

ADVENTURES IN CHEMISTRY

RECAP!

CTYI 2020

SARA USAI

HI GUYS! I HOPE
YOU ARE WELL,
YOU ARE STAYING
HOME AND YOU
ARE WASHING
YOUR HANDS
OFTEN!



YES, WASHING
YOUR HANDS! I AM
WASHING MY PAWS
QUITE OFTEN
MYSELF! EVEN IF I
HATE WATER!!!



BUT LET'S GO TO
THE IMPORTANT
PART...
CHEMISTRY!

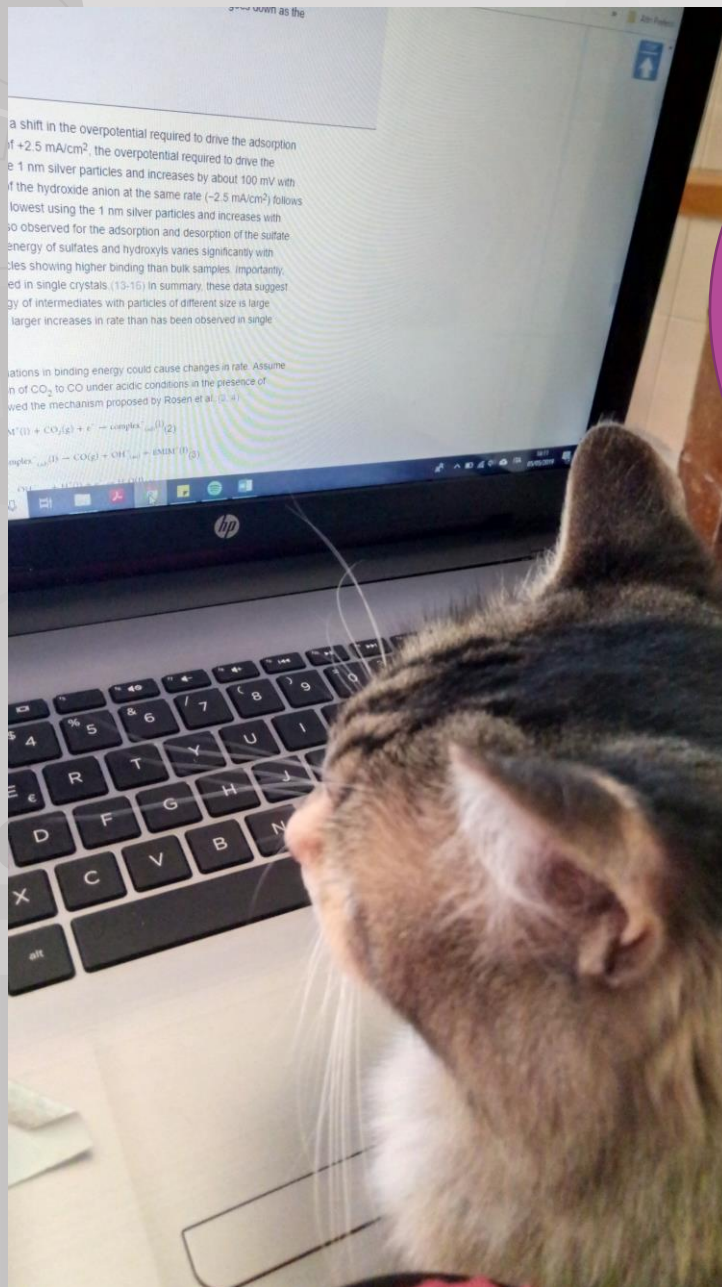


BECAUSE SARRI
CANNOT TEACH
FOR THE LAST TWO
CLASSES, SHE
ASKED ME TO FILL
IN FOR HER. I HOPE
IT IS OKAY!



