

NATURAL SCIENCE 1



Contents

<p>Meet our scientists Page 4</p>	<ul style="list-style-type: none"> • Introduction to the course characters 	
<p>1 What parts has our body got? <i>Parts of the body</i> Page 6</p>	<ul style="list-style-type: none"> • Bones, joints and muscles • Parts of the body • Main parts of the body 	<ul style="list-style-type: none"> • Parts of the face • Senses
<p>2 How can we be healthy? <i>Healthy habits</i> Page 18</p>	<ul style="list-style-type: none"> • Food groups • Five a day 	<ul style="list-style-type: none"> • Sport • Healthy habits
<p>3 What animals are there? <i>Animals</i> Page 32</p>	<ul style="list-style-type: none"> • Vertebrates and invertebrates • How animals move • Animal groups 	<ul style="list-style-type: none"> • Wild and domestic animals • Habitats
<p>4 What are living and non-living things? <i>Living and non-living things</i> Page 44</p>	<ul style="list-style-type: none"> • The circle of life: plants, animals and people are living things 	<ul style="list-style-type: none"> • What living things need • Non-living things
<p>5 Who are we? <i>Identity, feelings and working together</i> Page 58</p>	<ul style="list-style-type: none"> • Good and bad choices • Behaviour at school and at home 	<ul style="list-style-type: none"> • Helping at home
<p>6 What's a mixture? <i>Mixtures and pure substances</i> Page 70</p>	<ul style="list-style-type: none"> • Mixtures and pure substances • The internet 	<ul style="list-style-type: none"> • Parts of a computer

Our Project 1:
Sleep well! pp 30–31

Our Project 2:
Help a pet! pp 56–57

Our Project 3:
What we need pp 82–83

Hands on

Mindful time

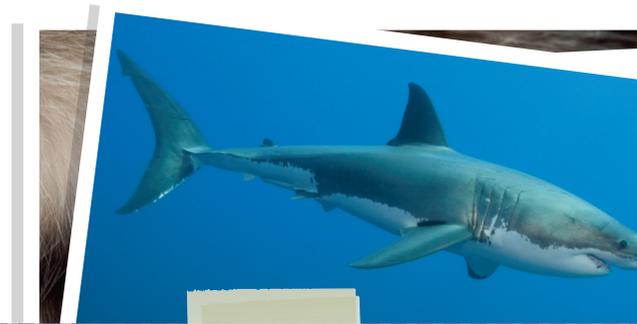
Documentaries

<ul style="list-style-type: none">• Build a skeleton.• Make a Body mini-book.• Make a potion.	<ul style="list-style-type: none">• Belly breathing	<ul style="list-style-type: none">• Incredible bodies
<ul style="list-style-type: none">• Keep a food diary.• Find out why we need to brush our teeth.	<ul style="list-style-type: none">• Contract and relax your body parts	<ul style="list-style-type: none">• In the supermarket
<ul style="list-style-type: none">• Make an animal habitat.• Find out what birds eat.	<ul style="list-style-type: none">• Sounds of nature	<ul style="list-style-type: none">• Animal trip
<ul style="list-style-type: none">• Make a crazy garden.• Make an animal poster.• The time of my life!	<ul style="list-style-type: none">• Sensations	<ul style="list-style-type: none">• Living and non-living things
<ul style="list-style-type: none">• Make a postbox for positive messages.• Do a survey to find out what chores your classmates do.	<ul style="list-style-type: none">• Mirrors	<ul style="list-style-type: none">• Good choices
<ul style="list-style-type: none">• Play a game.• Separate a mixture.• Use the internet for research.• Make a video.	<ul style="list-style-type: none">• Nice smells	<ul style="list-style-type: none">• Into the mix

Let's
review ...

Page 84

NATURAL SCIENCE 2



Contents

<p>Here we go again! Page 4</p>	<ul style="list-style-type: none"> • Introduction to the course characters 	
<p>1 How do our bodies work? Vital functions of human beings Page 6</p>	<ul style="list-style-type: none"> • Senses • Digestive system 	<ul style="list-style-type: none"> • Respiratory system • Stages of life
<p>2 What kinds of animals are there? Animals Page 18</p>	<ul style="list-style-type: none"> • Mammals • Birds • Fish • Reptiles 	<ul style="list-style-type: none"> • Amphibians • Arthropods • Molluscs
<p>3 What kinds of plants are there? Plants Page 32</p>	<ul style="list-style-type: none"> • Trees, bushes and grasses • Wild and cultivated plants • Deciduous and evergreen plants 	<ul style="list-style-type: none"> • Flowering plants • Non-flowering plants: mosses and ferns
<p>4 What types of materials are there? Materials Page 44</p>	<ul style="list-style-type: none"> • Natural and non-natural materials • Properties of materials 	<ul style="list-style-type: none"> • House materials • Eco-homes
<p>5 How can machines help us? Machines Page 58</p>	<ul style="list-style-type: none"> • Simple and complex machines 	<ul style="list-style-type: none"> • Types of energy used by machines • Inventions
<p>6 What are light and sound? Light and sound energy Page 70</p>	<ul style="list-style-type: none"> • Light • Sound • Internet safety 	<ul style="list-style-type: none"> • Programming

