



SIE

INDOOR AIR QUALITY



Booklet for Schools



Developed by

Techknowgreen Solutions Limited (TSL)

and

Society for Indoor Environment(SIE)



Acknowledgement

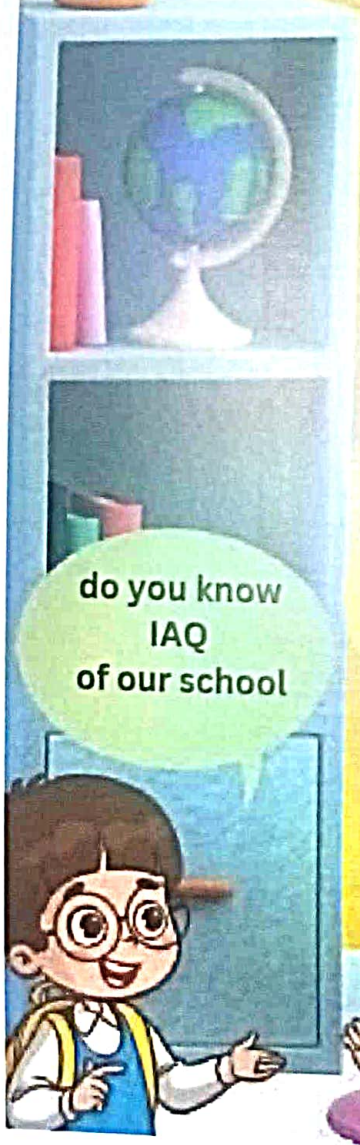
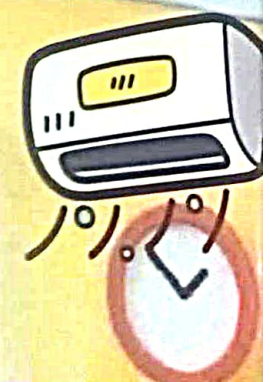


Maharashtra Pollution Control Board
महाराष्ट्र प्रदूषण नियंत्रण मंडळ

We extend our sincere gratitude to the Maharashtra Pollution Control Board (MPCB) for entrusting us with this prestigious work. MPCB's unwavering commitment to environmental protection and public health is commendable, and we are honored to contribute to this initiative. We appreciate the trust placed in us and remain dedicated to providing actionable insights to support MPCB's efforts in ensuring cleaner air and a healthier future for all.

LET'S
TALK


INDOOR AIR QUALITY



do you know
IAQ
of our school


DON'T
KNOW
LET'S CHECK





What is Indoor Air Quality?

INDOOR AIR QUALITY (IAQ) REFERS TO HOW CLEAN OR DIRTY THE AIR IS IN INDOOR ENVIRONMENTS, LIKE OUR HOMES, SCHOOLS, AND OTHER BUILDINGS. IT'S IMPORTANT BECAUSE THE AIR WE BREATHE CAN AFFECT OUR HEALTH.



IAQ
INDOOR AIR QUALITY



Biological Contaminants (Bacteria, Dust Mites, Pollen)

- These can trigger allergies and asthma.

Carbon Monoxide (CO)

- A dangerous gas from combustion appliances, which can be harmful in poorly ventilated areas.

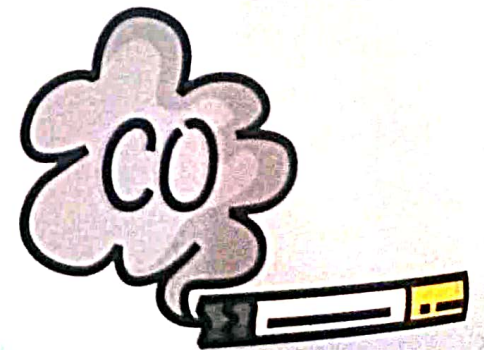
Formaldehyde

- Found in building materials and furniture, it can cause irritation and long-term health problems.



Bacteria

Molds



"Airborne Allergens: Pollen, pet dander, and dust mites."

"Mold Spores: Can cause allergies and respiratory issues."

