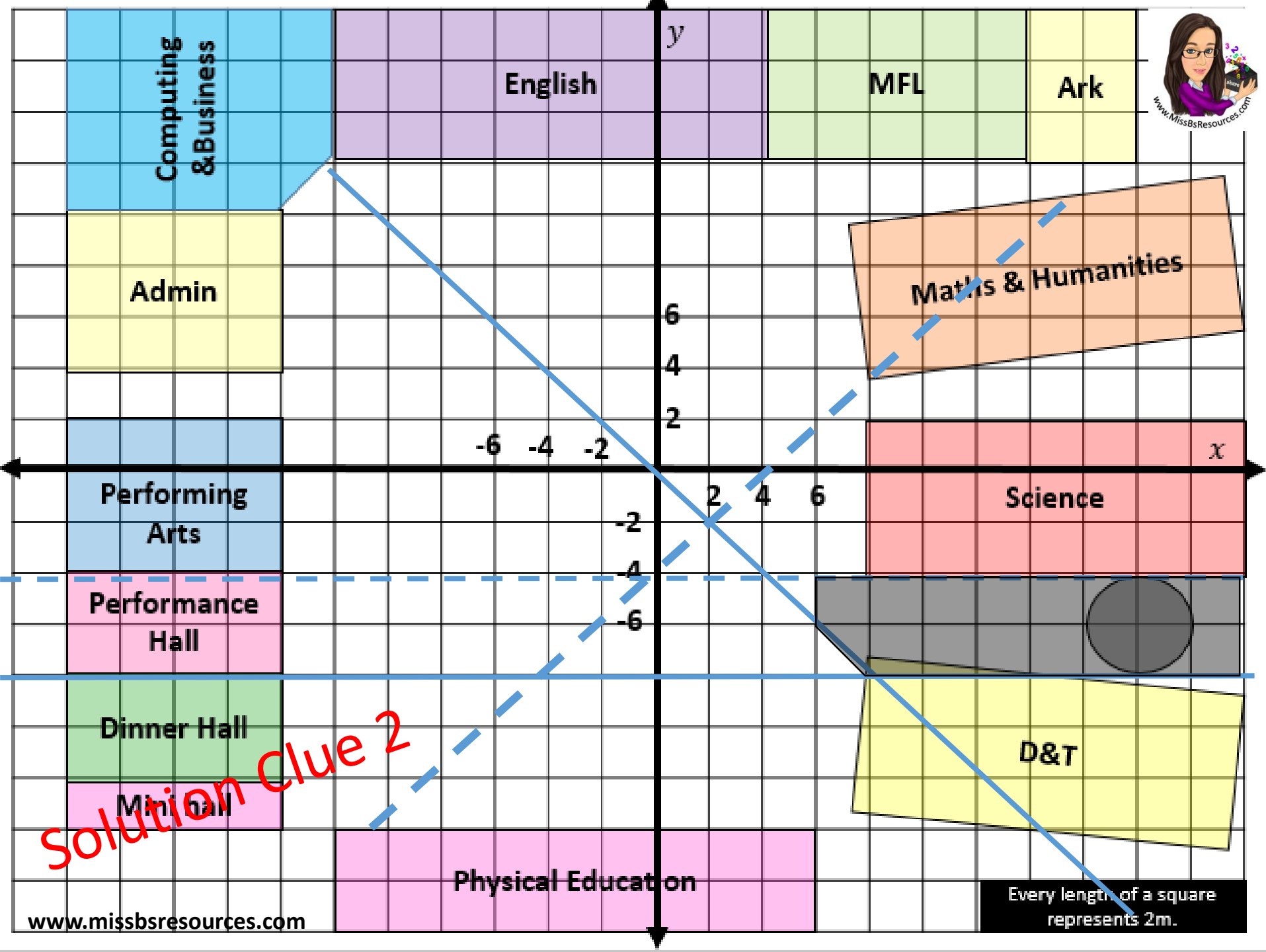
Mini hall

Physical Education

Science

D&T

Every length of a square
represents 2m.



