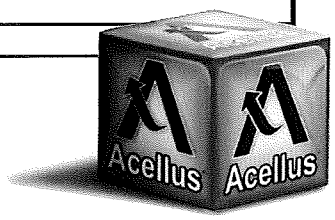
Acellus® Science Club 1

INTERNATIONAL ACADEMY OF SCIENCE
Science Club 1 Course Curriculum

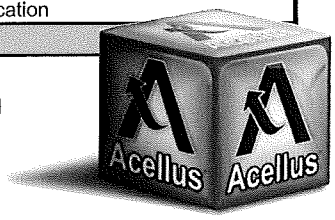
Unit 1 - Plants	31 What Can Be Recycled?
1 The Five Senses	Unit 4 - The Sky Is Always Changing
2 What Makes a Plant?	32 What Is Weather?
3 Let's Look at Stems	33 Let's Talk About Snow
4 Things Plants Need	34 What Does Wind Affect?
5 Can We Sprout Seeds?	35 Not All Clouds are the Same
6 How Plants Grow	36 Weather Changes What We Wear
7 There Are Many Kinds of Plants	37 The Four Seasons
8 Plant Parts We Eat	38 Day and Night
Unit 2 - Animals	39 What Makes the Sky Change?
9 There Are Many Kinds of Animals	40 The Sky at Night
10 Animal Habits	41 Let's Make a Shadow
11 Animals Need Things to Live	Unit 5 - Let's Learn About Matter
12 Care for Your Pet	42 Paper and Cloth
13 There Are Many Kinds of Bugs	43 Making Paper
14 Bug Collecting	44 Metal and Wood
15 Mammals and Reptiles	45 Welding and Woodworking
16 Do Animals Breathe Inside of Eggs?	46 Let's Look at Clay
17 There Are Many Kinds of Birds	47 What Can Clay Be Used For?
18 Let's Feed the Birds	48 Can We Make Pinch Pots?
19 What Keeps Animals Safe?	49 Water Can Be Three Ways
20 Animal Life Cycles	50 Where's All the Water?
21 Plants and Animals Help Each Other	51 Float or Sink?
22 Animals and People Help Each Other	52 Solid, Liquid, or Gas?
Unit 3 - Our Planet's Resources	Unit 6 - Movements
23 Our Planet Earth	53 What Are Wheels For?
24 What Is Found in Soil?	54 Let's Look at Pulleys
25 So Many Rocks	55 What Makes Things Move?
26 What Changes Landscapes?	56 Slide or Roll?
27 Water Changes the World	57 What Makes Things Fall?
28 Where Does Water Come From?	58 There Are Sounds Everywhere
29 Earth's Amazing Resources	59 Magnets
30 What Is Recycling?	60 What Do Magnets Move?



Acellus® Science Club 2

INTERNATIONAL ACADEMY OF SCIENCE
Science Club 2 Course Curriculum

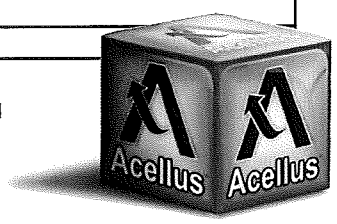
Unit 1 - Habitat	39 What Is Snowy Weather?
1 Science Skills	40 Let's Learn About Seasons
2 Things Plants Need	41 What Is in the Sky During the Day?
3 Living or Nonliving?	42 What Makes Day and Night?
4 Things Animals Need	43 What Is in the Sky During the Night?
5 Let's Learn About Forest Habitats	44 Let's Learn About the Moon
6 Let's Learn About Wetland Habitats	45 Let's Look at Planets
7 Let's Learn About the Ocean	**Unit 5 - Matter**
8 Some Animals Need Saltwater	46 Let's Learn About Matter
9 Let's Learn About Desert Habitats	47 Solids, Liquids, and Gases
10 Desert Leaves	48 Mixing Solids and Liquids
11 How Does Fur Keep Animals Warm?	49 Water Can Change
12 Animal Adaptations	50 Matter Can Be Changed
Unit 2 - Life Cycles	51 Float or Sink
13 What Is an Antenna?	52 Height and Weight
14 How Do Animals Get Their Food?	53 What Is Glass Blowing?
15 What Protects Animals?	**Unit 6 - Sounds and Movements**
16 Plant Parts	54 Why Do Things Move?
17 Plant Adaptations	55 Different Things Move Different Ways
18 What Keeps Plants Safe?	56 What Are Magnets?
19 Classifying Animals	57 What Is Attracted To Magnets?
20 Animal Life Cycles	58 What Makes Sounds?
21 As Living Things Grow They Change	59 Sounds Are All Around Us
22 Related Animals Can Be Very Different	60 Nature Can Make Many Sounds
23 Plant Life Cycles	61 Let's Make Noisemakers
24 Sprouting Seeds	62 Let's Talk About Speed
25 What Is a Food Chain?	**Unit 7 - Energy and Technology**
Unit 3 - Earth's Resources	63 Let's Learn About Energy
26 Different Kinds of Land and Water	64 Let's Talk About Heat
27 What Are Rocks?	65 What Is Fuel?
28 Let's Look at Soil	66 Let's Learn About Electricity
29 What Makes Land Change?	67 What Are Batteries?
30 More About Erosion	68 Let's Learn About Light
31 Earth Has Many Resources	69 How Are Shadows Made?
32 Reduce, Reuse, and Recycle	70 Where Do We Get Energy?
33 Let's Learn About Fossils	71 Technology Used for Farms
Unit 4 - Weather and the Sky	72 Tools Can Help Us at Home
34 Let's Learn About Weather	73 Technology Used for Construction
35 Let's Make a Wind Sock	74 Simple Machines
36 What Is a Thermometer?	75 More About Simple Machines
37 How Are Clouds Formed?	76 Technology Used for Communication
38 What Is Wet Weather?	



