

Throughout the Year

**COURSE:** Science Grade 1  
**UNIT:** The Scientific Method  
**CONTACT:** [athompson@bridgeportedu.net](mailto:athompson@bridgeportedu.net)  
**TIME FRAME:** Throughout the Year

**CODE:**  
**MAP LEVEL:** 4  
**GRADE:** 1

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## **PERFORMANCE STANDARDS**

### SCIENCE - SCIENTIFIC INQUIRY (I)

- A. INQ.1 Students will make observations and ask questions about objects, organisms and the environment.
  - A. INQ.2 Students will use senses and simple measuring tools to collect data.
  - A. INQ.3 Students will make predictions based on observed patterns.
  - A. INQ.4 Students will read, write, listen and speak about observations of the natural world.
  - A. INQ.5 Students will seek information in books, magazines and pictures.
  - A. INQ.6 Students will present information in words and drawings.
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## **ESS/FOCUS QUESTIONS**

What can be discovered by conducting a simple scientific investigation?

Why do scientists use a variety of methods of investigation?

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## **CONTENT**

### Scientific Inquiry

-Search out, describe, explain and predict natural phenomena.

### Scientific Process Skills

-Questions, hypothesis, predictions, planning, observations, interpretations, communicate

### Scientific Literacy

-Speaking, listening, presenting, interpreting, reading and writing about science.

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## **SKILLS**

Raise questions which can be investigated.

Hypothesize to provide an explanation based upon the evidence.

Predict using evidence from previous experiences.

Plan and conduct a scientific investigation.

Observe differences/similarities by making use of the senses.

Interpret and develop conclusions which summarize the evidence.

Communicate findings and present results in tables, graphs, or charts.

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## **ASSURED EXPERIENCES**

### Activity #1:

1-3 days should be spent on each of the following skills: use 5 senses, use instruments, classify into two groups, communicate data with oral, written words, pictures and graphs, make inferences and ask questions, make predictions, conduct science experiments.

### Activity #2:

Establish science notebooks/journals and have students draw and label pictures of things they study (e.g. seeds sprouting, leaves changing color). Students can use notebooks to increase their scientific vocabulary. In addition, the teacher can have words ready to cut and glue to use as labels.

### Activity #3:

Participation in the school science fair is required; individual, group, or class projects are acceptable.

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## **ASSESSMENTS**

### Formative Assessment

Conduct simple experiments using simple tools  
Keep science journal of observations and predictions made  
Record data on scientific investigations performed  
Tests  
Quizzes

### Summative Assessment

Students will draw themselves as a scientist.  
Illustrations must include what the student is studying and the use of two simple tools within the investigation

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## **OPTIONAL ACTIVITIES**

### Activity #1:

#### The Senses

Fill pairs of film canisters with different items- pennies, rice, beans, cotton balls, paper clips, etc. Have students shake and try to match sounds

### Activity #2:

#### Sorting Materials

Build students' observation and classifying skills with a collection of "collections" fill small plastic bags with common objects and let students work together to sort in different ways. Ideas: buttons (different shapes, colors, sizes, number of holes); bottle caps (sizes, colors, with or without text); keys (colors, shapes); plastic insects or reptiles (eye color, number of legs, wings or no wings, skin design); shells (colors, shapes, sizes, stripes)

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## RESOURCES

Harcourt Text

United Streaming:

'Stage One Science: Materials Made to Last'

'Sound: A First Look'

'Air: A First Look'

'Inquiring Minds: Illusions: More Than Meets the Eye'

'Math Monsters: Estimation'

Websites:

[www.harcourtschool.com](http://www.harcourtschool.com)

[www.discoveryschool.com](http://www.discoveryschool.com)

[www.sciencebob.com](http://www.sciencebob.com)

[www.nsta.org/ostbc](http://www.nsta.org/ostbc)

Science Literature:

What Do Scientists Do?, by Marcie Bovetz

My Five Senses, by Alike

What are Scientists? What do they do? Let's find out! by Rita Golden Gelman

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## ADDITIONAL NOTES

All students should maintain a science journal/notebook to record their data which may include observations, questions, summaries, charts, drawings.

Create a science word wall to house science vocabulary as the terms are introduced throughout the unit of study.