Solution Clue 3



The murder happened in the region of

$$4(x + 5) \geq 77 \text{ and } 2(x - 4) > 3(2x - 24)$$

$$4x + 20 \geq 82$$

$$4x \geq 62$$

$$x \geq 15.5$$

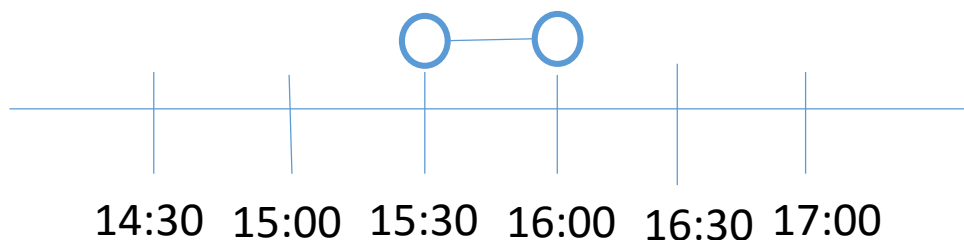
$$2(x - 4) > 3(2x - 24)$$

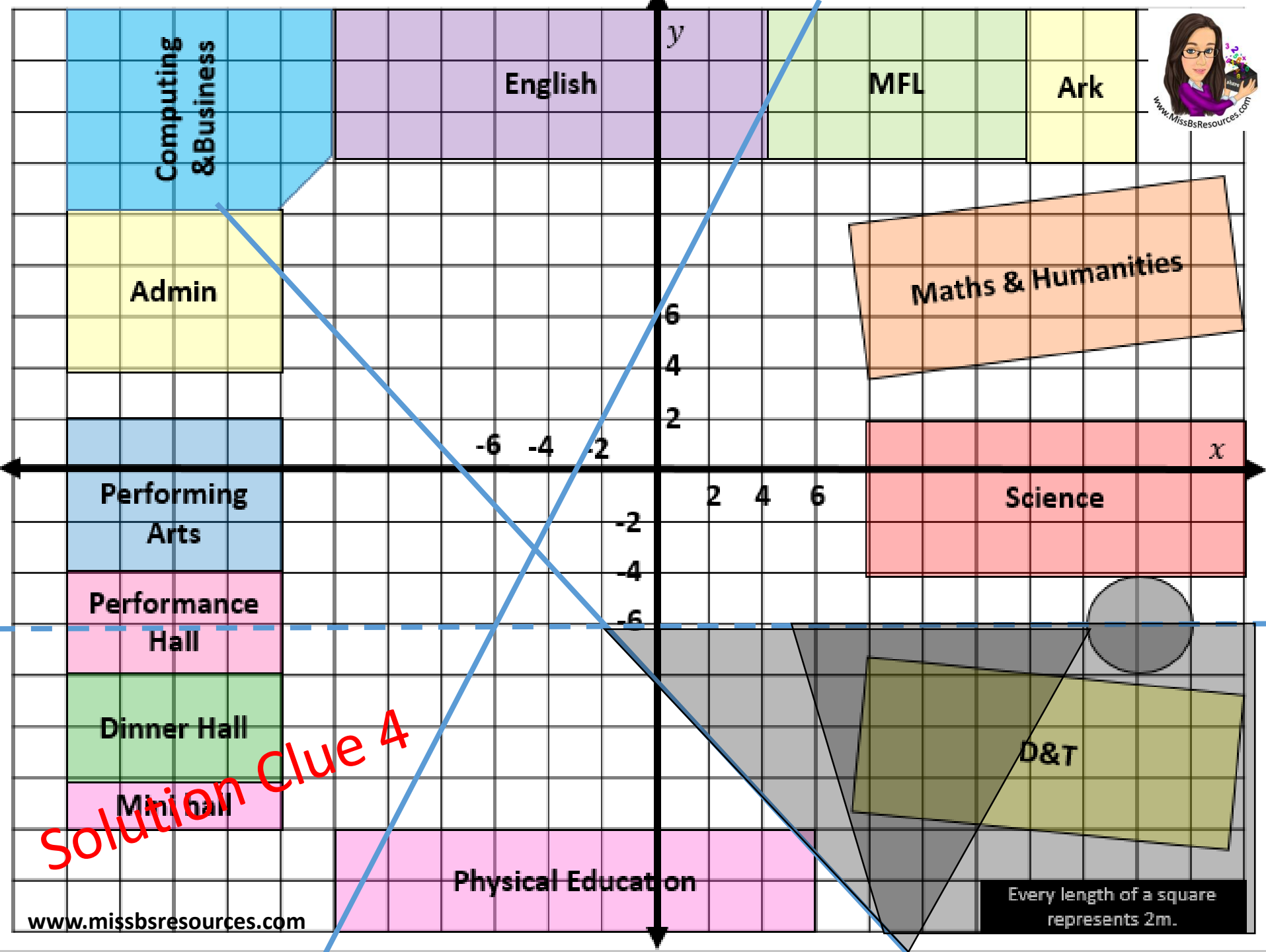
$$2x - 8 > 6x - 72$$

$$-8 > 4x - 72$$

$$64 > 4x$$

$$16 > x$$







Aims of today's lesson

Success criteria

Learning Objective

To be able to plot line graphs and understand inequality notation

SO THAT

you can represent the regions of inequalities graphically.



- Represent the graphically two or more regions.



- Represent the graphically one region.



- Represent the solution set of an inequality on a number line.