Red cells and clotting

Teacher / technician

YEAR 10 / LESSON 60 / BIOLOGY + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. Original learning tasks; no supplied numerical example represents class measurements.

Coverage and delivery

Shared Biology / Double Award: 2.59 and 2.61. Biology-only extension: 2.64B clotting.

Allow about 60 minutes. Follow the student sequence and use the answers to check reasoning.

Requisition • class of 30, working in 15 pairs

Item	Per pair / setup	Class total
Student booklets	1 per learner	30
Blood-cell diagrams / drawing paper / rulers	1 set per pair	15 sets; include fibrin diagram for Biology

Immediate safety

Paper, modelling and written reasoning only. No chemicals or biological samples are handled.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 60 / BIOLOGY + SCIENCE (DOUBLE AWARD)

1. Provide 30 booklets and 15 reference-diagram sets comparing mature human red cells in face and side views with white cells and platelets. Include a clearly labelled fibrin-mesh diagram for the Biology-only extension. Supply drawing paper and 15 rulers.

2. Keep answers separate until learners have attempted the tasks; discuss the reasons for corrections.

Close of lesson

• Return models and keep the corrected work.

Check before teaching

Check the cards, reference data and quantities against this requisition. Keep the staff answer guide separate until the checking stage. Supplied numerical practice datasets are labelled examples; they are not class measurements.

Answers and teaching notes

Expected explanations • do not give as experimental observations

YEAR 10 / LESSON 60 / BIOLOGY + SCIENCE (DOUBLE AWARD)

- It provides a high area relative to volume and a short diffusion path.
- It binds oxygen for transport.
- No.
- Yes; it allows loading and unloading.
- Fibrin.
- Reduced blood loss and a barrier limiting microorganism entry.

References and provenance

Pearson Biology specification

Prepared 22 November 2026. Original wording, tables and questions. Sources inform the concepts and technique; the lesson scope and classroom quantities are explicitly described here. No laboratory trial or final school risk approval is claimed.