Acellus® Exploring Science

INTERNATIONAL ACADEMY OF SCIENCE
Exploring Science Course Curriculum

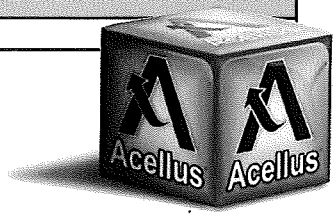
Unit 1 - Plants	46 Lab: How Can Weather Be Measured?
1 Exploring Science	47 Mysterious Weather
2 Parts of Plants	Unit 6 - Matter
3 Lab: Do Plants Need Water?	48 Properties of Matter
4 Show and Tell: Seeds	49 States of Matter
5 Plants With and Without Flowers	50 Changing Matter
6 Woodland Plant Adaptations	51 Mixing and Separating Matter
7 Prairie Plant Adaptations	52 Lab: Does Oil Mix with Water?
8 Desert Plant Adaptations	53 Temperature Can Change Matter
9 Marsh Plant Adaptations	54 Lab: How Are Salt Crystals Formed?
10 Lab: Can a Carrot Top Grow into a Plant?	55 Show and Tell: Chemical Reactions
Unit 2 - Animals	Unit 7 - Energy
11 Animals With Backbones	56 Solar Energy
12 Mammal Adaptations	57 Lab: How Does a Solar Oven Work?
13 Reptile Adaptations	58 Living Things Use Energy
14 Amphibian Adaptations	59 Heat Energy
15 Bird Adaptations	60 Light Energy
16 Fish Adaptations	61 Lab: How Can Light Be Changed?
17 Animals Without Backbones	62 Shadows
18 Show and Tell: Insects	63 Show and Tell: Electricity
19 Sorting Animals	64 More Kinds of Energy
Unit 3 - Food Chains and Life Cycles	Unit 8 - Forces, Motion and Sound
20 Producers and Consumers	65 Force, Motion and Work
21 Lab: How Does Bread Rise?	66 Lab: Is More Force Needed to Move Heavy Things?
22 Grassland Food Chains	67 Gravity
23 Ocean Food Chains	68 Changing the Way Things Move
24 Plants and Animals Help Each Other	69 Show and Tell: Simple Machines
25 Show and Tell: Monarch Butterflies	70 More About Simple Machines
26 The Life Cycle of an American Robin	71 Magnets
27 The Life Cycle of a Red-footed Tortoise	72 Lab: What Do Magnets Attract?
28 Lab: How Do Bean Plants Grow?	73 Sound
29 Life Cycles	Unit 9 - Space
Unit 4 - Earth's Resources	74 The Sun
30 Natural Resources	75 Lab: What Causes Day and Night?
31 Show and Tell: Rocks	76 How Seasons Change
32 Lab: How Are Soils Different?	77 The Moon
33 Plants Are a Natural Resource	78 Planets in Our Solar System
34 How Earth Changes	79 Show and Tell: Stars and Constellations
35 People Can Help Protect Earth	80 Shooting Stars
36 Show and Tell: Fossils	81 Mysterious Rocks from Outer Space
37 Dinosaurs	82 Space Exploration
38 Lab: Can Plants Help Slow Down Erosion?	Unit 10 - Technology
Unit 5 - Weather and Seasons	83 Technology
39 There Are Many Kinds of Weather	84 Lab: Can Technology Help Us Move Things?
40 The Four Seasons	85 Technology for Health
41 The Water Cycle	86 Show and Tell: Communication
42 Lab: How Does a Terrarium Work?	87 Technology for Meteorology
43 Thunderstorms	88 Lab: Which Napkin is Stronger?
44 Tornadoes	89 Technology with Robots
45 Hurricanes	90 Technology for Clean Energy



Acellus® Discovering Science

INTERNATIONAL ACADEMY OF SCIENCE
Discovering Science Course Curriculum

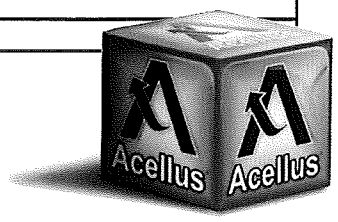
Unit 1 - Plant Life	**Unit 5 - Water**
1 Plants Alike and Different	46 Why Water Is Important
2 Leaves	47 Many Uses of Water
3 Stems	48 Earth's Water
4 Roots	49 Different Forms of Water
5 How Flowering Plants Make Seeds	50 The Water Cycle
6 How Coniferous Trees Make Seeds	51 Ways People Clean Water
7 How New Plants Grow	52 Exploring Snowflakes
8 A Closer Look at Seeds	53 Lab: Modeling the Water Cycle
9 Plants from the Past	**Unit 6 - Weather**
10 Lab: Germinating Seeds	54 Exploring Clouds
Unit 2 - Animal Life	55 The Atmosphere
11 Vertebrates – Animals with Backbones	56 Measuring and Predicting Weather
12 Invertebrates – Animals without Backbones	57 Weather Maps
13 Animals - Life Cycle Stages	58 Pollution Alerts
14 Life Cycle of a Ladybug	59 Hurricanes
15 Life Cycle of a Black Bear	60 Tornadoes
16 Animal Adaptations	61 Blizzards
17 Animal Adaptations for Protection	62 Storm Watches and Warnings
18 Animal Instincts	63 Lab: Carbon Dioxide Effects on Weather
19 Animals from the Past	**Unit 7 - Rocks and Soil**
20 Lab: Animal Tracks	64 Rocks – Alike and Different
Unit 3 - Animals and Plants Ecosystems	65 Rock Layers – A Natural Timeline
21 Environments	66 Igneous Rock
22 Ecosystems	67 Sedimentary Rock
23 Habitats	68 Metamorphic Rock
24 Grassland	69 Minerals
25 Desert	70 Some Ways People Use Minerals
26 Tundra	71 More Ways People Use Minerals
27 Coniferous Forest	72 The Importance of Soil
28 Deciduous Forest	73 Layers of Soil
29 Tropical Forest	74 Different Types of Soil
30 Freshwater Ecosystems	75 Lab: Fizzing Rocks!
31 Saltwater Ecosystems	**Unit 8 - Changes on Earth's Surface**
32 Lab: Habitat for Mold	76 Earth's Layers
Unit 4 - Animals and Plants Living Together	77 Different Landforms
33 Some Ways Living Things Interact	78 Volcanoes
34 Energy for Living Things	79 Earthquakes
35 Food Webs	80 Weathering
36 Some Ways Living Things Compete	81 Erosion
37 More Kinds of Competition	82 Lab: Modeling Erosion
38 How Environments Can Change	**Unit 9 - Earth's Natural Resources**
39 Natural Patterns of Change	83 Natural Resources
40 A Healthy Environment for Humans	84 Conserving Natural Resources
41 Healthy Food Gives Us Healthy Energy	85 Landfills
42 How We Get Energy from Food	86 Reduce, Reuse, and Recycle
43 Why Exercise Is Important	87 Lab: Let's Make Compost
44 A Closer Look at Germs	**Unit 10 - Properties of Matter**
45 Lab: Mushroom Spore Prints	88 Describing Matter