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## VOCABULARY

Classify	Investigation	Patterns
Compare	Length	Physical properties
Conclusion	Mass	Prediction
Data	Measure	Scientific method
Experiment	Observation	Simple tools (instruments)
		Volume

# The Motion of Object S



2<sup>nd</sup> Marking Period

**COURSE:** Science-Grade 1  
**UNIT:** The Motion of Objects  
**CONTACT:** [athompson@bridgeportedu.net](mailto:athompson@bridgeportedu.net)  
**TIME FRAME:** 2nd Marking Period

**CODE:** unassigned  
**MAP LEVEL:** 4  
**GRADE:** 1

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## PERFORMANCE STANDARDS

### SCIENCE - SCIENTIFIC INQUIRY (I)

- A. INQ.1 Students will make observations and ask questions about objects, organisms and the environment.
- A. INQ.2 Students will use senses and simple measuring tools to collect data.
- A. INQ.3 Students will make predictions based on observed patterns.
- A. INQ.4 Students will read, write, listen and speak about observations of the natural world.
- A. INQ.5 Students will seek information in books, magazines and pictures.
- A. INQ.6 Students will present information in words and drawings.

### SCIENCE - PHYSICAL SCIENCE (II, III, IV)

- A. 10 Students will describe the effects of pushes and pulls on the motion of objects.
- A.11 Students will describe the apparent movement of the sun across the sky during the day.

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## ESS/FOCUS QUESTIONS

How can we make objects move in different ways?

Why do moving objects sometimes change direction?

What is a shadow and how do they change?

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## CONTENT

Content Standard: 1.1

The sun appears to move across the sky in the same way every day, but its path changes gradually over the seasons. An object's position can be described by locating it relative to another object or the background. An object's motion can be described by tracing and measuring its position over time.

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## SKILLS

Communicate and make observations about moving objects

Predict an object's movement based upon size, shape, and the force required to push or pull the object

Classify the path that a moving object travels such as straight, curved, etc.

Conduct simple experiments to determine an object's movement, and record these movements (length/distance) using nonstandard units, illustrations, graphs, data tables, etc.

Describe how to make a shadow.

Create shadows using an object.

Analyze how shadows change as the direction of the light source changes.

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## **ASSURED EXPERIENCES**

Activity #1:

Sun and Shadows

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## **ASSESSMENTS**

Formative Assessment:

Students recorded observations of various moving objects, and utilize the appropriate scientific vocabulary when describing the movement of these objects.

Students recorded observations of the movement of a yo-yo and explain the two force that cause the toy to change its direction (push and pull).

Science journal/notebook

Summative Assessment:

Compare and contrast of two different objects in motion.

Have students record two ways the objects move in the same way and two ways the objects move in different ways. Objects should have a distinct difference, such as rolls straight (ball) or spins (top).

Investigations should be conducted which allow students to develop questions, observe and analyze shadows.

Describe observations of shadows pictorially and verbally.

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## **OPTIONAL ACTIVITIES**

Activity #1:

Have students make shadows in class. Match shadow with the objects they create. Model how to analyze how shadows change as the direction of the light source changes. Assist students with changing the direction of their light source. Have them describe and discuss the results.

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## **RESOURCES**

Harcourt Textbook

United Streaming :

'Simple Machines: A First Look'

'Discovering Simple Machines: Work and Energy'

'How Things Move'

'Science Facts and Fun: What's In a Shadow'

Websites:

[www.harcourtschool.com](http://www.harcourtschool.com)

[www.discoveryschool.com](http://www.discoveryschool.com)

[www.enchantedlearning.com](http://www.enchantedlearning.com)

[www.nsta.org/ostbc](http://www.nsta.org/ostbc)

Science Literature:

Forces and motion, by Petter Lafferty

Zigzag movement, by Lola Schaefer

Circular movement, by Lola Schaefer

Back and Forth, by Lola Schaefer

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## ADDITIONAL NOTES

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Create a science word wall to house science vocabulary as the terms are introduced throughout the unit of study.

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## VOCABULARY

Balance	Light	Push	Sun
Circular	Momentum	Roll	Surface straight
Curved	Motion	Rotate	Weight
Force	Objects	Shadows	Wheel
Friction	Path	Spin	
Gravity	Pull	Speed	

# properties of Plants and Animals



3<sup>rd</sup> Marking Period

**COURSE:** Science Grade 1  
**UNIT:** Properties of Plants and Animals  
**CONTACT:** [athompson@bridgeportedu.net](mailto:athompson@bridgeportedu.net)  
**TIME FRAME:** 3rd Marking Period

**CODE:**  
**MAP LEVEL:** 4  
**GRADE:** 1

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## **PERFORMANCE STANDARDS**

### SCIENCE - SCIENTIFIC INQUIRY (I)

- A INQ.1 Students will make observations and ask questions about objects, organisms and the environment.
- A INQ.2 Students will use senses and simple measuring tools to collect data.
- A INQ.3 Students will make predictions based on observed patterns.
- A INQ.4 Students will read, write, listen and speak about observations of the natural world.
- A INQ.5 Students will seek information in books, magazines and pictures.
- A INQ.6 Students will present information in words and drawings.

