

# Specialised Cells

Name:

Date:

**INQUIRY**

**A red blood cell, a nerve cell, and a root hair cell look completely different. Why?**

Discuss with your partner. Write your initial ideas below:

## Key Vocabulary

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Term	Definition
<b>Specialised cell</b>	A cell adapted for a specific function.
<b>Differentiation</b>	Process of a cell becoming specialised.

## Part A — Matching

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1. Match each cell to its adaptation: (a) red blood cell — no nucleus (b) nerve cell — long axon (c) root hair cell — large surface area (d) sperm cell — tail for swimming (e) palisade cell — many chloroplasts. Explain WHY each adaptation helps. [5 marks]

## Part B — Application

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2. Korean ginseng roots have many root hair cells. Explain how the structure of root hair cells helps the plant absorb water and minerals from the soil. [3 marks]

## Part C — Extension

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3. Stem cells can become ANY type of cell. Chinese and Korean scientists are leaders in stem cell research. Discuss ONE benefit and ONE ethical concern of stem cell research. [4 marks]