Acellus® Discovering Science

INTERNATIONAL ACADEMY OF SCIENCE
Discovering Science Course Curriculum

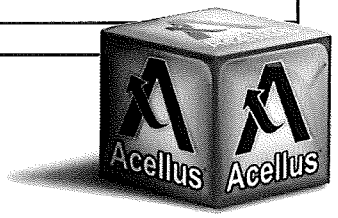
89 States of Matter	Unit 15 - More About Energy
90 A Closer Look at Matter	125 Heat Sources
91 Measuring Mass	126 What Makes Things Feel Hot?
92 Measuring Volume	127 Thermal Energy and States of Matter
93 Another Way to Measure Volume	128 Sources of Light
94 Measuring Density	129 How Light Travels
95 Measuring Length	130 How We See Things
96 Lab: Comparing Densities of Liquids	131 So Many Colors
Unit 11 - Changes in Matter	132 Electrical Energy
97 Physical Changes in Matter	133 More about Electricity
98 More Physical Changes in Matter	134 Lab: The Path of Light
99 Mixtures	Unit 16 - Sound
100 Solutions	135 Sound Vibrations and Pitch
101 Chemical Changes in Matter	136 Musical Instruments and Sound
102 How We Use Chemical Changes	137 How Humans Make Sound
103 Lab: Name That Change!	138 Sound Waves
Unit 12 - Forces and Motion	139 Sound and Matter
104 Motion	140 The Human Ear
105 Position	141 Animal Sounds
106 Speed	142 Lab: Let's Make a Vibration Viewer
107 Force	Unit 17 - Looking at the Sky
108 Friction	143 Day and Night
109 Gravity	144 Earth's Revolution
110 Magnetism	145 Phases of the Moon
111 Work	146 Constellations
112 Let's Observe Motion	147 Lab: Why Does the Sky Look Blue?
Unit 13 - Simple Machines	Unit 18 - The Solar System
113 Inclined Plane	148 The Sun
114 Wedge	149 Exploring the Solar System
115 Screw	150 The Inner Planets
116 Lever	151 Life on Earth
117 Wheel and Axle	152 The Outer Planets
118 Pulley	153 Dwarf Planets
Unit 14 - Introduction to Energy	154 Lab: A Planet's Distance from the Sun - Temperature
119 Energy	Unit 19 - We Use Science Every Day
120 Potential Energy	155 Technology
121 Kinetic Energy	156 Computers
122 How Energy Changes Form	157 Transportation Tools
123 Waves	158 Unexpected Uses for Technology
124 Lab: Catapults!	159 Energy and Technology
	160 Lab: Exploring the Arch



Acellus® Grade 4 Science

INTERNATIONAL ACADEMY OF SCIENCE
Grade 4 Science Course Curriculum

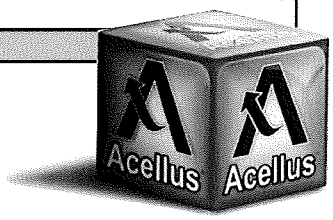
Unit 1 - Classifications of Plants and Animals	43 Forecasting Tornadoes
1 The Building Blocks of Life	44 Meteorologist
2 Groupings of Living Things	45 Meteorologist - Lab
3 Plant Classifications	Unit 8 - Minerals and Rocks
4 Animal Classifications	46 Minerals
5 Animal Adaptations	47 Forming Sedimentary Rocks
6 Wowza! Inquiry 1	48 Forming Metamorphic Rocks
Unit 2 - Energy from Plants	49 Forming Igneous Rocks
7 Characteristics of Plants	50 Biography: Alfred Wegner
8 Parts of Plants	Unit 9 - Surface Changes on Earth
9 Plant Reproduction	51 Earth's Surface Wearing Away
10 The Life Cycle of a Plant	52 Weathered Material's Movement
11 Biography: Charles Darwin	53 Volcanos
Unit 3 - Ecosystems	54 Earthquakes
12 Parts of Ecosystems	55 Wowza! Pepper
13 Energy Flow in Ecosystems	Unit 10 - Uses of Natural Resources
14 Matter Flow in Ecosystems	56 Natural Resources
15 Wowza! Milk	57 Resources Used for Energy
Unit 4 - Changes in Ecosystems	58 Soil
16 Balanced Ecosystems	59 Geologist
17 Competition	60 Geologist – Lab
18 Organisms' Interactions	Unit 11 - Properties of Matter
19 Environmental Changes	61 Matter
20 Ways That People Disturb the Balance	62 Measuring Matter
21 Conserving the Balance	63 Mixing Substances
22 Biologist	64 Matter Changes
23 Biologist – Lab	65 Physical Change
Unit 5 - Human Body Systems	66 Chemical Change
24 Skeletal System	67 Phase Changes
25 Muscular System	68 Wowza! Baking Soda and Vinegar
26 Respiratory System	Unit 12 - Heat
27 Circulatory System	69 Matter Containing Energy
28 Digestive System	70 Movement of Heat
29 Nervous System	71 Convection
30 Viruses and Disease	72 Radiation
31 The Body's Defenses	73 Chemist
32 Optometrist – Lab	74 Chemist – Lab
Unit 6 - Water Cycles and Weather	Unit 13 - Magnetism and Electricity
33 Earth's Water	75 Atoms
34 Clouds	76 Charging of Matter
35 Atmosphere and Air Pressure	77 Flow of Electric Charges
36 Water Cycle	78 Electricity Transformed to Magnetism
37 Measuring Weather	79 Magnetic Fields
38 Predicting Weather	80 Wowza! Jumping Flame
39 Wowza! Magic Matches	Unit 14 - Light and Sound
Unit 7 - Hurricanes and Tornadoes	81 Sound Energy
40 Predicting Hurricanes	82 Producing Sound
41 Hurricanes	83 Light Energy
42 Tornadoes	84 How Matter and Light Interact