### SCIENCE - LIFE SCIENCE (V,VI,VII)

- A.12 Students will describe the different ways that animals, including humans, obtain air, water and food.
- A.13 Students will describe the different structures plants have for obtaining water and sunlight.
- A.14 Students will describe the structures that animals, including humans, use to move around.

### SCIENCE - SCI & TECH IN SOCIETY (XI)

- A.17 Students will estimate, measure and compare the size and weight of different objects and organisms using standard and nonstandard measuring tools.
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## **ESS/FOCUS QUESTIONS**

Why do plants and animals (including humans) need their different parts?

How do coverings, body shape, appendages and movement help animals to survive?

How would plant and animals be affected by different amounts of air, food, water, and shelter?

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## **CONTENT**

Content standard: 1.2

Living things have different structures and behaviors that allow them to meet their basic needs. Animals need air, water and food to survive. Plants need air, water and sunlight to survive.

Content standard 1.4:

The properties of materials and organisms can be described more accurately through the use of standard measuring units. Various tools can be used to measure, describe and compare different objects and organisms.

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## **SKILLS**

Identify the basic needs of plants and animals.

Classify plants by characteristics of edible/nonedible, flowering/nonflowering, and evergreen/deciduous using tables, charts, and picture graphs.

Conduct simple investigations related to the needs of plants by changing one variable (food, air, water, light, and environment) at a time.

Create and interpret a model/drawing of a plant, including seeds, roots, stems, leaves, blossoms, and fruits.

Identify the functions of the seed, root, stem, and leaf.

Make observations of animals and their needs, physical characteristics and where they live.

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## **ASSURED EXPERIENCES**

Activity #1:

Students plant seeds and observe, measure, and record their growth.

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## **ASSESSMENTS**

Formative Assessment:

Have the students observe plant growth and record observations in science notebook/journal.

Require students to classify animals based upon characteristics.

Student illustrations should reflect labels of their plants at various stages.

Communicate what they are giving their plants and why (ex. I gave my plant 1/4 cup of water because the soil was dry and plants need water to grow)

Summative Assessment:

Students should draw an animal of their choice and label the animal, their needs, their body parts and how they move.

Test/Quiz

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## **OPTIONAL ACTIVITIES**

Activity #1:

Students may select different animals, and then illustrate them with their coverings (feather, skin, fur, scales, hair, shell, etc.)

Activity #2:

Students may select an animal and write a riddle to share with the class about that animal. The riddle should include information about the animal's shelter, food, and movement.

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## **RESOURCES**

Harcourt Text

United Streaming:

All About Animals: Insects

Debbie Greenthumb, How Plants Grow  
Debbie Greenthumb, Plants can be Found Everywhere  
Debbie Greenthumb, The Importance of Plants to Our World

Websites:

[www.harcourtschool.com](http://www.harcourtschool.com)  
[www.discoveryschool.com](http://www.discoveryschool.com)  
[www.nsta.org/ostbc](http://www.nsta.org/ostbc)

Science Literature:

*Scholastic's The Magic School Bus explores the world of animals*, by Nancy White  
*What's Inside Plants?* by Anita Ganeri  
*Plants and Life*, by Morgan Sally

Video:

The Magic School Bus Plants Seeds

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### **ADDITIONAL NOTES**

All students should maintain a science journal/notebook to record their data which may include observations, questions, summaries, charts, drawings.

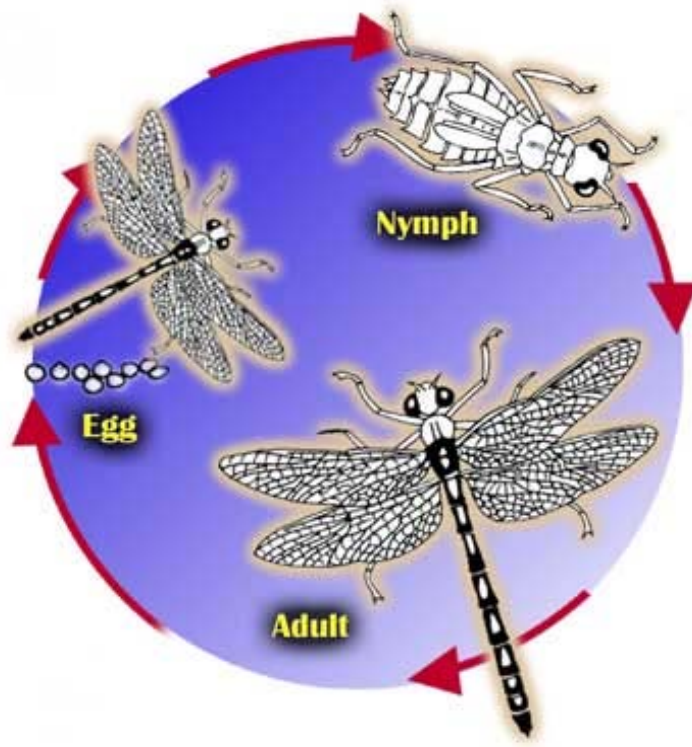
Create a science word wall to house science vocabulary as the terms are introduced throughout the unit of study.

