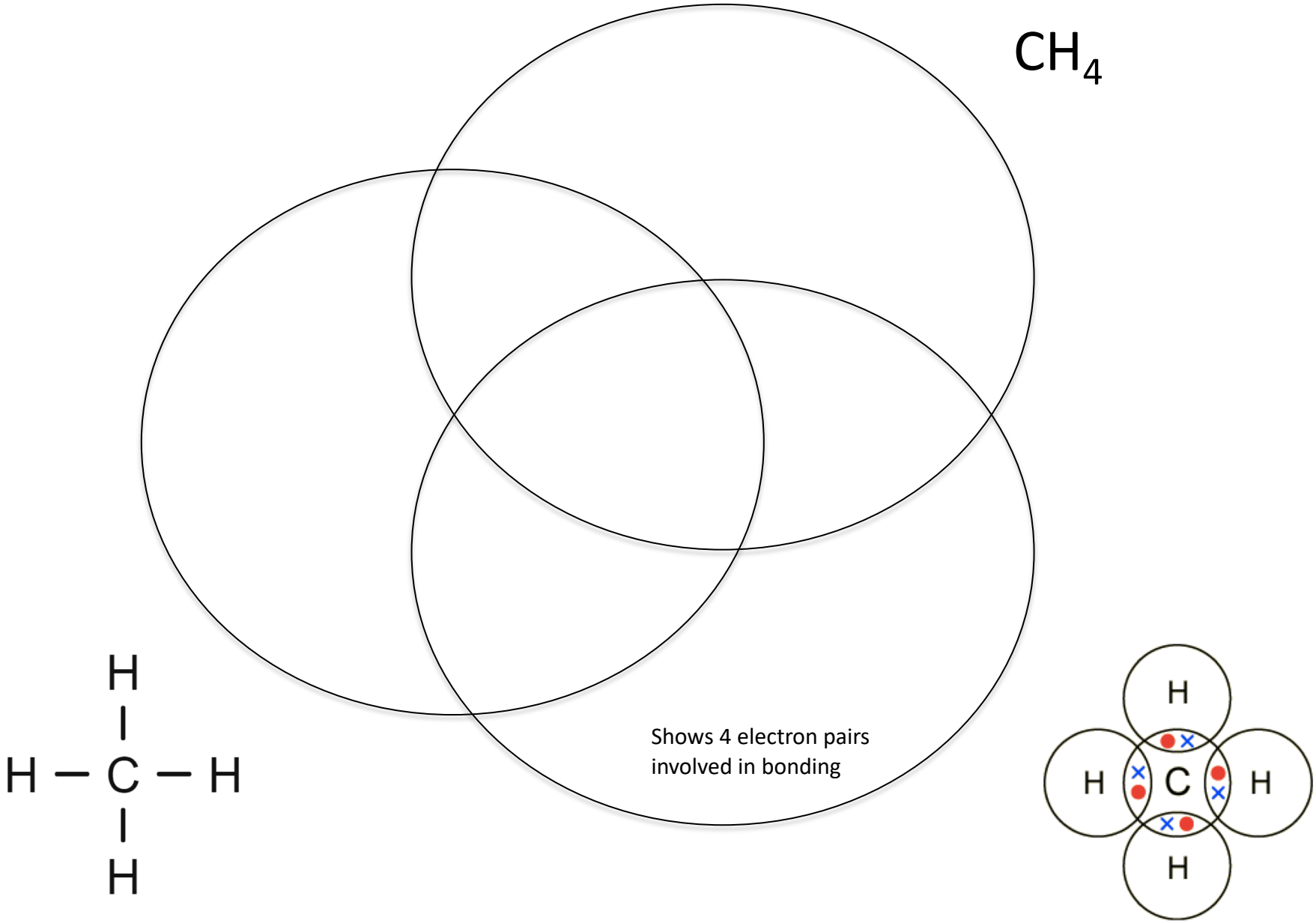
Topic	Simple chemical formulae for molecules	**Level**	GCSE (or any course for students aged 11-16)
Outcomes	Understand that molecules can be represented in different ways (molecular formula, displayed formula, dot and cross diagram) and that different representations have different uses Identify the number of each atom of each element present in a molecule using the molecular formula		
Information for teachers	This resource asks students to think about what a molecular formula tells us about a chemical substance. You will need to adapt this activity if you haven't covered covalent bonding yet (slide 3 and 4). It is helpful to have some general discussion around methane before moving into the abstract world of representations.		
Pedagogy focus	Using different representations in chemistry.		
Other resources	Other resources on equations and formulae are here: https://thescienceteacher.co.uk/moles/		