Acellus® Grade 4 Science

INTERNATIONAL ACADEMY OF SCIENCE
Grade 4 Science Course Curriculum

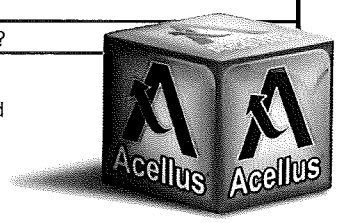
85 Biography: Thomas Edison	101 Saturn
Unit 15 - Objects in Motion	102 Uranus
86 Motion	103 Neptune
87 How Force Affects Moving Objects	104 Wowza! Rocket
88 How Force, Mass, and Energy Relate	105 Constellations
Unit 16 - Simple Machines	106 Eclipses
89 Machines	107 Moon Phases
90 How Machines Work Together	108 Asteroid Belts
91 Wowza! Crazy Chemistry	109 Comets
Unit 17 - Inner and Outer Planets	110 Moon
92 The Making of the Universe	111 Stars
93 Our Solar System	112 Sun
94 Revolution	113 Biography: Nicolas Copernicus
95 Rotations	Unit 18 - Technology's Effects
96 Mercury	114 How Technology Affects Our Lives
97 Venus	115 How Technology Changed Transportation
98 Earth	116 How Technology Changed Communication
99 Mars	117 Wowza! Inquiry 2
100 Jupiter	



Acellus® Fundamental Science

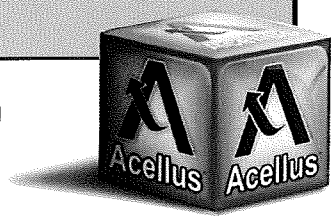
INTERNATIONAL ACADEMY OF SCIENCE
Fundamental Science Course Curriculum

Unit 1 - Classification of Organisms	**Unit 8 - Weather**
1 Classification	42 Air Movement
2 Six Kingdoms of Living Things	43 Air Masses
3 Taxonomy	44 Severe Weather
4 Classifying Vertebrates	45 Climate
5 Classifying Invertebrates	46 Weather Instruments
6 Classifying Other Organisms: Plants	47 Weather Forecasting
7 Lab: Vertebrates	48 Lab: High Pressure/Low Pressure
Unit 2 - Cells	**Unit 9 - The Changing Earth**
8 The Cell	49 Earth's Layers
9 Cells to Systems	50 Earthquakes and Volcanoes
10 Inside the Animal Cell	51 Weathering vs. Erosion
11 Inside the Plant Cell	52 Identifying Minerals
12 Cells Working Together	53 Identifying Rocks
13 Lab: Growing Cells - Yeast	54 Lab: Layers of the Earth
Unit 3 - Human Body Systems	**Unit 10 - The Earth's Resources**
14 The Systems That Make Up the Human Body	55 Nonrenewable Resources
15 Circulatory System	56 Other Resources
16 Blood	57 Conservation of Earth's Resources
17 The Heart	58 Lab: Recycling Paper
18 Respiratory System	**Unit 11 - Matter**
19 Digestive System	59 Matter
20 Lab: My Beating Heart	60 Properties of Matter
Unit 4 - Plants	61 Atoms
21 Photosynthesis	62 Phase Changes
22 Stems and Roots	63 Mixtures vs. Solutions
23 Plant Reproduction	64 Lab: Mix It Up!
24 The Growing Plant	**Unit 12 - Changes in Matter**
25 Lab: Leafy Green	65 Physical Changes
Unit 5 - Ecosystems	66 Chemical Changes
26 Ecosystems and Their Needs	67 Chemical Properties
27 Land Biomes	68 Chemical Technology
28 Water Ecosystems	69 Lab: We Want S'More Science
29 The Interaction of Organisms	**Unit 13 - Forces in Motion**
30 Energy Within an Ecosystem - Part I	70 Motion
31 Energy Within an Ecosystem - Part II	71 Forces
32 Lab: Hunting for Candies - A Lab About Camouflage	72 Sir Isaac Newton
Unit 6 - Ecosystem Change	73 Newton's Laws - 1st
33 The Changing Ecosystems	74 Newton's Laws - 2nd
34 Changing Species	75 Newton's Laws - 3rd
35 How Changes Affect Our Ecosystems	76 Simple Machines
36 Lab: Habitat Pollution	77 Lab: Fly Me to the Moon - Straw Rockets
Unit 7 - Water	**Unit 14 - Energy**
37 Our Salty Oceans	78 Energy
38 Earth's Fresh Water	79 Sound Energy
39 Water Cycle	80 Light Energy
40 Cloud Formation	81 Thermal Energy
41 Lab: Frying Ice	82 Lab: Do You Hear What I Hear?



