



and



SCIENCE WITH E-BLOX

Aligned with Next Generation Science Standards (NGSS)

Chapter 1 - Light and Sound

Lessons

Lesson 1

How We Perceive the World Around

Lesson 2

Sound Is All Around Us

Lesson 3

What Makes Sound?
“Sound” Quiz

Lesson 4

Light Sources

Lesson 5

How Light Behaves

NGSS

1-PS4-1

1-PS4-1

1-PS4-1

1-PS4-2

1-PS4-3

Skills

Identify how we see and hear

Identify sounds in our surroundings

Identify how sounds are made

Identify where light comes from

Identify how light moves

E-Blox Projects

“Closed Circuits” - build a closed circuit to understand how audio and visual devices function

“Speaker” - build a circuit with a speaker to see how audio alarms work

“Switches” - build a circuit with an on/off switch to see how toy lights work

“Lamp vs LED” - build circuits with lamps and LEDs to see the efficiency benefit of LED lights

Lessons

Lesson 6
Shadows
“Light” Quiz

Lesson 7
People Use Sound to
Communicate

Lesson 8
People Use Light to
Communicate
“Sound and Light to
Communicate” Quiz

Lesson 9
Review

Lesson 1
Observing Patterns and
Making Predictions
“Patterns and
Predictions” Quiz

Lesson 2
The Sun and Seasons

NGSS

1-PS4-3

1-PS4-4

1-PS4-4

1-PS4-1,
1-PS4-2,
1-PS4-3,
1-PS4-4

1-ESS1-1

1-ESS1-1,
1-ESS1-2

Skills

Identify what makes
a shadow

Identify ways to
communicate using
sound

Identify ways to
communicate using
light

Identify patterns in
the world

Identify the
connection between
the sun and seasons

E-Blox Projects

“Series Circuits” – build a series
circuit with several light sources
and see what happens when one
component is removed

“Ship to Ship Morse Code” – build
a circuit with an LED and use
flashing lights to transfer Morse
code

“Parallel Circuits” – build
a parallel circuit with several light
sources and see what happens
when one component is removed

Chapter 2 – Space

Lessons

NGSS

Skills

E-Blox Projects

Lesson 3
Observing Our Sun
“Our Sun” Quiz

1-ESS1-1

Identify the patterns of our sun

Lesson 4
Observing Our Moon

1-ESS1-1

Identify the patterns of our moon

Lesson 5
Observing the Stars
“Moon and Stars” Quiz

1-ESS1-1

Identify the patterns of our stars

Lesson 6
Review

1-ESS1-1,
1-ESS1-2

“Three-Person Rocket Launch” - simulate a rocket launch by turning on all the switches in a circuit at once

“Space Battle Sounds” - build a circuit with a speaker and a 3-in-1 module to produce space effects

Chapter 3 - Plants

Lesson 1
Plant World

1-LS1-1

Identify similarities and differences in plants

Lesson 2
Plants and Sunlight
“Plants” Quiz

1-LS1-1

Identify how plants use and react to sunlight

Lesson 3
Plant Structures and Their Functions
“Plant Structures” Quiz

1-LS1-1

Identify plant parts and how plants function

“Detecting Fluid Levels” - build a circuit with a reed switch and a light source to identify the level of water in a garden water tank

Lessons

NGSS

Skills

E-Blox Projects

Lesson 4
Inherited Traits
“Inherited Traits” Quiz

1-LS3-1

Identify similarities between offspring and parents

Lesson 5
Plant Biomimicry
“Biomimicry” Quiz

1-LS1-1

Identify plant biomimicry

Lesson 6
Plant Life Cycle
“Plant Life Cycle” Quiz

1-LS1-2

Identify the patterns of life cycles

Lesson 7
Review

1-ESS1-1,
1-ESS1-2

Chapter 4 - Animals

Lesson 1
Animal World

1-LS1-1

Identify similarities and differences in animals

“Proximity Sensors” – build a circuit with a reed switch and a motor to see how proximity sensors for animal detection work

Lesson 2
Animal Life Cycles
“Animals” Quiz

1-LS1-2

Identify the patterns of life cycles

Lesson 3
Land Animal Structures
“Land Animals” Quiz

1-LS1-1

Identify animal body parts

“Motor” – build a circuit with a motor to see how a ceiling fan for a farmhouse works

Lessons

NGSS

Skills

E-Blox Projects

Lesson 4

Bird and Insect Structures
“Birds and Insects” Quiz

1-LS1-1

Identify bird and insect body parts

“Flying Fan” – build a circuit with a motor and a fan to understand how the fan launches

Lesson 5

Aquatic Animal Structures
“Aquatic Animals” Quiz

1-LS1-1

Identify aquatic body parts

“Animals and Magnets” – build a circuit with a reed switch and a 3-in-1 module to learn how some marine mollusks with magnetic teeth find a way back home

Lesson 6

Behavioral Adaptations
“Behavioral Adaptations” Quiz

1-LS1-1

Identify behavioral adaptations

Lesson 7

Inherited Traits

1-LS3-1

Identify similarities between offspring and parents

Lesson 8

Parent and Offspring Behavior
“Parents and Offspring” Quiz

1-LS1-2

Identify how parents protect offspring

Lesson 9

Review

1-LS1-1,
1-LS1-2

Chapter 5 - Engineering

Lessons

Lesson 1
Gathering Information
“Collecting Information”
Quiz

Lesson 2
Identifying Problems
“Identifying Problems”
Quiz

Lesson 3
Developing Solutions

Lesson 4
Comparing Solutions
“Developing and
Comparing Solutions”
Quiz

Unit Assessment

NGSS

K-2-ETS1-1

K-2-ETS1-1

K-2-ETS1-2

K-2-ETS1-3

Skills

Gather information

Use information to
identify a problem

Develop a solution
to a given problem

Compare the
strengths and
weaknesses of
possible solutions

E-Blox Projects

“Digital Logic - The “AND” Gate” -
build an “AND” gate circuit to
understand how a vending
machine works

“Digital Logic - The “OR” Gate” -
build an “OR” gate circuit to
understand how house doorbells
work

“Resistance” - build a circuit with
LEDs/lamps to see how a dimmer
button adjusts the brightness of
the lights in the room