Our Project 1:
How do animals adapt?
pp 30–31

Our Project 2:
Reducing my carbon
footprint pp 56–57

Our Project 3:
Inventions pp 82–83



Hands on

Mindful time

Documentaries

<ul style="list-style-type: none"> • Learn about taste. • Make a stomach. 	<ul style="list-style-type: none"> • How much air can you breathe out? • Make a funny family book. 	<ul style="list-style-type: none"> • Listen to the gong. 	<ul style="list-style-type: none"> • Our senses
<ul style="list-style-type: none"> • Discover more mammals. • Make a hanging mobile. 	<ul style="list-style-type: none"> • Make animal riddles. • Make animals. • Present an animal. 	<ul style="list-style-type: none"> • Be a butterfly. 	<ul style="list-style-type: none"> • Amazing mammals!
<ul style="list-style-type: none"> • Make a plant mural. • Make a deciduous tree. 	<ul style="list-style-type: none"> • Make a flap poster for the life cycle of a seed. • Make a class fern. 	<ul style="list-style-type: none"> • We are sunflowers. 	<ul style="list-style-type: none"> • Forever green
<ul style="list-style-type: none"> • Make a materials display. • Build a house. 	<ul style="list-style-type: none"> • Learn more about eco-homes. • Make a reusable bag. 	<ul style="list-style-type: none"> • Make different forms. 	<ul style="list-style-type: none"> • What is it made of?
<ul style="list-style-type: none"> • Have a race. • Play a matching game. 	<ul style="list-style-type: none"> • Invent a robot. • Discover scientific instruments. 	<ul style="list-style-type: none"> • Try robot massage. 	<ul style="list-style-type: none"> • Round and round
<ul style="list-style-type: none"> • Make a sounds poster. • Make a natural light mini-book. 	<ul style="list-style-type: none"> • Give a presentation. • Play a game about chores. 	<ul style="list-style-type: none"> • Hear the sounds. 	<ul style="list-style-type: none"> • Lights, sound, action!

Let's review ...



Page 84



NATURAL SCIENCE 3



Contents

<p>Welcome Page 4</p>		
<p>1 How do we interact with the world? Page 6</p>	<ul style="list-style-type: none"> • Nervous system • Locomotor system • Sense of hearing 	<ul style="list-style-type: none"> • Sense of sight • Senses of smell and taste • Sense of touch
<p>2 How can we classify animals? Page 18</p>	<ul style="list-style-type: none"> • Mammals • Birds • Reptiles 	<ul style="list-style-type: none"> • Fish • Amphibians • Invertebrates
<p>3 What types of living things are plants? Page 32</p>	<ul style="list-style-type: none"> • Plant reproduction: flowering and non-flowering plants • Sexual and asexual reproduction 	<ul style="list-style-type: none"> • Photosynthesis and respiration • Photosynthesis and life on Earth
<p>4 How are living things connected to each other? Page 44</p>	<ul style="list-style-type: none"> • The kingdoms of nature • Fungi • Protists • Monera 	<ul style="list-style-type: none"> • Ecosystems • Human effects on ecosystems • Searching the internet
<p>5 What forms can energy and matter have? Page 58</p>	<ul style="list-style-type: none"> • Matter: changes of state • Thermal energy • The sun as a sustainable energy source 	<ul style="list-style-type: none"> • Materials: conductors and insulators • Mixtures
<p>6 What different types of machines are there? Page 70</p>	<ul style="list-style-type: none"> • Simple machines: inclined plane, screw, pulley, wheel and axle, lever and wedge 	<ul style="list-style-type: none"> • Inventions: steam engine and telegraph