Acellus® Fundamental Science

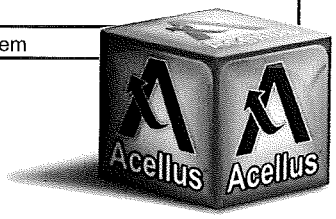
INTERNATIONAL ACADEMY OF SCIENCE
Fundamental Science Course Curriculum



Acellus® Life Science

INTERNATIONAL ACADEMY OF SCIENCE
Life Science Course Curriculum

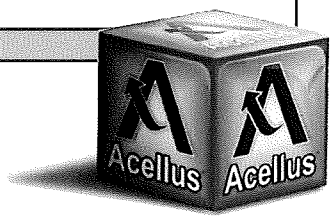
Unit 1: Exploring Science	45 Leaves and Photosynthesis
1 Branches of Science	46 Gymnosperms
2 Basic Science Vocabulary	47 Angiosperm Flower Parts
3 Metric System Terms	48 Mold and Graphing Lab
4 Scientific Method	Unit 6: Simple Invertebrates
5 Tools of Science	49 Sponges and Cnidarians
6 Microscopes	50 Mollusks
7 Safety Rules and Symbols for Science	51 Worms
8 Chemical Color Lab	52 Earthworm
Unit 2: Science and Nature	53 Groups of Arthropods
9 Food Webs and Food Chains	54 Characteristics of Insects
10 History of Life on Earth	55 Echinoderms
11 Evidence of Evolving	56 Parts of a Starfish
12 Forest Biomes	57 Earthworm Dissection
13 Land Biomes Except Forests	58 Starfish Dissection
14 Water Biomes	Unit 7: Vertebrate Animals
15 Cycles in Nature	59 Characteristics of Fish
16 Cycles in Time	60 Parts of a Bony Fish
17 Organisms and Environment	61 Characteristics of Amphibians
18 Conservation	62 Parts of a Frog
Unit 3: The Nature of Life, Cells, and Classification of Organisms	63 Characteristics of Reptiles
19 Five Basic Life Processes	64 Groups of Reptiles
20 Basic Needs of Living Things	65 Characteristics of Birds
21 Chemistry of Living Things	66 Types of Birds, Beaks, and Feet
22 Cell Theory	67 Characteristics of Mammals
23 Levels of Organization	68 Groups of Mammals
24 Outer Parts of Plant and Animal Cells	69 Groups of Placental Mammals
25 Inner Parts of Plant and Animal Cells	70 Dichotomous Keys
26 Cell Pizza Lab	71 Frog Dissection
27 Cell Processes	Unit 8: Skeletal and Muscular System
28 Cell Division	72 Types of Tissue
29 Mitosis	73 Characteristics of Skeletal System
Unit 4: Simple Kingdoms and Classification	74 Bones
30 Classification Facts	75 Skeletal Joints
31 Introduction to Six Kingdoms	76 Muscles / Muscular System
32 Characteristics of Viruses	77 Muscles of the Body
33 Characteristics of Monerans	Unit 9: Nutrition
34 Parts of a Moneran	78 Six Food Groups
35 Characteristics of Protists	79 Six Basic Nutrients
36 Animal-like Protists	80 Digestive System
37 Plant and Fungus-like Protists	81 Digestive Parts
38 Classification Lab	Unit 10: Major Systems of the Body
Unit 5: Fungi and Plants	82 The Circulatory System
39 Fungus	83 The Heart
40 Parts of a Mushroom	84 Blood
41 Multicellular Alga	85 Body's Line of Defenses / Immune System
42 Plants on Land	86 The Respiratory System
43 Vascular Plant	87 The Excretory System
44 Seeds	88 The Skin or Integumentary System



Acellus® Life Science

INTERNATIONAL ACADEMY OF SCIENCE
Life Science Course Curriculum

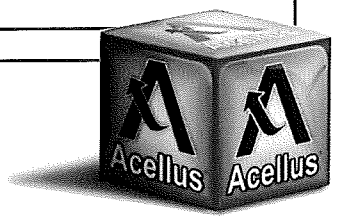
89 Endocrine System	97 Probability and Heredity
Unit 11: The Nervous System and Senses	98 DNA
90 Central Nervous System	99 Phases of Meiosis
91 Peripheral Nervous System	100 Asexual Reproduction
92 The Senses	Unit 13: Alcohol, Drugs, and Tobacco
93 Systems of the Body	101 Facts About Drugs
Unit 12: Reproductive System and Genetics	102 Alcohol
94 Female Reproductive System	103 Tobacco
95 Male Reproductive System	104 Drug Prevention
96 History of Genetics	



