

Common disinfectant wipes expose people to dangerous chemicals, research reveals

Level 3: Advanced – Teacher's notes

Article summary: The article describes recent research on toxic chemicals used in disinfectant cleaning products and their effects on human health.

Time: 60 minutes

Skills: Reading, Speaking, Writing

Language focus: Modal verbs

Materials needed: One copy of the worksheet per student

1. Warmer

- a. This activity aims to get students to think about their opinions and experiences with disinfectants. Encourage students to share personal examples and support their opinions with reasons.

2. Key words

- a. Ask students to do the exercise individually and then compare their answers in pairs or small groups.

Key:

- | | |
|--------------------|---------------------|
| 1. c. onset | 9. d. infertility |
| 2. b. disinfectant | 10. b. disorder |
| 3. a. alarming | 11. a. exposure |
| 4. d. component | 12. c. inhalation |
| 5. b. assemble | 13. c. persistent |
| 6. c. resistance | 14. a. accumulate |
| 7. a. hazard | 15. d. transmission |
| 8. a. pesticide | |

- b. Before reading the article carefully, students use some of the key words to fill the gaps in the sentences to ensure that they understand and know how the words are used in other contexts.

NOTE: The article uses the idiom *go through the roof*. Ask students if they can guess the meaning. Elicit that, in this context, it means *something grows or increases very quickly*.

Key:

- | | |
|-----------------|----------------|
| 1. disinfectant | 6. disorders |
| 2. assemble | 7. Exposure |
| 3. resistance | 8. component |
| 4. hazard | 9. accumulated |
| 5. infertility | 10. alarming |

3. Comprehension check

- a. The answers given are only suggested, and students may correctly answer the questions in different ways. E.g., in item 1, they may say, 'Clorox produced 1.5 million packs a day' or similar.

Key:

- 1.5 million packs a day
- quaternary ammonium compounds (QACs or quats)
- because teachers and students were using disinfectant wipes regularly
- infertility, congenital disabilities, asthma, skin disorders
- through disinfectants
- 97%
- through the skin, the mouth, from the air
- children, the elderly, healthcare workers, cleaning professionals
- soap and water
- provide more clarity around the chemicals, more research on quats' health effects, better labelling and ending non-essential uses

4. Key language

- a. Students could be asked to do this exercise individually and then compare their answers in pairs. The modals used are in the article. As an extension activity, you could ask students to go back to the text, find them and categorise their use.

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Key:

modal verb	permission	possibility	suggestion	recommendation	obligation
can	✓	✓	✓		
may	✓	✓	✓		
might	✓	✓	✓		
should				✓	
must		✓			✓

- b. Students could be asked to do this exercise individually and then compare their answers in pairs. Let students know that, for some items, more than one modal verb is possible.

Key:

1. *must, should*
2. *can, may*
3. *might, may, must*
4. *should, can*
5. *can, may, might*

- c. Students could be asked to do this exercise individually and then compare their answers in pairs. Remind students to reference the chart to help them.

Key:

1. *obligation*
2. *possibility*
3. *possibility*
4. *recommendation, possibility*
5. *permission*

5. Discussion

- a. Students discuss the statements related to the article and give their reasons and justifications for each answer, referring to their own experiences wherever possible.

6. In your own words

- a. Students use an internet search engine to find more information about products that contain QACs or quats. Have them consider these questions: *What positive things do they say about their products? Is it clear that they may be harmful? What risks do they mention?* Encourage students to give reasons and cite personal examples.
- b. Students could then present their reports to the class. Encourage students to share the facts they've gathered and their opinions about the issue. As an extension activity, you could ask students to discuss if they might change their use of disinfectant products after reading this article.