

# EXPLORING SCIENCE

INTERNATIONAL 11-14

## What's included in the Student Books?



## Biology

### 7A Cells, tissues, organs and systems

- 7Aa Doctors past and present
- 7Aa Life processes
- 7Ab Organs
- 7Ab Medical doctors **S**
- 7Ac Tissues
- 7Ac Microscopes **WS**
- 7Ad Cells
- 7Ae Organ systems
- 7Ae Transplants

### 7B Sexual reproduction in animals

- 7Ba Escaped zoo animals
- 7Ba The scientific method **WS**
- 7Ba Animal sexual reproduction
- 7Bb Reproductive organs
- 7Bc Becoming pregnant
- 7Bd Gestation and birth
- 7Bd Saving endangered species **S**
- 7Be Growing up
- 7Be The work of zoos

### 7C Muscles and bones

- 7Ca Fitness
- 7Ca Muscles and breathing
- 7Cb Muscles and blood
- 7Cb Scientific questions **WS**
- 7Cc The skeleton
- 7Cd Muscles and moving
- 7Cd Artificial limbs **S**
- 7Ce Drugs
- 7Ce Drugs and sport

### 7D Ecosystems

- 7Da Exploring the world
- 7Da Variation
- 7Da Charts and graphs **WS**
- 7Db Adaptations
- 7Dc Effects of the environment
- 7Dd Effects on the environment
- 7Dd Building greener cities **S**
- 7De Transfers in food chains
- 7De Nomads

## Chemistry

### 7E Mixtures and separation

- 7Ea Mixtures and separation
- 7Ea The work of a forensic scientist **S**
- 7Ea Mixtures
- 7Eb Solutions
- 7Ec Safety when heating **WS**
- 7Ec Evaporation
- 7Ed Chromatography
- 7Ee Distillation
- 7Ee Safe drinking water

### 7F Acids and alkalis

- 7Fa Chemistry in the home
- 7Fa Hazards
- 7Fa Controlling risk **WS**
- 7Fb Indicators
- 7Fc Acidity and alkalinity
- 7Fd Neutralisation
- 7Fd The chemical industry **S**
- 7Fe Neutralisation in daily life
- 7Fe Danger at home

### 7G The particle model

- 7Ga Sorting rubbish
- 7Ga Solids, liquids and gases
- 7Gb Hypotheses and theories **WS**
- 7Gb Particles
- 7Gc Brownian motion
- 7Gd Diffusion
- 7Ge Air pressure
- 7Ge Forecasting the weather **S**
- 7Ge Waste

### 7H Atoms, elements and molecules

- 7Ha Our material world
- 7Ha Sorting resource data **WS**
- 7Ha The air we breathe
- 7Hb Earth's elements
- 7Hc Metals and non-metals
- 7Hc Obtaining metals **S**
- 7Hd Making compounds
- 7He Chemical reactions
- 7He Problems with elements

## Physics

### 7I Energy

- 7Ia Energy and changes
- 7Ia Energy from food
- 7Ia Fair comparisons and ratios **WS**
- 7Ib Energy transfers and stores
- 7Ic Fuels
- 7Ic Transporting goods **S**
- 7Id Other energy resources
- 7Ie Using resources
- 7Ie Making changes

### 7J Current electricity

- 7Ja Discovering electricity
- 7Ja Switches and current
- 7Jb Models in science **WS**
- 7Jb Models for circuits
- 7Jc Series and parallel circuits
- 7Jd Changing the current
- 7Jd Building robots **S**
- 7Je Using electricity
- 7Je A world without electricity

### 7K Forces

- 7Ka Forces
- 7Ka Different forces
- 7Kb Springs
- 7Kc Friction
- 7Kd Pressure
- 7Kd SI units **WS**
- 7Ke **Balanced and unbalanced**
- 7Ke Designing structures
- 7Ke Safety standards