Acellus® Earth Science

INTERNATIONAL ACADEMY OF SCIENCE
Earth Science Course Curriculum

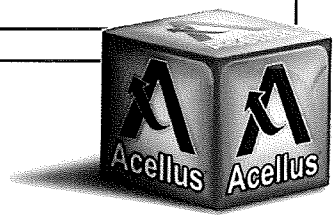
Unit 1 - Minerals	40 Fresh Water Underground
1 What Is a Mineral?	41 Fresh Water as a Resource
2 Identifying a Mineral by Its Properties	42 Water Shortages
3 Mineral Identification Lab	**Unit 11 - Ocean Systems**
4 Mining and the Use of Minerals	43 Oceans Are Connected Systems
Unit 2 - Rocks	44 Ocean Floors
5 Rock Cycle	45 Movement of Ocean Water
6 Igneous Rock	46 Waves in the Ocean
7 Sedimentary Rock	47 What Causes Tides?
8 Metamorphic Rock	**Unit 12 - Earth's Atmosphere**
9 Chocolate Chip Rock Cycle and Song	48 Composition of Atmosphere
Unit 3 - Weathering and Soil	49 Air Pressure
10 Mechanical Weathering vs. Chemical Weathering	50 Can Crusher Lab
11 Properties of Soil	51 Layers of the Atmosphere
12 Climate Affects Soil	52 Air Quality – Pollution
Unit 4 - Erosion and Deposition	**Unit 13 - Weather Factors**
13 Earth's Surface Is Built Up and Worn Down	53 Energy from the Sun
14 Water Movement Shapes Land	54 Heat Transfer
15 Waves and Wind Shape Land	55 What Is Wind
16 Glaciers Change Land, Move Sediment	56 Local vs. Global Winds
Unit 5 - Plate Tectonics	57 Global Wind Belts
17 Composition vs. Physical Structure of Earth	58 Humidity
18 Map of the Plates	59 Types of Clouds
19 Continental Drift	60 Precipitation
20 Plate Boundaries	**Unit 14 - Weather Patterns**
21 Deforming Earth's Crust	61 Types of Air Masses
Unit 6 - Earthquakes	62 How Masses Move
22 What Are Earthquakes?	63 Types of Fronts
23 Measurement of Earthquakes	64 Cyclones vs. Anticyclones
24 Preparing for Earthquakes	65 Thunderstorms
Unit 7 - Mountains and Volcanoes	66 Tornadoes
25 Mountain Formation	67 Hurricanes
26 Volcanic Eruptions	68 Snowstorms
27 Types of Volcanoes	**Unit 15 - Weather Predictions**
28 Causes of Eruptions	69 Weather Forecasting
Unit 8 - Earth's Past	70 Weather Technology
29 Relative Dating	71 How to Read a Weather Map
30 Types of Unconformities	**Unit 16 - Earth in Space**
31 Absolute Dating	72 How Earth Moves
32 Types of Fossils	73 Earth's Seasons
33 Geologic Time Scale	74 Gravity and Motion
Unit 9 - Natural Resources	**Unit 17 - Earth's Moon**
34 Renewable vs. Nonrenewable	75 Phases of the Moon
35 Fossil Fuel	76 Lunar vs. Solar Eclipse
36 Conservation and Recycling	77 The Moon's Surface
37 Other Energy Sources	78 Origin and Characteristics of the Moon
Unit 10 - Earth's Fresh Waters	**Unit 18 - Space Exploration**
38 Water Cycle	79 History of Rockets
39 Frozen Fresh Water	80 How Do Rockets Work?



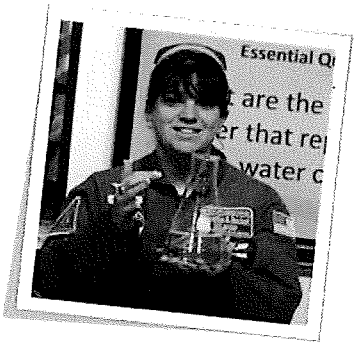
Acellus® Earth Science

INTERNATIONAL ACADEMY OF SCIENCE
Earth Science Course Curriculum

81 Multistage Rockets	96 Pluto
82 The Space Program	97 Speeding Around the Sun Lab
83 Working in Space	Unit 22 - Comets, Asteroids, and Meteors
84 Challenges of Space	98 Comets
Unit 19 - The Sun	99 Asteroids
85 Sun's Interior	100 Meteors
86 Sun's Atmosphere	Unit 23 - Telescopes
87 Features on the Sun	101 Electromagnetic Radiation
Unit 20 - Inner Planets	102 Types of Telescopes
88 Earth	103 Observatories
89 Mercury	Unit 24 - Stars
90 Venus	104 Classification of Stars
91 Mars	105 Measuring the Distance to Stars
Unit 21 - Outer Planets – Gas Giants	106 Hertzsprung-Russell Diagram
92 Jupiter	107 Lives of Stars
93 Saturn	108 Star Systems
94 Uranus	109 Galaxies
95 Neptune	110 Expanding Universe



Science Courses



The International Academy of Science offers Acellus courseware to help students build a solid understanding of science.

Each course provides video instruction and utilizes Deficiency Diagnostics and Customized Personal Instruction to offer a comprehensive feedback system that responds to users' interactions by modifying the curriculum to fit individual needs.

Based on each student's performance, Acellus creates an individualized experience, ensuring that each student has a chance to succeed at learning.

SCIENCE COURSES AND RESOURCES

Course	Curriculum List
Elementary (Grades K-5)	
Grade K Science	Curriculum
Grade 1 Science	Curriculum
Grade 2 Science	Curriculum
Grade 3 Science	Curriculum
Grade 4 Science	Curriculum
Grade 5 Science	Curriculum
Middle School (Grades 5-8)	
Grade 5 Science	Curriculum
Life Science	Curriculum
Earth Science	Curriculum
Physical Science	Curriculum
High School (Grades 9-12)	
Physical Science	Curriculum
General Biology	Curriculum
Honors Biology	Curriculum
General Chemistry	Curriculum
Honors Chemistry	Curriculum
General Physics	Curriculum
Honors Physics	Curriculum
AP Biology*	
AP Chemistry*	
AP Physics*	

*Coming soon.

Curriculum by Grade Level
- Elementary Courses
- Middle School Courses
- High School Courses
- College Prep Courses

Curriculum by Subject
- Mathematics
- Reading/Language Arts
- History/Social Studies
- Special Education Courses
- ELL Courses

Resources
- State Curriculum Alignments
- Course Instructors

Special Education
Response to Intervention
SAT/ACT Exam Preparation
End-of-Course Exam Prep
English Language Learners
Advanced Placement
Summer School
GED and Adult Education
Project Educate
Education
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Volunteer Program

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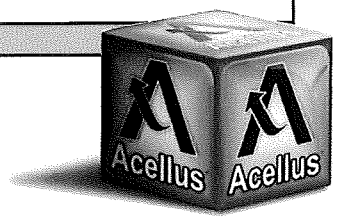
Acellus® General Biology

