

NATURAL SCIENCE 1



Contents

Meet our scientists

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1 What parts has our body got?

Parts of the body

Page 6

2 How can we be healthy?

Healthy habits

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3 What animals are there?

Animals

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4 What are living and non-living things?

Living and non-living things

Page 44

5 Who are we?

Identity, feelings and working together

Page 58

6 What's a mixture?

Mixtures and pure substances

Page 70

- Introduction to the course characters

- Bones, joints and muscles
- Parts of the body
- Main parts of the body
- Parts of the face
- Senses

- Food groups
- Five a day
- Sport
- Healthy habits

- Vertebrates and invertebrates
- How animals move
- Animal groups
- Wild and domestic animals
- Habitats

- The circle of life: plants, animals and people are living things
- What living things need
- Non-living things

- Good and bad choices
- Behaviour at school and at home
- Helping at home

- Mixtures and pure substances
- The internet
- 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 ...

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NATURAL SCIENCE 2



Contents

Here we go again!

Page 4

1 How do our bodies work?

Vital functions of human beings

Page 6

2 What kinds of animals are there?

Animals

Page 18

3 What kinds of plants are there?

Plants

Page 32

4 What types of materials are there?

Materials

Page 44

5 How can machines help us?

Machines

Page 58

6 What are light and sound?

Light and sound energy

Page 70

- Introduction to the course characters

- Senses

- Digestive system

- Respiratory system

- Stages of life

- Mammals

- Birds

- Fish

- Reptiles

- Amphibians

- Arthropods

- Molluscs

- Trees, bushes and grasses

- Wild and cultivated plants

- Deciduous and evergreen plants

- Flowering plants

- Non-flowering plants: mosses and ferns

- Natural and non-natural materials

- Properties of materials

- House materials

- Eco-homes

- Simple and complex machines

- Types of energy used by machines

- Inventions

- Light

- Sound

- Internet safety

- 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 ...

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NATURAL SCIENCE 3



Contents

Welcome

Page 4

1 How do we interact with the world?

Page 6

- Nervous system
- Locomotor system
- Sense of hearing
- Sense of sight
- Senses of smell and taste
- Sense of touch

2 How can we classify animals?

Page 18

- Mammals
- Birds
- Reptiles
- Fish
- Amphibians
- Invertebrates

3 What types of living things are plants?

Page 32

- Plant reproduction: flowering and non-flowering plants
- Sexual and asexual reproduction
- Photosynthesis and respiration
- Photosynthesis and life on Earth

4 How are living things connected to each other?

Page 44

- The kingdoms of nature
- Fungi
- Protists
- Monera
- Ecosystems
- Human effects on ecosystems
- Searching the internet

5 What forms can energy and matter have?

Page 58

- Matter: changes of state
- Thermal energy
- The sun as a sustainable energy source
- Materials: conductors and insulators
- Mixtures

6 What different types of machines are there?

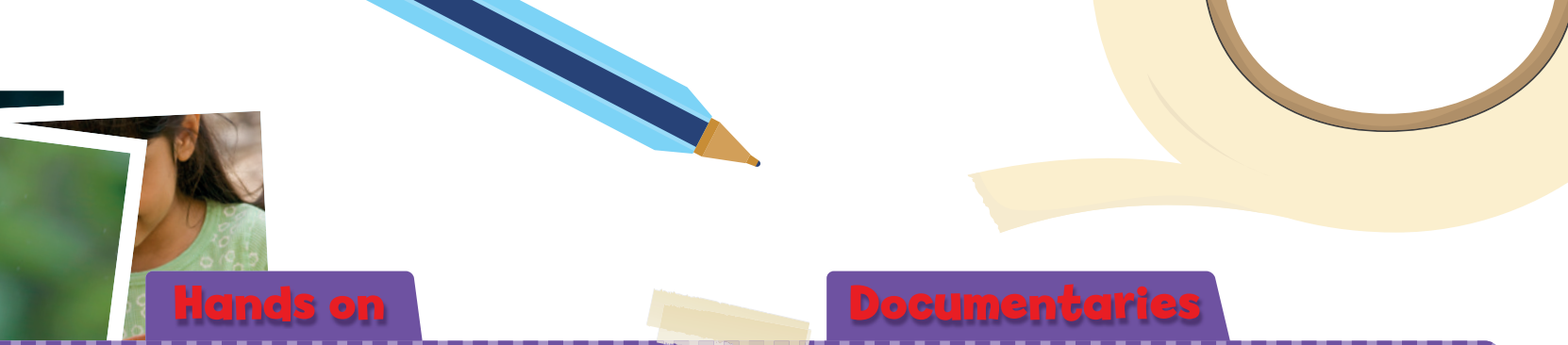
Page 70

- Simple machines: inclined plane, screw, pulley, wheel and axle, lever and wedge
- 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**