"Particulate Matter: Can irritate lungs and worsen asthma."

"CO₂ from Breathing: Can reduce air quality in enclosed spaces."

"VOCs: Emitted from cleaning products and markers, harmful with prolonged exposure."

Dust Particles: Common allergen, affects respiratory health.

"Radon Gas: Naturally occurring, radioactive, and linked to lung cancer."

"Formaldehyde: Found in furniture, causes irritation and long-term health risks."



How outdoor air quality impacts indoor air quality

DID YOU KNOW?

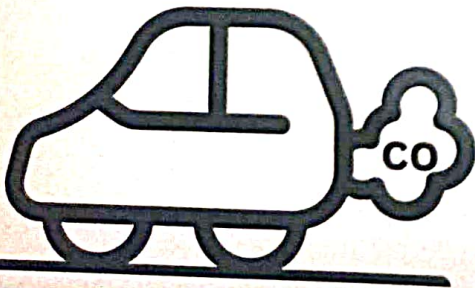


Some of the pollutants, such as ozone and nitrogen dioxide emitted from vehicle exhaust, react with off-gassing from building materials and furniture as well as with chemicals in cleaning supplies and other household items, creating new compounds like formaldehyde that make indoor air even more toxic

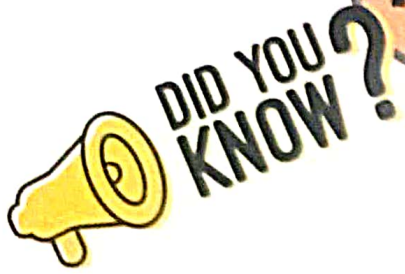
NO_x

SO_x

CO



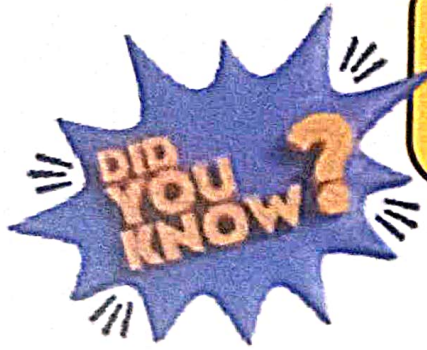
Impacts of poor indoor air quality



Health Problems: Exposure to indoor air pollutants can lead to respiratory issues, allergies, headaches, and fatigue. Long-term exposure might contribute to more serious health conditions like asthma, bronchitis etc.

Reduced Academic Performance: Poor air quality can affect students' concentration and cognitive performance, potentially impacting learning outcomes.

Environmental Harm: Accumulated VOC emissions and pollutants from indoor sources can contribute to outdoor air pollution and climate change.