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### **VOCABULARY**

Amphibian	Evergreen	Mammal	Shelter
Bird	Fish	Movement	Stems
Blossom	Flowers	Needs	Sunlight
Body coverings	Food	Non-edible	Tame
Characteristics	Fruit	Nonliving	Water
Cycle	Habitat	Petals	Wild
Deciduous	Insect	Reptile	
Decomposer	Leaves	Roots	
Edible	Living	Seeds	

# Lifecycles of animals



Dragonfly

4<sup>th</sup> Marking Period

**COURSE:** Science Grade 1  
**UNIT:** Life Cycles of Animals  
**CONTACT:** [athompson@bridgeportedu.net](mailto:athompson@bridgeportedu.net)  
**TIME FRAME:** 4<sup>th</sup> Marking Period

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**CODE:**  
**MAP LEVEL:** 4  
**GRADE:** 1

## **PERFORMANCE STANDARDS**

### SCIENCE - SCIENTIFIC INQUIRY (I)

- A INQ. 1 Students will make observations and ask questions about objects, organisms and the environment.
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- A INQ. 3 Students will make predictions based on observed patterns.
- A INQ.4 Students will read, write, listen and speak about observations of the natural world.
- A INQ 5 Students will seek information in books, magazines and pictures.
- A INQ 6 Students will present information in words and drawings.

### SCIENCE - LIFE SCIENCE (V, VI, VII)

- A. 15 Students will describe the changes in organisms such as frogs and butterflies as they undergo metamorphosis.
  - A. 16 Students will describe the life cycles of organisms that grow but do not metamorphose.
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## **ESS/FOCUS QUESTIONS**

How do animals change throughout their life cycle?

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## **CONTENT**

Content Standard: 1.3

Organisms change in form and behavior as part of their life cycles. Some organisms undergo metamorphosis during their life cycles; other organisms grow and change, but their basic form stays essentially the same.

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## **SKILLS**

Describe changes in the life cycle of a frog and butterfly.

Compare and contrast the life cycle of a frog and butterfly.

Recognize animals that grow, but do not metamorphose.

Construct and interpret models/diagrams of animal life cycles.

Use non-standard measurements to record the differences in growth throughout an animal's life cycle.

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## **ASSURED EXPERIENCES**

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## **ASSESSMENTS**

KWL

Class created science rubric

Science Notebook

Teacher observation

Models/diagrams of animal life cycles

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## **OPTIONAL ACTIVITIES**

Activity #1:

In this activity students are provided with an opportunity to sequence the life cycle of a frog, and convey their level of comprehension related to the life cycle of a frog. Place children in groups and have them illustrate one part of the cycle. Give each group a piece of white paper that is labeled with their particular part in the sequence/cycle. Have children spread out in the room to complete their pictures. Have a member of each group come to the front of the room and communicate their part of the life cycle to the audience. When all presenters are done, hang and display the finished sequence in the room.

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## **RESOURCES**

Harcourt Text

United Streaming :

'Animal Lifecycles'

'The Caterpillar and the Polliwog'

'Junior Zoologist: Fish, Amphibians, and Reptiles'

'Farm Animals: A First Look'

'In the Small, Small Pond'

Websites:

[www.harcourtschool.com](http://www.harcourtschool.com)

[www.discoveryschool.com](http://www.discoveryschool.com)

[www.spiderroom.info/life cycles.html](http://www.spiderroom.info/life%20cycles.html) (Life cycle of a spider)

[www-ed.fnal.gov/projects/frogs/](http://www-ed.fnal.gov/projects/frogs/). (Web site about frogs)

[www.nsta.org/ostbc](http://www.nsta.org/ostbc).

Science Literature:

The Very Clumsy Click Beetle, by Eric Carle

Fabulous Frogs, by Linda Glaser  
A Ladybug's Life, by John Himmelman  
A Luna Moth's Life, by John Himmelman  
See How They Grow: Frogs, by Kim Taylor

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### **ADDITIONAL NOTES**

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### **VOCABULARY**

Animal	Egg	Metamorphosis
Birth	Food	Needs
Butterfly	Frog	Life cycle
Caterpillar	Larva	Pupa
Change	Larvae	Stage
Chrysalis	Mature	Tadpole
		Young