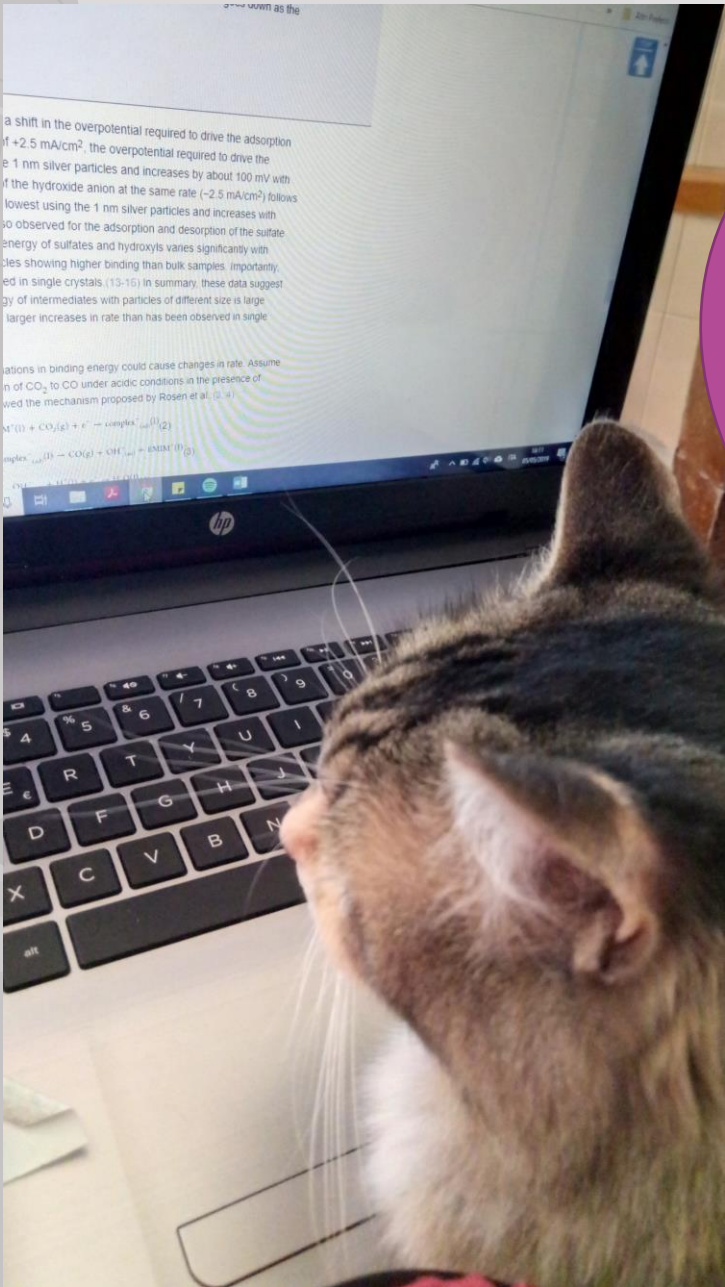
BEFORE WE
CONTINUE, LET'S
RECAP A BIT WHAT
WE DID BEFORE.
ARE YOU READY?





THE ONLY THINGS YOU NEED FOR THE RECAP ARE THESE SLIDES, A PIECE OF PAPER AND A PENCIL TO WRITE DOWN YOUR ANSWERS!