Our Project 1:
Changing for the better
pp 30–31

Our Project 2:
What is your ecosystem?
pp 56–57

Our Project 3:
Famous women from
history pp 82–83



Hands on

Documentaries

<ul style="list-style-type: none"> • Build a pinhole camera. 	<ul style="list-style-type: none"> • Helping the senses
<ul style="list-style-type: none"> • Find out why animals use camouflage. 	<ul style="list-style-type: none"> • Marine invertebrates
<ul style="list-style-type: none"> • Germinate a seed. 	<ul style="list-style-type: none"> • Plant reproduction
<ul style="list-style-type: none"> • Make a birdfeeder and observe its effect on an ecosystem. 	<ul style="list-style-type: none"> • Kingdoms and ecosystems
<ul style="list-style-type: none"> • Observe the effect of thermal energy on liquids. 	<ul style="list-style-type: none"> • Energy and matter
<ul style="list-style-type: none"> • Communicate using Morse code. 	<ul style="list-style-type: none"> • Incredible inventions

**Questions
and Study aids**



Page 84

NATURAL SCIENCE 4



Contents

<p>Welcome Page 4</p>		
<p>1 How do our bodies work? Page 6</p>	<ul style="list-style-type: none"> • Digestive system • Respiratory system • Circulatory system 	<ul style="list-style-type: none"> • Excretory system • Reproductive systems
<p>2 How can we keep ourselves healthy? Page 18</p>	<ul style="list-style-type: none"> • Healthy diet and exercise • Personal hygiene and regular check-ups • Sleep and rest 	<ul style="list-style-type: none"> • Unhealthy habits • Dangers of tobacco and alcohol
<p>3 What's on the Earth's surface? Page 32</p>	<ul style="list-style-type: none"> • Landforms • Mountains, hills, plateaus, valleys, plains • Islands, archipelagos, peninsulas 	<ul style="list-style-type: none"> • Deserts • Sedimentary, igneous and metamorphic rocks
<p>4 What are materials and forces? Page 44</p>	<ul style="list-style-type: none"> • States of matter • Raw and man-made materials 	<ul style="list-style-type: none"> • Properties of materials • Contact and non-contact forces
<p>5 How does technology change over time? Page 58</p>	<ul style="list-style-type: none"> • Inventions and discoveries • Historical periods and technology 	<ul style="list-style-type: none"> • Development of the car • Benefits and disadvantages of technology
<p>6 How do computers make our world work? Page 70</p>	<ul style="list-style-type: none"> • Binary code and programming • Robotics • Finding reliable information on the internet 	<ul style="list-style-type: none"> • Healthy use of the internet • Online safety • Internet manners

Our Project 1:
Why am I feeling this way? pp 30–31

Our Project 2:
Transforming matter pp 56–57

Our Project 3:
Staying safe on the internet pp 82–83



Hands on

Documentaries

<ul style="list-style-type: none">• Build a model diaphragm, chest and lungs.	<ul style="list-style-type: none">• Respiration and circulation
<ul style="list-style-type: none">• Model how alcohol impairs vision and balance.	<ul style="list-style-type: none">• Healthy and unhealthy habits
<ul style="list-style-type: none">• Map Spain's landforms.	<ul style="list-style-type: none">• Types of rocks
<ul style="list-style-type: none">• Observe the force of inertia.	<ul style="list-style-type: none">• Forces
<ul style="list-style-type: none">• Collect fingerprints and compare them.	<ul style="list-style-type: none">• Inventions that changed the world
<ul style="list-style-type: none">• Perform an efficient and accurate internet search.	<ul style="list-style-type: none">• How did the internet start?

