

Gold nanofilm can stop glasses fogging up

Introduction

Scientists work to understand the world around us and what they find out often ends up in the news. The work of scientists impacts our lives all the time, so it's useful to be able to understand science writing. Read the science news story below and answer the questions.

Gold nanofilm can stop glasses fogging up



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- 1 Fogging on glasses occurs when warm, moist air meets a cold surface, causing
- 2 water **vapour** to **condense**. Most antifogging coatings work by causing the water
- 3 droplets that form on a surface to spread out into a thin film. Unfortunately, these
- 4 coatings also attract contaminants.
- 5 In a new approach, scientists have coated lenses with a five nanometre layer of
- 6 gold. The gold absorbs the infrared parts of sunlight and uses the energy to heat the
- 7 surface to prevent **condensation**. The coating is scalable and durable.

Questions

1. Do you wear glasses, or do you know someone who does? Briefly write down what glasses are for and what you know about how they work.
2. Imagine it's a cold winter's day, and you're wearing glasses. Are they more likely to fog up when you walk from outside into a warm building, or when you leave a warm building and walk outside? Explain your answer.
3. Write down the meaning of these scientific words from the story – have you seen or heard these words before? Look them up in the glossary on page 3.

- (a) Condense
- (b) Nanofilm
- (c) Vapour

Use the scale below to rate how much using the glossary is helping you understand the science in the story.

1 2 3 4 5 6 7 8 9 10
Not helping → Really helping

4.

- (a) Get two different colour pencils. Circle any scientific words in colour one.
- (b) Using colour two, circle about five to ten words that communicate the key message in the story.

Use the scale below to rate how much circling words is helping you to understand the news story.

1 2 3 4 5 6 7 8 9 10
Not helping → Really helping

Use the scale in the box above to rate how confident you would feel explaining the story to the person next to you. Think of something else you can do when reading the text to help you understand the story and share it with the person next to you.

- 5.** Write down one new thing you have learnt from reading this science news story.
- 6.** Write your own summary of the story for the other learners in your class. Use the prompts below.
 - What have the scientists discovered? Try to write this in just one sentence. (Findings)
 - What was the problem they were trying to solve? (Context)
 - Why does their discovery matter? (Relevance/application)
 - Think about who it matters to and what impact it could have for them. (Impact)

Glossary

Words in bold are chemistry key terms that you will find in our key terms support resources.

Unfamiliar word	What it means
Absorbs	takes in energy or a liquid or other substance by chemical or physical action
Antifogging	things to try and stop water condensing onto surfaces, like glasses
Coating	a layer of a particular substance that covers a surface
Condensation	see condense
Condense	when a gas is cooled, energy is transferred from the gas to the gas' surroundings and the gas turns into a liquid
Contaminant	a substance that makes something less pure
Durable	able to last and be used for a long time without being damaged
Infrared	a type of light (part of the electromagnetic spectrum) that feels warm but cannot be seen
Lenses	a curved piece of material like glass that changes how things look, for example in glasses
Nanofilm	a very thin layer of material which is nanometres thick
Nanometre	thousands of millionths/billionths of a metre
Scalable	able to be made larger
Vapour	another word for a gas or mixture of gases

Definitions of absorbs, coating, contaminant, durable, infrared, lenses, scalable from Cambridge Dictionary, www.dictionary.cambridge.org, © Cambridge University Press. Accessed January 2025. Used with permission.