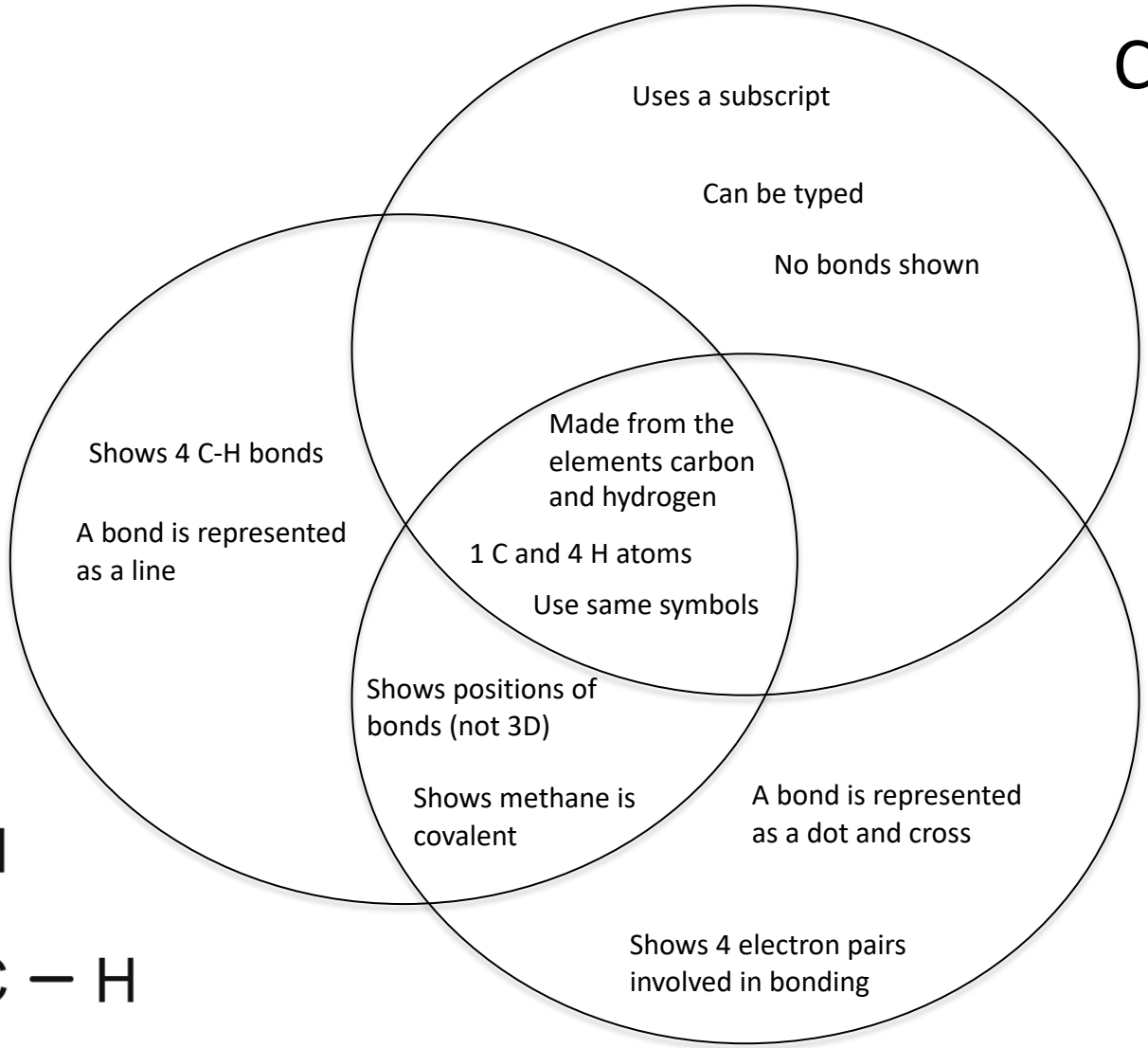
What on earth?!

Source: https://www.dailyrecord.co.uk/news/weird-news/cow-fart-crackdown-california-creates-9361672

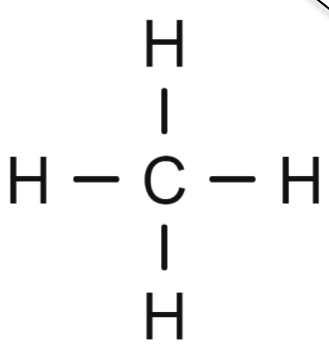
Complete the Venn diagram to describe similarities and differences between the representations of methane.

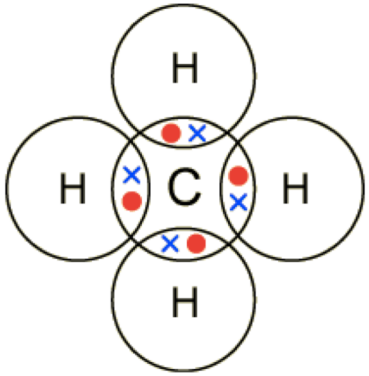


Complete the Venn diagram to describe similarities and differences between the representations of methane.



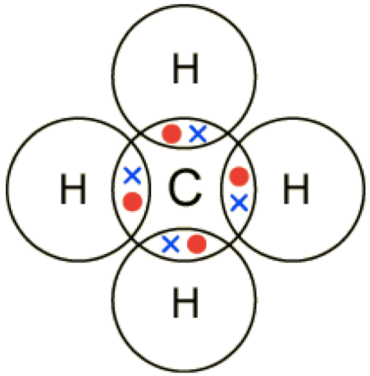
CH_4



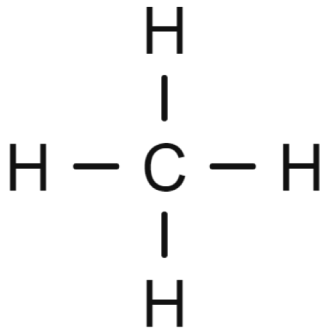


Which representation is *most* useful for…

a) writing a chemical equation?
b) working out what elements are present?
c) working out how many bonds are present?
d) working out if the substance is ionic or covalent?



dot and cross diagram



displayed formula

CH_4

molecular formula

	Formula	Name	You have seen this substance before…	Element names	Number of atoms
1	CH_4	methane	Gas stoves for cooking	Carbon and hydrogen	1 x C 4 x H
2	H_2S	hydrogen sulfide	Rotten egg smell – flatulence		
3	O_2				
4			Fire extinguishers		1 x C 2 x O
5	CH_3COOH		Putting on chips		
6	$C_{12}H_{22}O_{11}$	sucrose	Table sugar		
7			Used to bleach hair		2 x H 2 x O
8	$C_8H_{10}N_4O_2$	caffeine			
9	$C_8H_9NO_2$	paracetamol			
10		copper			