How Poor IAQ Affects Health

Short term

Long-term



Headaches

Asthma



Sneezing

Allergies



Coughing

Poor concentration



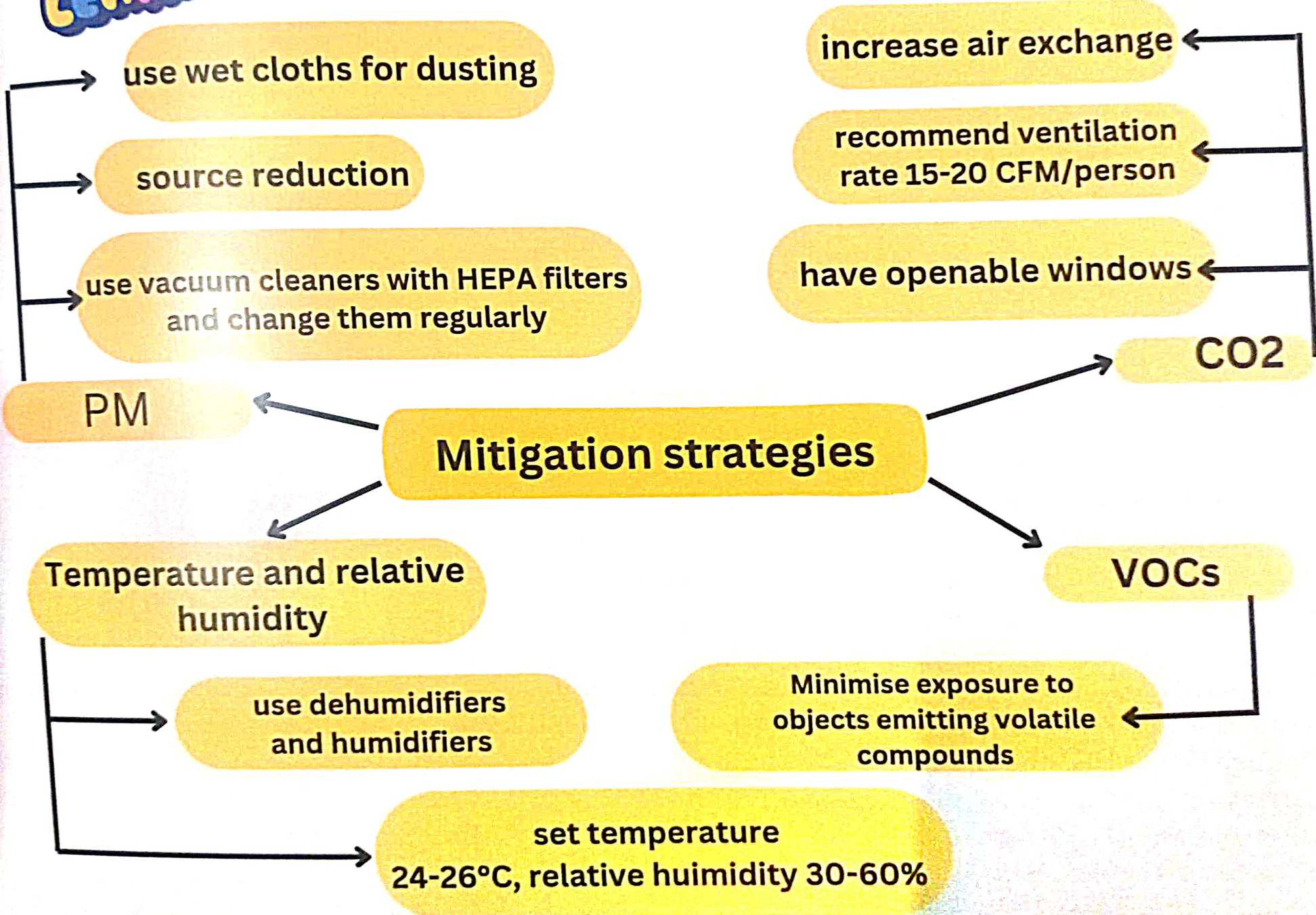
Itchy eyes

Fatigue



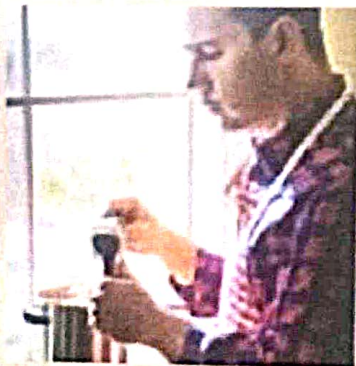
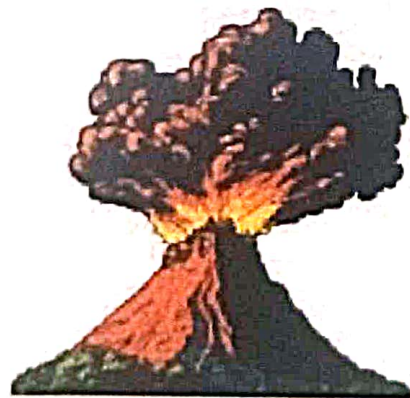
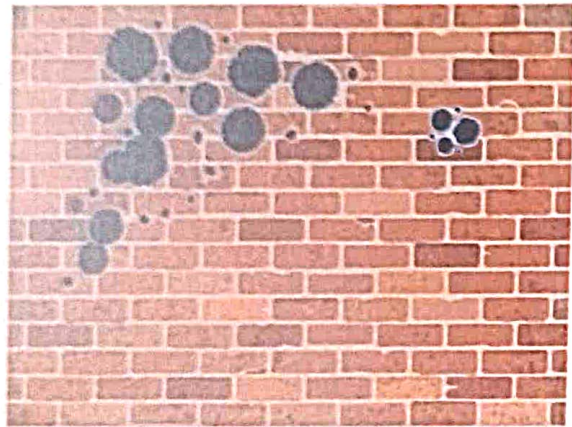


