A7 · Sensing the world: receptors, taste, smell, skin and body position · Worked examples and practice

Name: _____ Date: _____

Worked examples

Read these first. There is one for each kind of question in this lesson.

Example 1 · Name the receptor from the stimulus

Which kind of receptor detects the taste of lemon juice?

1. Lemon juice is a chemical dissolved in liquid.
2. A receptor that detects chemicals is a chemoreceptor.

Answer: A chemoreceptor (a taste receptor).

Example 2 · Explain sensory adaptation

A new wool sweater itches. After ten minutes you no longer notice it. Explain.

1. The stimulus has not changed: the wool still touches the skin.
2. The touch receptors become used to it, and their sensory neurons stop firing.

Answer: This is sensory adaptation.

Practice

Questions 1 to 4 are easy. Questions 5 to 8 are medium. Questions 9 and 10 are harder.

EASY

1. State what a sensory receptor does.

EASY

2. Name the kind of receptor that detects light.

EASY

3. Name the receptors for smell.

EASY

4. Name the receptors that tell the brain where your arms and legs are.

MEDIUM

5. Explain where a sensation happens, and what the receptor does.

MEDIUM

6. You get into a hot bath. After a few minutes it feels less hot, though the water has not cooled. Explain.

MEDIUM

7. Explain why food has less flavour when your nose is blocked.

MEDIUM

8. Name the kind of receptor that detects each stimulus: sound, and a hot stove.

HARDER

9. A pin touches a patient's foot. The patient feels nothing, but can move the foot normally. Predict two parts that could be damaged. Explain.

HARDER

10. With eyes closed, a person cannot touch a finger to their nose. The muscles work normally. Predict which receptors are not working. Explain.