### 7L Sound

- 7La Animal sounds
- 7La Making sounds
- 7Lb Moving sounds
- 7Lb Line graphs and scatter graphs **WS**
- 7Lc Detecting sounds
- 7Ld Using sound
- 7Ld Working with sound **S**
- 7Le Comparing waves
- 7Le Animals and noise



## Biology

### 8A Food and nutrition

- 8Aa Food and advertising
- 8Aa Nutrients
- 8Ab Uses of nutrients
- 8Ac Balanced diets
- 8Ac Making new foods **S**
- 8Ad Digestion
- 8Ae Surface area **WS**
- 8Ae Absorption
- 8Ae Packaging and the law

### 8B Plants and their reproduction

- 8Ba Useful plants
- 8Ba Classification and biodiversity
- 8Ba Accuracy and estimates **WS**
- 8Bb Types of reproduction
- 8Bc Pollination
- 8Bc Air quality **S**
- 8Bd Fertilisation and dispersal
- 8Be Germination and growth
- 8Be Animals using plants

### 8C Breathing and respiration

- 8Ca Water sports and breathing
- 8Ca Aerobic respiration
- 8Cb Gas exchange system
- 8Cb Means and ranges **WS**
- 8Cc Getting oxygen
- 8Cc Epidemiology **S**
- 8Cd Comparing gas exchange
- 8Ce Anaerobic respiration
- 8Ce Fitness training

### 8D Unicellular organisms

- 8Da The Black Death
- 8Da Unicellular or multicellular
- 8Da Tackling diseases **S**
- 8Db Microscopic fungi
- 8Dc Bacteria
- 8Dc Pie charts **WS**
- 8Dd Protoctists
- 8De Decomposers and carbon
- 8De Black Death hypotheses

## Chemistry

### 8E Combustion

- 8Ea Engines
- 8Ea Burning fuels
- 8Eb Oxidation
- 8Ec Fire safety
- 8Ec Fair testing **WS**
- 8Ed Air pollution
- 8Ee Global warming
- 8Ee Carbon footprint **S**
- 8Ee Reducing pollution

### 8F The periodic table

- 8Fa Fireworks
- 8Fa Dalton's atomic model
- 8Fb Chemical properties
- 8Fc Mendeleev's table
- 8Fc Anomalous results **WS**
- 8Fd Physical trends
- 8Fd Inspiring teachers **S**
- 8Fe Chemical trends
- 8Fe Firework ban

### 8G Metals and their uses

- 8Ga Building up
- 8Ga Metal properties
- 8Gb Corrosion
- 8Gc Metals and water
- 8Gd Quality evidence **WS**
- 8Gd Metals and acids
- 8Ge Pure metals and alloys
- 8Ge New alloys **S**
- 8Ge Metals in art

### 8H Rocks

- 8Ha Disaster!
- 8Ha Rocks and their uses
- 8Hb Igneous and metamorphic
- 8Hb Predicting eruptions **S**
- 8Hc Weathering and erosion
- 8Hd Sedimentary rocks
- 8Hd Theories in geology **WS**
- 8He Materials in the Earth
- 8He Living in danger

## Physics

### 8I Fluids

- 8Ia Exploring extremes
- 8Ia The particle model
- 8Ia Calculations with density **WS**
- 8Ib Changing state
- 8Ic Pressure in fluids
- 8Id Floating and sinking
- 8Ie Drag
- 8Ie Operating aeroplanes **S**
- 8Ie Humans at the extremes

### 8J Light

- 8Ja Seeing things
- 8Ja Light on the move
- 8Jb Drawings and conventions **WS**
- 8Jb Reflection
- 8Jc Refraction
- 8Jd Cameras and eyes
- 8Jd Looking after our eyes **S**
- 8Je Colour
- 8Je Invisibility cloaks

### 8K Energy transfers

- 8Ka Living in extremes
- 8Ka Temperature changes
- 8Kb Transferring energy
- 8Kc Controlling transfers
- 8Kc Accuracy and precision **WS**
- 8Kd Power and efficiency
- 8Kd Managing disasters
- 8Ke Paying for energy
- 8Ke Keeping warm