How to Improve Indoor Air Quality





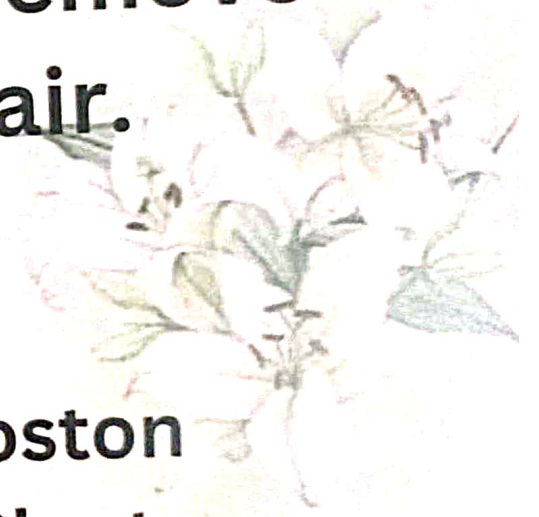
Can you identify indoor air pollutants here??



DID YOU KNOW?



Some plants can actually clean the air! Plants like the spider plant and peace lily are known to remove pollutants from the air.



The Peace Lily, Spider Plant, Snake Plant, Boston Fern, Areca Palm, English ivy, and Rubber Plant are among the top choices for their ability to remove common indoor pollutants like formaldehyde, benzene, and carbon monoxide.