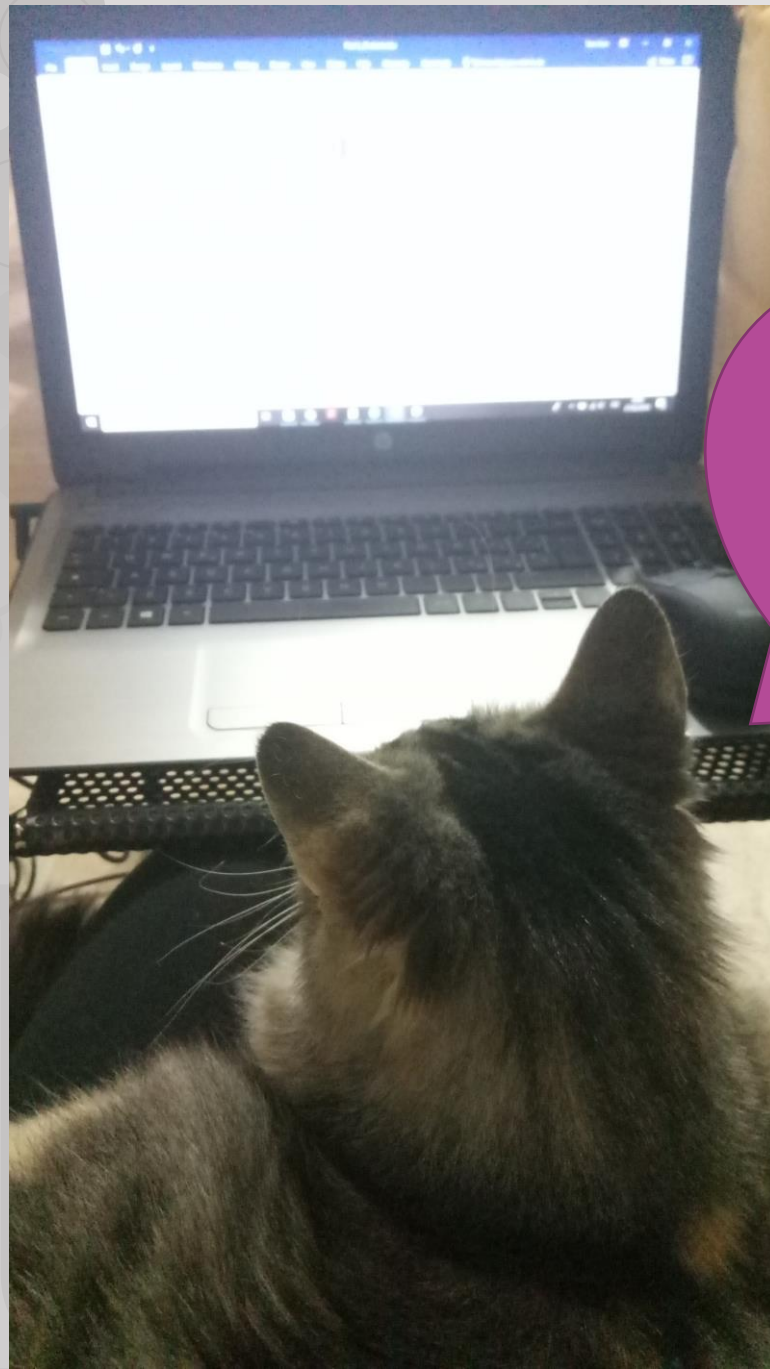
YES, YOUR ANSWERS! WE ARE GOING TO PLAY A GAME! OH! I LOVE GAMES!



RULES!

1. READ THE QUESTION IN THE PURPLE RECTANGLE
2. CHANGE PAGE TO SEE ALL THE POSSIBLE ANSWERS
(THERE ARE ALWAYS 3 ANSWERS, SO CLICK ONLY 3 TIMES!)
3. WRITE DOWN YOUR ANSWER (A, B or C) IN YOUR PIECE OF PAPER/NOTEBOOK
4. CHANGE PAGE AGAIN TO SEE THE CORRECT ANSWER
5. DRAW A STAR FOR EACH CORRECT ANSWER!
6. COUNT THE NUMBER OF STARS AND CHECK THE RESULTS AT THE END





LET'S SEE WHICH
TYPE OF
CHEMICAL CAT
YOU ARE!
READY?
GO!



1) WHAT IS CHEMISTRY ABOUT?



1) WHAT IS CHEMISTRY ABOUT?

A. CATS!



1) WHAT IS CHEMISTRY ABOUT?

A. CATS!

B. CHANGE (IN CHEMICAL WAY!)



1) WHAT IS CHEMISTRY ABOUT?

A. CATS!

B. CHANGE (IN CHEMICAL WAY!)

C. MOLECULES



1) WHAT IS CHEMISTRY ABOUT?

A. CATS!

B. CHANGE (IN CHEMICAL WAY!)

C. MOLECULES



IN REACTIONS,
CHANGES HAPPEN!
WE WILL NOT HAVE
WHAT WE HAD AT
THE BEGINNING!



2) HOW IS EVERYTHING AROUND US CALLED?



2) HOW IS EVERYTHING AROUND US CALLED?

A. MATTER



2) HOW IS EVERYTHING AROUND US CALLED?

A. MATTER

B. CATS!



2) HOW IS EVERYTHING AROUND US CALLED?

A. MATTER

B. CATS!

C. WATER



2) HOW IS EVERYTHING AROUND US CALLED?

A. MATTER

B. CATS!

C. WATER



EVERYTHING THAT IS
AROUND US IS CALLED
MATTER!
A HOUSE IS MATTER,
WATER IS MATTER,
YOU AND YOUR FAMILY
ARE MATTER
AND, OBVIOUSLY,
I AM MATTER AS WELL!



3) WHICH ONE HAS HIGHER MASS?



3) WHICH ONE HAS HIGHER MASS?

A. 10 mL of WATER



3) WHICH ONE HAS HIGHER MASS?

A. 10 mL of WATER

B. 10 mL of OIL



3) WHICH ONE HAS HIGHER MASS?