INTERNATIONAL ACADEMY OF SCIENCE
General Biology Course Curriculum

Unit 1 - Ecology	43 Chlorophyll / Pigments
1 Ecology / Interdependence	44 Photosynthesis and Cellular Respiration
2 Organization of the Biosphere	Unit 5 - Cell Division
3 Producers	45 Mitosis
4 Consumers	46 Reasons for Cell Division
5 Decomposition	47 Cancer
6 Energy Capture	48 Meiosis / Crossing Over
7 Food Web / Food Chain	49 Haploid / Diploid
8 Energy vs. Nutrients	50 Mitosis / Meiosis
9 Primary Productivity	51 Asexual Reproduction
10 Symbiotic Relationships	52 Sexual Reproduction
11 Competition	53 Cell Cycle
12 Mutualism / Commensalism	54 Cytokinesis
13 Predation	Unit 6 - Genetics
14 Camouflage / Mimicry	55 Mendel
15 Parasitism	56 Characters and Traits
16 Population Growth	57 Genotype / Phenotype
17 Carrying Capacity	58 Genes and Alleles
18 Limit on Population Growth	59 Homozygous and Heterozygous
19 Ecological Succession	60 Fertilization
Unit 2 - Cell Structure and Function	61 Probability
20 Cell Organelles	62 Mendel's F1 Cross
21 Nucleus	63 Law of Segregation
22 Mitochondria	64 Mendel's F_2 Generation
23 Ribosomes	65 Incomplete Dominance, Codominance, and Multiple Alleles
24 Cell Theory	66 Polygenic vs. Single Gene Traits
25 Eukaryote vs. Prokaryote	Unit 7 - DNA
26 Golgi Apparatus – Endoplasmic Reticulum	67 History of DNA
27 Vacuoles / Lysosome	68 DNA Shape / Structure
28 Chloroplast	69 Nucleosomes
Unit 3 - Cell Transport	70 Replication
29 Cell Membranes	71 Transcription
30 Cell Wall	72 RNA
31 Strength of Solutions	73 Genetic Code
32 Osmosis	74 Translation
33 Diffusion	75 Mutations
34 Active vs. Passive Transport	Unit 8 - Evolution
35 Endo and Exocytosis	76 Darwin
36 Facilitated Diffusion	77 Galapagos
37 Active Transport	78 Inherited Variation and Artificial Selection
Unit 4 - Cellular Energy	79 Evidence of Evolution
38 Discovering Photosynthesis	80 Natural Selection
39 Equation for Photosynthesis	81 Vestigial Structures
40 Rates of Photosynthesis	82 Allele Frequencies
41 Equation for Cellular Respiration	83 Changes in the Population
42 ATP / ADP	

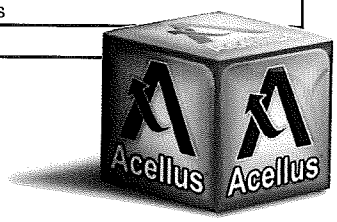


Acellus® General Chemistry

INTERNATIONAL ACADEMY OF SCIENCE
General Chemistry Course Curriculum

Unit 1 - Introduction to Chemistry
1 Why Study Chemistry?
2 Characteristics of Matter
3 Scientific Method
Unit 2 - Language of Chemistry
4 SI Units and Prefixes
5 SI Unit – Temperature – Conversions
6 SI Unit – Volume – Derived Unit
7 SI Unit – Density – Derived Unit
8 Scientific Notation
9 Scientific Notation – Addition and Subtraction
10 Scientific Notation – Multiplication and Division
11 Dimensional Analysis – Unit Conversion
12 Data Analysis
13 Significant Figures and Rounding
14 Significant Figures – Calculations – Addition and Subtraction
15 Significant Figures – Calculations – Multiplication and Division
Unit 3 - Properties and Changes of Matter
16 States of Matter and Properties
17 Physical versus Chemical Changes
18 Elements versus Compounds
19 Types of Mixtures
Unit 4 - The Atom
20 Organization of the Atom
21 Different Atoms
22 Quantum Theory and the Atom
23 Electronic Configuration
Unit 5 - Periodic Table
24 Modern Periodic Table
25 Electronic Configuration and Periodicity
26 Periodic Trends
Unit 6 - Chemical Bonding – Ions and Metals
27 Valence Electrons
28 Ionic Bonds and Compounds
29 Properties of Ionic Compounds
30 Formulas of Ionic Compounds
31 Names of Ions and Ionic Compounds
Unit 7 - Chemical Bonding – Covalent Non-Metals
32 Covalent Bond and Single Covalent Bond
33 Multiple Covalent Bond
34 Covalent Bond Strength
35 Names of Binary Molecular Compounds
36 Naming Acids
37 Lewis Structure – Covalent Compound
38 Lewis Structure – Polyatomic Ions
Unit 8 - Molecular Shapes
39 VSEPR
40 Electronegativity and Polarity

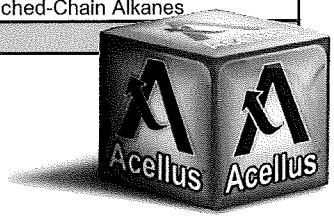
Unit 9 - Chemical Equations
41 Chemical Reactions and Balancing Chemical Equations
42 Types of Chemical Reactions
43 Reactions in Water
Unit 10 - The Mole
44 Moles to Particles
45 Moles to Mass
46 Mole Ratios of Compounds
47 Percent Composition Calculations
48 Empirical Formula Calculations
49 Molecular Formulas Calculations
Unit 11 - Stoichiometry
50 Chemical Reactions and How Much?
51 Stoichiometric Calculations – Mole to Mole
52 Stoichiometric Calculations – Mole to Mass or Mass to Mole
53 Stoichiometric Calculations – Mass to Mass
54 Stoichiometric Calculations – Percent Yield
Unit 12 - Solids, Liquids, and Gases
55 Gases – Kinetic-Molecular Theory, Behavior and Units
56 Gases – Dalton's Law of Partial Pressures
57 Intermolecular Forces Determine State of Matter
58 Liquids
59 Solids
Unit 13 - Gas Laws
60 Gases – Boyle's Law
61 Gases – Charles's Law
62 Gases – Gay-Lussac's Law
63 Gases – Combined Gas Law
64 Gases – Ideal Gas Law
Unit 14 - Mixtures and Solutions
65 Heterogeneous Mixture
66 Homogeneous Mixture
67 Concentration – Percent by Mass
68 Concentration – Percent by Volume
69 Concentration – Molarity
70 Concentraton – Dilution of Molar Solutions
71 Concentration – Molality
72 Concentration – Mole Fraction
73 Solvation – Ionic and Molecular Compounds
74 Solubility
75 Colligative Properties
Unit 15 - Acids and Bases
76 Arrhenius Model
77 Bronsted-Lowry Model
78 Lewis Model
79 Strength of Acids
80 Weak Acid Ionization Constants
81 Strength of Bases



