

Chemcat

Q: What does smell mean?

Q: Why do we have the smell sense?

Q: What do you think our nose is detecting when we smell something?

Notes

• How do chemists classify smells?

• What is a molecular formula?

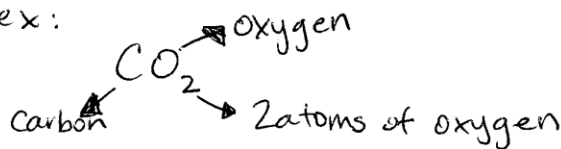
• Smell Classifications: general terms that describe a group of smells

- Putrid = repulsive
- Camphor = medicinal / herbal
- Sweet = flowery or fruity
- Minty = minty
- Fishy = fishy

• Wafting: proper way to smell chemicals

- a shorthand way to represent a molecule
- provides the # & kind of each atom
- synonym for chemical formula
- molecule = 2 or more atoms bound together as one unit

• ex:



Sniffing Cat Food & Stinky Cheese Activity:

Part 1:

Obtain the baggies with the different household substances below and describe its smell using the proper smell classifications:

<u>Substance</u>	<u>Smell Classification</u>
Blistex	
Mint leaves	
Cat food	
Chapstick	
Tea bag	
Perfume	
Cheese	
Vapor Rub	
Altoids	

Part 2:

Obtain vials A-E from your teacher. Open the vial, properly smell it, and describe its smell using the proper smell classification:

<u>Vial</u>	<u>Smell</u>	<u>Chemical Name</u>	<u>Molecular Formula</u>
A		L-carvone	$C_{10}H_{14}O$
B		Phenylethylamine	$C_8H_{11}N$
C		Amyl propionate	$C_8H_{16}O_2$
D		Isoamyl acetate	$C_7H_{14}O_2$
E		Menthone	$C_{10}H_{18}O$
F		Ethyl valerate	$C_7H_{14}O_2$
G		Butyric acid	$C_4H_8O_2$
H		Ethyl acetate	$C_4H_8O_2$

Question:

1. Look for patterns in the data. Write down at least 8 patterns you discover between the data and the various smells.

Making Sense Notes:

• What patterns help predict smell?

• Smell is related to atoms other than C & H

• if it has...

it will smell...

1 O

minty

2 O

sweet/putrid

1 N

fishy

* Some molecules have the same molecular formula, but smell different!

- The atoms in the molecule are arranged differently

Check-In:

Q: How would $C_8H_{16}O_2$ smell?

A: Sweet or putrid