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NATURAL SCIENCE 4



Contents

Welcome

Page 4

1 How do our bodies work?

Page 6

- Digestive system
- Respiratory system
- Circulatory system

- Excretory system
- Reproductive systems

2 How can we keep ourselves healthy?

Page 18

- Healthy diet and exercise
- Personal hygiene and regular check-ups
- Sleep and rest

- Unhealthy habits
- Dangers of tobacco and alcohol

3 What's on the Earth's surface?

Page 32

- Landforms
- Mountains, hills, plateaus, valleys, plains
- Islands, archipelagos, peninsulas

- Deserts
- Sedimentary, igneous and metamorphic rocks

4 What are materials and forces?

Page 44

- States of matter
- Raw and man-made materials

- Properties of materials
- Contact and non-contact forces

5 How does technology change over time?

Page 58

- Inventions and discoveries
- Historical periods and technology

- Development of the car
- Benefits and disadvantages of technology

6 How do computers make our world work?

Page 70

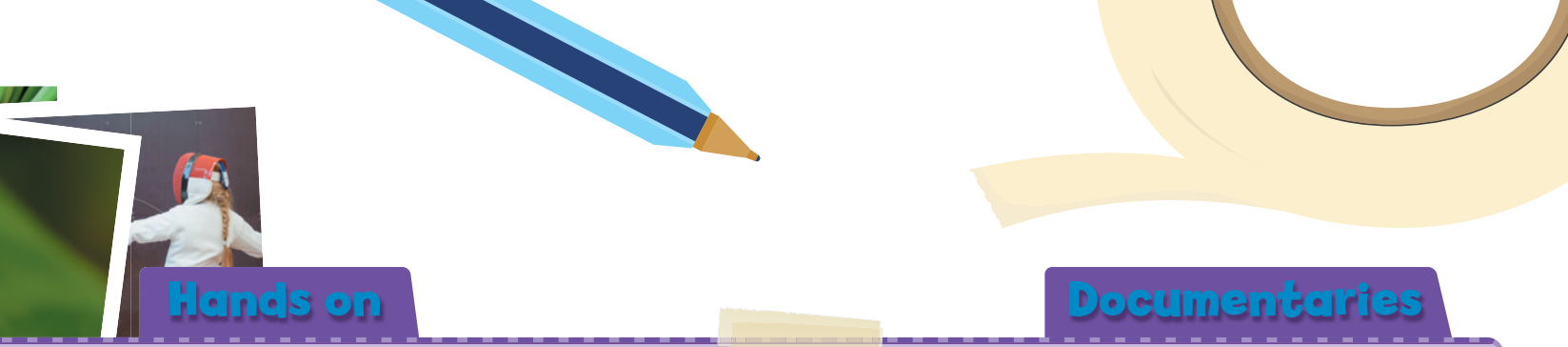
- Binary code and programming
- Robotics
- Finding reliable information on the internet

- 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**



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NATURAL SCIENCE 5



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Welcome

Page 4

1 What does it mean to be a living thing?

Page 6

2 What can we measure and show in ecosystems?

Page 18

3 What is geology?

Page 32

4 What are the best ways to harness energy?

Page 44

5 How do light, sound and heat energy behave differently?

Page 58

6 How does electricity affect us?

Page 70

- Animal and plant cells
- Cells, tissues, organs, organ systems
- The five kingdoms
- Dichotomous keys
- Weird and wonderful organisms

- Food chains
- Food webs
- Threats to biodiversity
- Protecting species

- The four layers of the geosphere
- Relief formation
- Classifying rocks
- Classifying minerals

- Different forms of energy
- Energy transformations
- Renewable energy sources
- Non-renewable energy sources

- Properties of sound
- Light sources and properties of light
- Reflection
- Refraction
- Properties of heat

- Electrical charges
- Static electricity
- Current electricity
- Edison and the lightbulb
- 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**



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NATURAL SCIENCE 6



Contents

Welcome

Page 4

1 How do we interact with the world?

Page 6

- Sense organs
- Nervous system
- Musculoskeletal system
- Reflexes

2 What are we made of?

Page 18

- Stages of nutrition
- Food groups and nutrients
- Digestive system
- Circulatory system
- Respiratory and excretory systems
- First aid techniques

3 How does the life cycle continue?

Page 34

- Human life cycle
- Male reproductive system
- Female reproductive system
- Stages of reproduction
- Sexuality and emotions during puberty

4 How does our lifestyle affect our health?

Page 48

- Benefits of exercise
- Emotional and social health
- Harmful behaviours
- Healthy sleep habits
- Digital health

5 What is a mixture?

Page 60

- Mixtures and states of matter
- Homogeneous and heterogeneous mixtures
- Magnetic separation
- Filtration
- Evaporation and distillation

6 How do machines move?

Page 72

- Measuring mass, volume and capacity
- Density and buoyancy
- 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**



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