A. 10 mL of WATER

B. 10 mL of OIL

C. ZERO CATS

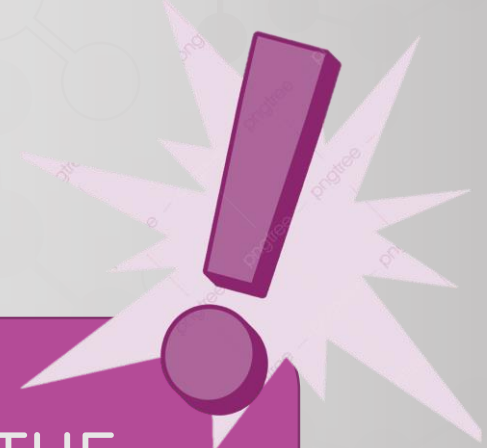


3) WHICH ONE HAS HIGHER MASS?

A. 10 mL of WATER

B. 10 mL of OIL

C. ZERO CATS



HINT!
WE USED THE
BALANCE/SCALE TO
CHECK THE MASS OF
MANY OBJECTS!

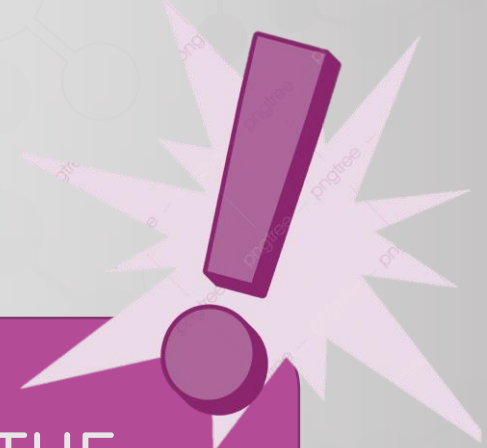


3) WHICH ONE HAS HIGHER MASS?

A. 10 mL of WATER

B. 10 mL of OIL

C. ZERO CATS



HINT!
WE USED THE
BALANCE/SCALE TO
CHECK THE MASS OF
MANY OBJECTS!



DIFFERENT MOLECULES HAVE
DIFFERENT MASSES!
WATER MOLECULES ARE
SMALLER THAN OIL MOLECULES
SO IN THE SAME CONTAINER
YOU CAN FIT MORE MOLECULES
OF WATER THAN MOLECULES
OF OIL!



4) HOW MANY TYPES OF MIXTURE EXIST?



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A. 2: SOLUTION & SHAKES



4) HOW MANY TYPES OF MIXTURE EXIST?

A. 2: SOLUTION & SHAKES

B. 1: CATS!



4) HOW MANY TYPES OF MIXTURE EXIST?

A. 2: SOLUTION & SHAKES

B. 1: CATS!

C. 3: SUSPENSIONS, COLLOIDS & SOLUTIONS



4) HOW MANY TYPES OF MIXTURE EXIST?

A. 2: SOLUTION & SHAKES

B. 1: CATS!

C. 3: SUSPENSIONS, COLLOIDS & SOLUTIONS



DO YOU
REMEMBER
THIS?



EVERYTHING IS
made up of a **MIXTURE**

THERE ARE **3** TYPES OF MIXTURES



SUSPENSION

Larger pieces floating in
or combined with
something else.

Largest
particles



COLLOID

Much smaller pieces that
are mixed together but
do not combine.



SOLUTION

One thing dissolved in
another - the particles are
so tiny you can see
through it.

Smallest
particles

emulsion

is a colloid made
with substances
that don't easily
mix together.



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?

A. SUGAR



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?

A. SUGAR

B. VINEGAR



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?

A. SUGAR

B. VINEGAR

C. OIL



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?

A. SUGAR

B. VINEGAR

C. OIL



TRY TO REMEMBER
WHEN WE MIXED THIS
COMPOUNDS IN
CLASS



5) WHAT CAN YOU NOT MIX WITH WATER TO MAKE A SOLUTION?

A. SUGAR

B. VINEGAR

C. OIL



TRY TO REMEMBER
WHEN WE MIXED THIS
COMPOUNDS IN
CLASS



SOME COMPOUNDS ARE NOT MISCIBLE (YOU CANNOT MIX THEM TOGETHER). IT DEPENDS ON THE PROPERTIES/CHARACTERISTICS OF THE COMPOUND!



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?

A. NEUTRALISATION



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?

A. NEUTRALISATION

B. PRECIPITATION



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?

