Bile and absorption at villi

Teacher / technician

YEAR 10 / LESSON 54 / 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: 2.30–2.32. Bile and absorption.

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
Digestive-system and villus diagram sets	1 set per pair	15 sets, with unlabelled copies
Drawing paper / rulers	1 set per pair	15 sets

Immediate safety

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

Preparation and delivery

Read alongside the student method

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1. Provide 30 booklets and 15 pairs of reference diagrams showing the liver, gall bladder, bile duct and small intestine, plus an enlarged villus with capillaries and a lacteal. Supply 15 rulers and drawing-paper sets; keep an unlabelled copy for learners to annotate.

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

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- The liver.
- The gall bladder.
- No; it breaks large droplets into smaller droplets physically.
- They provide more surface area for enzyme action.
- Large area, thin epithelium and a good transport supply.
- A lymph vessel within a villus involved in transporting absorbed lipids.

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.