Teacher's Key

The Scent of Attraction: What Science Says About Smell (Level C1)

Vocabulary Matching

1 olfactory = **N**
2 intertwined = **A**
3 limbic system = **H**
4 resonance = **L**
5 cited = **G**
6 major histocompatibility complex = **M**
7 evolutionary = **I**
8 compatibility = **E**
9 replicated = **D**
10 confound = **O**
11 pheromones = **J**
12 vestigial = **K**
13 evocative = **B**
14 encoded = **C**
15 self-efficacy = **F**

Fill in the Blank

1 olfactory
2 intertwined
3 limbic system
4 resonance
5 cited
6 evolutionary
7 compatibility
8 replicated
9 confound
10 pheromones
11 vestigial
12 evocative
13 encoded
14 self-efficacy

True or False

1 **True.** The reading says almost nobody mentions smell.
2 **True.** Smell takes a more direct route than most senses.
3 **True.** It was published in 1995.
4 **False.** They wore them for two nights.
5 **False.** The preference reversed in women taking the pill.
6 **True.** The writer describes the later evidence as mixed.
7 **False.** No compound has been rigorously shown to work as a human pheromone.
8 **False.** It appeared whether or not they believed it.
9 **True.** The range is about 58 to 73 billion dollars, depending on the source and what is counted.
10 **False.** It was one small experiment, and the result was linked to confidence, not to the scent itself.

Language Focus: Hedging Language

Example answer: Smell **may play a role** in attraction, though **how large that role is remains unclear**.

Comprehension Questions: Model Answers

1 Smell signals reach the limbic system (emotion and memory) without first passing through the thalamus, the relay station most senses use before the cortex.

2 Forty-four men wore cotton T-shirts for two nights and avoided scented products; 49 women rated how pleasant and sexy each shirt smelled. On average they preferred shirts from men whose MHC differed from their own, which suggests smell may signal immune-gene compatibility.

3 The preference reversed in women who were taking the contraceptive pill.

4 Later studies did not all replicate it, two meta-analyses found no reliable overall preference for MHC-dissimilar partners, diet and perfume can confound results, and the early participants were mostly university students.

5 The organ is still present in adults but appears to have lost its function. It survives only as a remnant of the pheromone-detecting organ found in other mammals.

6 Support: memories triggered by an odor were rated as more emotional than memories triggered by a picture or a word. Incomplete: results on how vivid odor-triggered memories are have been mixed, and the comparisons were with visual and verbal cues only.

7 Sleep was about two percent more efficient on nights with a partner's shirt than with a stranger's or a clean one, whether or not people believed they were smelling their partner. The effect is small and the study measured the effect but cannot explain its cause.

8 If the men's confidence, not the scent, explains the higher ratings, then perfume works by changing how the wearer feels and behaves (a belief that they can succeed socially) rather than through a chemical effect on other people.

9 Open answer. A strong answer notes that the reading builds a mechanism first, then tests the best-known claim, then weakens it, then moves to stronger evidence and to commerce, so the final cautious point rests on earlier evidence.

10 False. Some later studies replicated the pattern and others did not, and meta-analyses found no reliable overall preference.

11 No. The writer says no compound has been rigorously shown to work as a human pheromone, but adds that the question is not closed. That is different from saying they do not exist.

12 Best answer: to avoid overclaiming. The sentence admits the limits of a single small study. Accept a reasoned answer about tone, but the sentence does not attack the fragrance industry directly.

Notes on the Evidence

- The reading states some numbers and studies. Wedekind and colleagues (1995): 49 women and 44 men, all university students. Two later meta-analyses (Winternitz and colleagues, 2017, Molecular Ecology 26:668-688, and a more recent one) found no reliable overall preference for MHC-dissimilar partners in humans. Winternitz did report a significant preference for more MHC-diverse partners, which the reading leaves out for length.
- The sleep study (Hofer and Chen, 2020, Psychological Science) is reported in the University of British Columbia release as 155 participants. One outlet gave 115, so check the paper if the number matters.
- The deodorant experiment (Roberts and colleagues, 2009) was small. The reading reports it as suggestive only, as the writer does.
- Fragrance market size varies by source and by what is counted. The reading gives a range of about 58 to 73 billion US dollars for 2025.