IAQ CROSS-WORDS

ASTHMA

BACTERIA

CARBON DIOXIDE

CARBON MONOXIDE

COMBUSTION

DUST MITES

FUNGI

GROUND OZONE

HUMIDITY

PAINTS

PARTICULATE MATTER

PESTICIDES

POLLEN

SMOG

TEMPERATURE

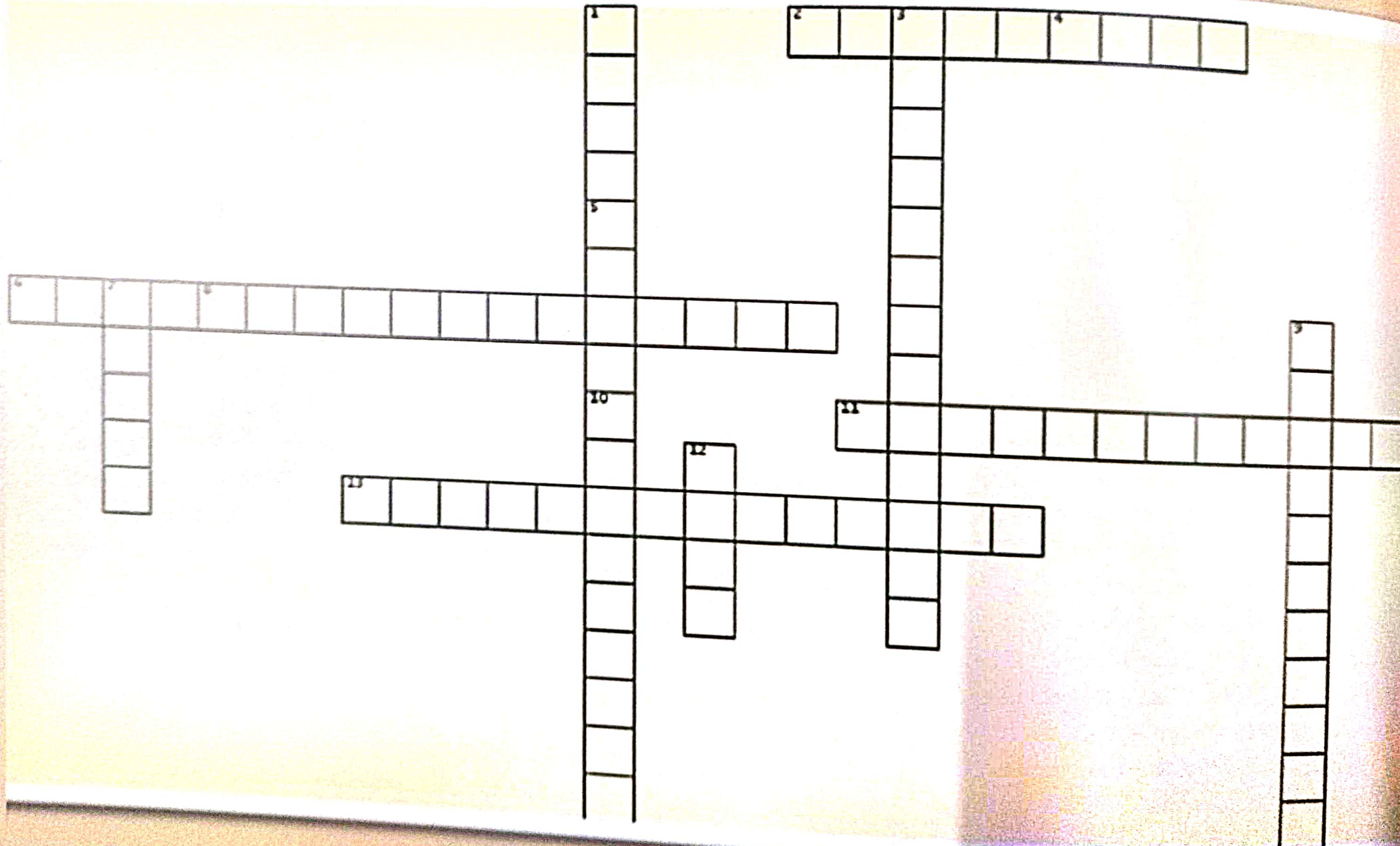
VENTILATION SYSTEM

VIRUS

VOC

P Y T I M S X Y D D P L C S A P B N O M
Z O T O N Z U R N I W H A Y I E A O Z E
U X L I I N P L M B S U R P R S C I L T
O D O L D A M H T S A M B F P T T T E S
S N H V E I R G N M F X O Y O I E S L Y
F E N P Y N M Q L E M D N G L C R U T S
F L V Q B T O U L P G Q D U L I I B L N
R Y N O T V D Q H C J U I O U D A M U O
S E T I M T S U D O P T O O T E X O C I
J Q N F B L U B K V W Z X C I S W C E T
S V A W U B Z Q A M B D I K O C K S J A
G R O U N D O Z O N E I D E N A E O N L
A N P A R T I C U L A T E M A T T E R I
T E R U T A R E P M E T P F S Q P Y V T
P L L J X D S H Y R Z A M W U S N I S N
G D M Y F W F Y E I I P W K U N R J H E
V C A R B O N M O N O X I D E U G B W V
A W B P H C I O T F L P J D S X A I I R
H L O O E H E S Y X Q M X S F X P G B R
W N V H H A O S L T I S Q H O R N Q C S

Fill the puzzle with above given words :



Glossary

Air quality :When air quality is good, the air is clean and contains only small amounts of particles and chemical pollutants.

Pollution: Pollution occurs when substances that can cause illness or damage to the environment end up in the air, water, or ground.

Solid particles: Particles of smoke, dust, or dirt that float in the atmosphere are known as solid particles. Although they are not usually visible, an excessive amount can contaminate the air and make breathing difficult.

Ventilation : Ventilation is the process of exchanging indoor air with fresh outdoor air to improve it's quality inside a building or space.

Mold : Mold is a type of fungus that looks like tiny, fuzzy spots or patches, often green, black, or white. It grows in places that are damp or wet, like bathrooms, kitchens, or basements.



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