Acellus® General Chemistry

INTERNATIONAL ACADEMY OF SCIENCE
General Chemistry Course Curriculum

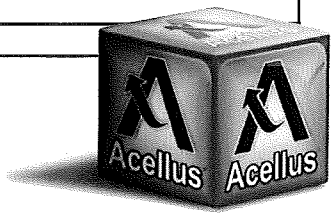
82 Weak Base Ionization Constants	89 Acids and Bases – Neutralization Reactions
83 Hydrogen Ions and Ion Product Constant	Unit 16 - Organic Chemistry
84 pH and pOH	90 Hydrocarbons – Alkanes
85 pH and H+ Calculations	91 Hydrocarbons – Drawing Structures
86 pOH and OH- Calculations	92 Hydrocarbons – Alkanes – Straight-Chain Alkanes
87 pH and pOH Calculations	93 Hydrocarbons – Alkanes – Branched-Chain Alkanes
88 pH and pOH Strong Acids and Bases	



Acellus® General Physics

INTERNATIONAL ACADEMY OF SCIENCE
General Physics Course Curriculum

Unit 1 - Introduction to Physics	45 Gravity and Orbits
1 What Is Physics?	Unit 6 - Energy
2 Measured Numbers	46 Work
3 Using Significant Digits	47 Positive and Negative Work
4 Scientific Notation	48 Work and Energy
5 Metric System	49 Kinetic Energy
6 Math with Units	50 Gravitational Potential Energy
7 Conversions	51 Mechanical Energy
Unit 2 - 1-D Kinematics	52 Energy Problems – No Work
8 Position and Displacement	53 Energy Problems with Work
9 Average Velocity	54 Power
10 Position Graphs	Unit 7 - Momentum
11 Velocity Graphs and Acceleration	55 Momentum
12 Positive, Minus, and Zero Acceleration	56 Impulse
13 1-D Kinematic Equations	57 Conservation of Momentum
14 Using Motion Equations	58 Collisions
15 Solving Motion Problems, Part 1	59 Inelastic Collisions
16 Solving Motion Problems, Part 2	60 Recoil
17 Solving a Quadratic for Time	Unit 8 - Fluid Mechanics
Unit 3 - Vectors and 2-D Kinematics	61 Fluids
18 Vectors and 2-D Motion	62 Pressure
19 Graphical Addition of Vectors	63 Pressure and Depth
20 Vector Components	64 Buoyant Force
21 Vector Magnitude & Direction	65 Flow Rate
22 Analytical Addition of Vectors	Unit 9 - Thermodynamics
23 Breaking Down 2-D Motion	66 Heat
24 Solving 2-D Motion	67 Temperature
25 Projectile Motion 1	68 Thermal Expansion
26 Projectile Motion 2	69 Heat and Temperature Change
Unit 4 - Forces and Newton's Laws	70 Calorimetry
27 Introduction to Dynamics	71 Phase Change
28 Newton's Second Law – Single Force	72 Measuring Gases
29 Newton's First Law	73 Behavior of Gases
30 Multiple Forces	74 First Law of Thermodynamics
31 Weight	Unit 10 - Oscillations and Waves
32 Newton's Third Law and Normal Force	75 Oscillations
33 Kinetic Friction	76 Hooke's Law
34 Static Friction	77 Simple Harmonic Motion
35 2-D Force Problems	78 Period and Frequency
36 2-D Force Problems Examples	79 Oscillation of Pendulums
37 Inclined Plane	80 Waves
38 Inclined Plane Examples	81 Wave Properties
Unit 5 - Circular Motion and Gravity	82 Interference
39 Uniform Circular Motion	83 Standing Waves
40 Centripetal Force and Acceleration	84 Standing Wave Equation
41 Period	Unit 11 - Sound
42 Centripetal vs. Centrifugal	85 Sound Waves
43 Force of Gravity	86 Sound Properties
44 Acceleration of Gravity	87 Speed of Sound



Acellus® General Physics

INTERNATIONAL ACADEMY OF SCIENCE
General Physics Course Curriculum

88 String Instruments	105 Force from Multiple Charges
89 Open Pipes	106 Electric Field
90 Closed Pipes	107 Electric Potential Energy
Unit 12 - Light	108 Electric Potential
91 Light Waves	109 Potential Difference
92 Color	Unit 15 - DC Electric Circuits
93 Electromagnetic Spectrum	110 Electric Current and Circuits
94 Reflection	111 Resistance and Ohm's Law
95 Index of Refraction	112 Simple Circuits
96 Refraction	113 Electric Power
97 Internal Reflection	114 Series and Parallel
Unit 13 - Optics	115 Series Resistors
98 Lenses and Images	116 Parallel Resistors
99 Ray Tracing	Unit 16 - Magnetic Forces
100 Convex Lens with Real Image	117 Magnetic Forces
101 Magnification	118 Magnetic Fields
102 Convex Lens with Virtual Image	119 Magnetic Field from a Current
Unit 14 - Electric Forces	120 Magnetic Field from Current Loops
103 Electric Charges	121 Magnetic Force on Moving Charges
104 Coulomb's Law