A. NEUTRALISATION

B. PRECIPITATION

C. CAT-IFICATION



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?

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DO YOU REMEMBER
THE BLUE SOLID WE
OBSERVED DURING
THE EXPERIMENTS?



6) HOW IS A REACTION IN WHICH A SOLID IS FORMED CALLED?

A. NEUTRALISATION

B. PRECIPITATION

C. CAT-IFICATION



DO YOU REMEMBER
THE BLUE SOLID WE
OBSERVED DURING
THE EXPERIMENTS?



WHEN A SOLID IS FORMED
FROM A LIQUID, IT
PRECIPITATES!
ENJOY SOME VIDEOS WITH
SOME AMAZING PRECIPITATION
REACTIONS!
JUST CLICK ON THE VIDEO IN
THE NEXT SLIDE



- <https://www.youtube.com/watch?v=BGUfC3UUBkI>
- <https://www.youtube.com/watch?v=8oc1jFqYnFA>
- <https://www.youtube.com/watch?v=4soja4eu35o>



7) WHAT HAPPENS WHEN YOU ADD VINEGAR TO BAKING SODA?



7) WHAT HAPPENS WHEN YOU ADD VINEGAR TO BAKING SODA?

A. A CAT APPEARS



7) WHAT HAPPENS WHEN YOU ADD VINEGAR TO BAKING SODA?

A. A CAT APPEARS

B. THE SOLUTION CHANGES COLOUR



7) WHAT HAPPENS WHEN YOU ADD VINEGAR TO BAKING SODA?

A. A CAT APPEARS

B. THE SOLUTION CHANGES COLOUR

C. BUBBLES!!!



7) WHAT HAPPENS WHEN YOU ADD VINEGAR TO BAKING SODA?

A. A CAT APPEARS

B. THE SOLUTION CHANGES COLOUR

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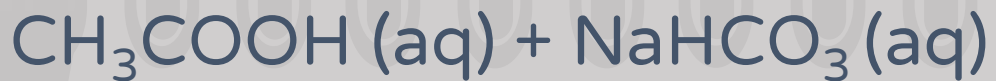


WHEN VINEGAR IS ADDED TO BAKING SODA, CO₂ IS FORMED! LOOK AT THE REACTION BELOW! WHEN A BASE AND A ACID ARE MIXED WE HAVE A NEUTRALISATION REACTION!



vinegar

baking soda



salt

carbon
dioxide

water

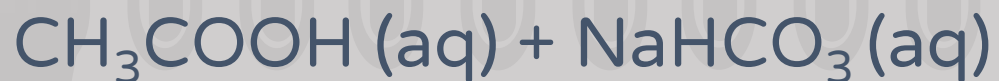




WHEN VINEGAR IS ADDED TO BAKING SODA, CO_2 IS FORMED! LOOK AT THE REACTION BELOW! WHEN A BASE AND A ACID ARE MIXED WE HAVE A NEUTRALISATION REACTION!

vinegar

baking soda



salt

carbon
dioxide

water



!!! REMEMBER!!!
NOT ALL THE
NEUTRALISATION
REACTIONS PRODUCE
CO₂!
IT DEPENDS ON THE
ACID AND BASE USED!

WHEN VINEGAR IS ADDED TO
BAKING SODA, CO₂ IS FORMED!
LOOK AT THE REACTION BELOW!
WHEN A BASE AND A ACID ARE
MIXED WE HAVE A
NEUTRALISATION REACTION!



WELL DONE! YOU
ANSWERED ALL THE
QUESTIONS! LET'S
SEE HOW MANY
STARS YOU GOT!



AND NOW GO AND
CHECK WHICH TYPE
OF CHEMICAL CAT
YOU ARE!



n° stars	WHICH CHEMICAL CAT ARE YOU?
0-3	LIQUID CAT
4-6	CAT WITH SAFETY GOOGLES
7	NINNI!



LIQUID CAT



no, cats are not liquids, even if they try. You need to refresh some things, but well done, you finished all the questions and you did not stop to go and get some treats or follow a string!

CAT WITH SAFETY GOOGLES



we are very close! you wore your safety goggles (and you did not remove them!) and even a fancy necktie, but you forgot your gloves and lab coat! do not worry, next time you will be ready!

NINNI!



well, what can we say? super well done! you are now ready to go, enter into the lab and help Ninni with her experiments! remember to hide all the string around, though, we do not want her to get distracted!

