Science Insight 6

Teacher's Resource Book

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Introduction

Welcome to Science Insight 6: Teacher's Resource Book!

This Teacher's Resource Book serves as a guide to making science education an engaging and impactful experience for young learners. It is designed to complement the **Science Insight 6: Coursebook**, offering essential tools for effective teaching.

This **Science Insight 6: Teacher's Resource Book** contains all the essentials for delivering engaging science lessons. It includes lesson overviews that summarise each chapter, offering a clear structure for planning and reviewing lessons with ease. Detailed plans are included to achieve learning objectives and ensure that key scientific concepts are well understood by students. Answer keys for all coursebook exercises are also provided to save preparation time and maintain consistency in evaluations. These resources work together to support the delivery of meaningful and enjoyable science lessons.

We hope this Teacher's Resource Book becomes an essential companion throughout the teaching journey, offering the necessary support to create meaningful and enjoyable science lessons. Suggestions and constructive feedback are always welcome to help us improve and make this series even better for educators and students.

— The Publishers

Contents

1. Circulatory System

Overview of Lesson

In this chapter, students will learn about the human circulatory system and how it keeps the body alive and healthy. They will explore the main parts of the system—the heart, blood vessels, and blood—and understand how they work together to carry oxygen, nutrients, and waste around the body. The lesson includes how blood flows through the heart, lungs, and body, the difference between oxygenated and deoxygenated blood, and the roles of red and white blood cells and platelets. Students will also learn about common circulatory disorders, such as anaemia and leukaemia, and discover simple ways to maintain a healthy circulatory system through balanced eating, regular exercise, and good habits.

Plan for Achieving the Learning Objectives

Step 1. Begin the lesson by asking students what they already know about the circulatory system. Use questions like: "What does the heart do?" or "Where does our blood go?" to activate prior knowledge.

Step 2. Show a model or diagram of the human body. Ask students to locate the heart and major blood vessels (arteries and veins). Let them feel their pulse to make the concept personal and engaging.

Step 3. Use a simple animation or drawing to explain how the heart pumps blood. Introduce the idea of two types of blood flow—pulmonary and systemic circulation—using arrows or colour-coded paths.

Step 4. Describe the difference between oxygenated and deoxygenated blood. Use red and blue yarn or paper strips to represent the two blood types in a class demonstration.

Step 5. Introduce the components of blood—red blood cells, white blood cells, platelets, and plasma. Use coloured beads or layered liquid models to visualise how blood is made up of different parts.

Step 6. Ask students to match blood components with their functions (e.g. red blood cells carry oxygen). Use a card game or interactive matching activity for better retention.

Step 7. Discuss common circulatory disorders, such as anaemia or clogged arteries, in simple terms. Emphasise how lifestyle habits can affect heart and blood health.

Step 8. Talk about ways to keep the circulatory system healthy. Encourage students to name foods rich in iron, suggest physical activities, and explain the importance of drinking water and getting enough sleep.

Step 9. End the lesson with a fun recap activity like a short quiz, a role-play (e.g. "Be the Blood Cell"), or group discussion reflecting on why the circulatory system is vital to our life.

Answers to Exercises in Coursebook

Remember and Recall (Page 9)

1. ✗ 2. ✓ 3. ✗ 4. ✓ 5. ✓

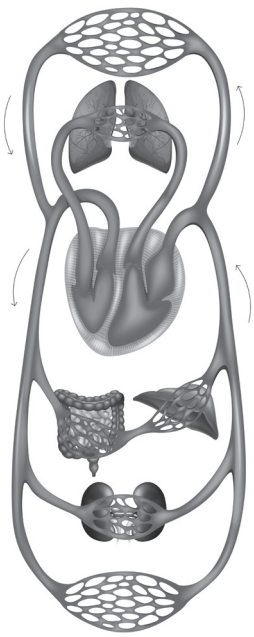
Assess Yourself

A.
1. a 3. a 5. c 7. a 9. d
2. c 4. d 6. b 8. d 10. b

B.
1. thrombocytes 3. the heart 5. fat
2. discs 4. stroke

C.
1. 7 3. 6 5. 6-5-4
2. 1 4. 2-1-7

Note to teacher: Please review the image used in the question — the direction of the arrow appears to be incorrect and may confuse students when identifying the correct answer. Kindly replace or adjust the image to match the intended concept, as shown in the corrected version below.



D. 1. Because the ventricles have to pump blood with more force.
- The right ventricle pumps blood to the lungs, and the left ventricle pumps blood to the entire body.
- This requires stronger muscles than the atria, which only pump blood into the ventricles.

2. Evan's lifestyle may lead to poor circulatory health. Eating too much fried food can cause fat to build up in his blood vessels, which may lead to blockages. Not eating enough fruits and vegetables means he might not get enough vitamins and iron, which are important for healthy blood. If he rarely exercises, his heart can become weaker, and his blood may not circulate properly. Over time, these habits can increase his risk of heart disease and high blood pressure.

Life Skills and Subject Integration

E. 1. Exercise regularly.
2. Avoid unhealthy and fatty foods.
3. Get enough sleep and rest.

2. Skeletal System

Overview of Lesson

This chapter introduces students to the structure and function of the human skeletal system. It begins by helping students identify the major bones in the body and understand how the skeleton gives shape and support. The lesson then explores how the skeletal system protects internal organs and works with muscles and joints to allow movement. Through simple diagrams, real-life examples, and class activities, pupils learn how different types of joints work (such as ball-and-socket and hinge joints) and how bones are connected to muscles. The chapter also encourages students to think about how to care for their bones by eating healthily, exercising, and practising safety during physical activities. By the end of the lesson, students will appreciate the importance of the skeletal system in daily life and understand how bones, joints, muscles, and the nervous system work together to help the body move and stay strong.

Plan for Achieving the Learning Objectives

Step 1. Begin the lesson by asking students what they already know about the skeletal system. Use questions like: "Why do we have bones?" or "What do you think your skeleton does for you?" to activate prior knowledge.

Step 2. Show a model or diagram of the human skeleton. Let students identify and name key bones such as the skull, ribcage, spine, arms, and legs.

Step 3. Use a labelled chart or interactive video to explain the main functions of the skeletal system: support, protection, movement, blood cell production, and storage of minerals.