### 8L Earth and space

- 8La Changing ideas
- 8La Gathering the evidence
- 8La Working in space **S**
- 8Lb Seasons
- 8Lc Magnetic Earth
- 8Ld Gravity in space
- 8Ld Making comparisons **WS**
- 8Le Beyond the Solar System
- 8Le Studying space





## Biology

### 9A Genetics and evolution

- 9Aa Monsters and myth
- 9Aa Environmental variation
- 9Ab Inherited variation
- 9Ab Probability **WS**
- 9Ac DNA
- 9Ac STEM spread Genetic counsellor
- 9Ad Genes and extinction
- 9Ae Natural selection
- 9Ae Recreating animals

### 9B Plant growth

- 9Ba On a farm
- 9Ba Reactions in plants
- 9Bb Plant adaptations
- 9Bc Plant products
- 9Bd Growing crops
- 9Bd STEM spread Ecologist
- 9Be Farming problems
- 9Be Bias and validity **WS**
- 9Be Organic farming

### 9C Biology transition to further study

- 9Ca **Threat** from disease
- 9Ca Diseases
- 9Ca STEM spread Vet
- 9Cb Control systems
- 9Cc Testing medicines
- 9Cc Median and quartiles **WS**
- 9Cd Ecology 62
- 9Ce In and out 64
- 9Ce Combatting pandemics 66

### 9D1 Animal smuggling

- 9D2 Enzyme investigation
- 9D3 Teeth

## Chemistry

### 9E Making materials

- 9Ea Materials of the future
- 9Ea About ceramics
- 9Eb Polymers
- 9Eb Peer review **WS**
- 9Ec Composite materials
- 9Ec STEM spread Car designer
- 9Ed Problems with materials
- 9Ee Recycling materials
- 9Ee Material failures

### 9F Reactivity

- 9Fa Demolition
- 9Fa Types of explosion
- 9Fb Reactivity
- 9Fc Energy and reactions
- 9Fc Percentage loss or gain **WS**
- 9Fd Displacement
- 9Fe Extracting metals
- 9Fe STEM spread Materials manager
- 9Fe Alfred Nobel

### 9G Chemistry transition to further study

- 9Ga Art and chemistry
- 9Ga Ions
- 9Ga STEM spread Climatologist
- 9Gb Energy transfers
- 9Gc Rates of reaction
- 9Gd Chemical equations
- 9Gd Standard form **WS**
- 9Ge Equilibria
- 9Ge Frescos

### 9H Chemistry revision and projects

- 9H1 Project 1: Carbon capture
- 9H2 Project 2: Electrolysis investigation
- 9H3 Project 3: Nanoparticles

## Physics

### 9I Forces and motion

- 9Ia Moving things
- 9Ia Forces and movement
- 9Ia Energy for movement
- 9Ib STEM spread Ship operator
- 9Ic Speed
- 9Ic Equations and graphs **WS**
- 9Id Turning forces
- 9Ie More machines
- 9Ie Supplying the energy

### 9J Force fields and electromagnets

- 9Ja Mission to Mars
- 9Ja Force fields
- 9Jb Static electricity
- 9Jc Current electricity
- 9Jc STEM spread Electrical engineer
- 9Jd Resistance
- 9Jd Rounding numbers **WS**
- 9Je Electromagnets
- 9Je Humans in space

### 9K Physics transition to further study

- 9Ka Physicists
- 9Ka Differences
- 9Kb Fields
- 9Kc Cause and effect
- 9Kd Links between variables
- 9Kd Information from graphs **WS**
- 9Ke Models
- 9Ke STEM spread Games developer
- 9Ke Physics research

### 9L Physics revision and projects

- 9L1 Project 1: Ears and eyes
- 9L2 Project 2: Going faster
- 9L3 Project 3: Speed limits