**Questions
and Study aids**



Page 84



NATURAL SCIENCE 5



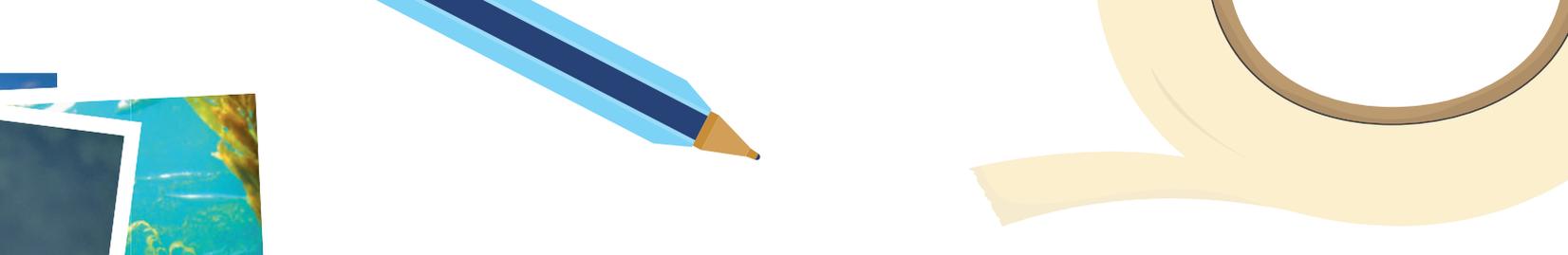
Contents

<p>Welcome Page 4</p>		
<p>1 What does it mean to be a living thing? Page 6</p>	<ul style="list-style-type: none"> • Animal and plant cells • Cells, tissues, organs, organ systems • The five kingdoms 	<ul style="list-style-type: none"> • Dichotomous keys • Weird and wonderful organisms
<p>2 What can we measure and show in ecosystems? Page 18</p>	<ul style="list-style-type: none"> • Food chains • Food webs • Threats to biodiversity 	<ul style="list-style-type: none"> • Protecting species
<p>3 What is geology? Page 32</p>	<ul style="list-style-type: none"> • The four layers of the geosphere • Relief formation 	<ul style="list-style-type: none"> • Classifying rocks • Classifying minerals
<p>4 What are the best ways to harness energy? Page 44</p>	<ul style="list-style-type: none"> • Different forms of energy • Energy transformations 	<ul style="list-style-type: none"> • Renewable energy sources • Non-renewable energy sources
<p>5 How do light, sound and heat energy behave differently? Page 58</p>	<ul style="list-style-type: none"> • Properties of sound • Light sources and properties of light 	<ul style="list-style-type: none"> • Reflection • Refraction • Properties of heat
<p>6 How does electricity affect us? Page 70</p>	<ul style="list-style-type: none"> • Electrical charges • Static electricity • Current electricity • Edison and the lightbulb 	<ul style="list-style-type: none"> • Famous inventors and inventions • Cybernetics and robotics

Our Project 1:
Doing better research
pp 30–31

Our Project 2:
Digital etiquette
pp 56–57

Our Project 3:
Try, try again
pp 82–83



Hands on

Documentaries

<ul style="list-style-type: none">• Discover why plants have a cell wall.	<ul style="list-style-type: none">• Living or non-living?
<ul style="list-style-type: none">• Find out the best way to clean up an oil spill.	<ul style="list-style-type: none">• Cooperation is key
<ul style="list-style-type: none">• Make a model of the geosphere.	<ul style="list-style-type: none">• Mining for rocks
<ul style="list-style-type: none">• Discover how important light is for plants.	<ul style="list-style-type: none">• Shine on sunny sun
<ul style="list-style-type: none">• Investigate how sound travels.	<ul style="list-style-type: none">• Hear energy, see energy, feel energy
<ul style="list-style-type: none">• Find out what happens when you change components in an electrical circuit.	<ul style="list-style-type: none">• Electricity everywhere

**Questions
and Study aids**



Page 84

NATURAL SCIENCE 6



Contents

Welcome	Page 4		
1 How do we interact with the world?	Page 6	<ul style="list-style-type: none"> • Sense organs • Nervous system • Musculoskeletal system • Reflexes 	
2 What are we made of?	Page 18	<ul style="list-style-type: none"> • Stages of nutrition • Food groups and nutrients • Digestive system • Circulatory system 	<ul style="list-style-type: none"> • Respiratory and excretory systems • First aid techniques
3 How does the life cycle continue?	Page 34	<ul style="list-style-type: none"> • Human life cycle • Male reproductive system • Female reproductive system • Stages of reproduction 	<ul style="list-style-type: none"> • Sexuality and emotions during puberty
4 How does our lifestyle affect our health?	Page 48	<ul style="list-style-type: none"> • Benefits of exercise • Emotional and social health • Harmful behaviours • Healthy sleep habits 	<ul style="list-style-type: none"> • Digital health
5 What is a mixture?	Page 60	<ul style="list-style-type: none"> • Mixtures and states of matter • Homogeneous and heterogeneous mixtures 	<ul style="list-style-type: none"> • Magnetic separation • Filtration • Evaporation and distillation
6 How do machines move?	Page 72	<ul style="list-style-type: none"> • Measuring mass, volume and capacity • Density and buoyancy 	<ul style="list-style-type: none"> • Forces of flight • Friction and movement

Our Project 1:
Solving problems like a computer pp 32–33

Our Project 2:
Using the internet safely pp 58–59

Our Project 3:
Testing prototypes pp 82–83

Hands on

Documentaries

- Investigate how the brain can affect our reflexes.

- Sensing our world

- Find out how bacteria are spread.

- Working together: look what your body can do

- Discover how to extract genetic material from cells.

- Changes over time

- Discover how to analyse data using different charts.

- Health is life

- Investigate how chromatography works.

- Messy and not so messy mixtures

- Discover the relationships between mass, volume and density.

- Machines on the move

**Questions
and Study aids**

Page 84