

Ledyard Public Schools

Grade K Science Curriculum

Unit of Study: PHYSICAL

Time: September-November

Content Standard K.1 Objects have properties that can be observed and used to describe similarities and differences.

- Some properties can be observed with the senses, and others can be discovered by using simple tools or tests.

Essential Questions:

How do we use our senses to learn about our world?

How do we use tools to learn about our world?

Focus Question #1 How can we describe objects?

Focus Question #2 How can we sort objects?

Expected performances (A1) The student will be able to:

- a. name the five senses and tell what each sense is used for.
- b. use his/her senses to observe and describe the color, shape, size, or weight of objects.
- c. use simple measuring tools, such as equal-arm balances, to observe and describe properties of common objects. (also use nonstandard units, such as paper clips, color tiles, etc. to measure length) [Math: GM3.3 b3, b.5]
- d. sort and compare objects by their color, shape, size, or weight. [Math: GM3.1 a1, AR1.1 a1]

Expected performances (A2) The student will be able to:

- a. explain that different objects are made up of many different types of materials (e.g. cloth, paper, wood, metal, plastic, glass).
- b. sort objects made of different types of materials based on properties (e.g. flexibility, attraction to magnets, whether they float or sink in water).

Expected performances (A3) The student will be able to:

- a. count objects in a group and use mathematical terms and comparative language to describe quantitative relationships such as: same as, more than, less than, equal to, tall, taller, tallest, etc. [Math: GM3.1 a1, NPR2.1 a1, a3, NPR2.2 a1, a3]

Required Activities:

Engage: Read and discuss the following books: *My Five Senses*, *Using Your Senses at School*, *A Surprise for Jake*, *I Love the Beach*. Students should be able to name the five senses and tell what each sense is used for. (A1a)

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1. Students use sorting rings and pictures from Senses Sorting Cards to sort objects associated with each of the senses. (A1a)
2. Students use attribute blocks to sort by color, shape and size and state the rule used for each sort. (A1d)
3. Students use a balance to compare objects by weight. (A1b, c)
4. Students use non-standard units to measure and compare by length. (A1c)
5. Using a Discovery Box containing objects made from cloth, paper, wood, metal, plastic, glass, etc., students sort by texture and composition. (A2a)
6. Students explore common objects and test for flexibility, attraction to magnets, and flotation. Students record their results on sorting charts and produce a written response as to what they have found out.
(see appendix items K.1.c, K.1.d, K.1.e) (A2b)
7. Teacher focuses on counting and use of comparative language while students are involved in classroom activities such as real graphs, weather graphs, entry graphs, and people sorting. (A3a)
8. Students conduct tally survey (appendix K.1.f) and bar graph survey (see appendix K.1.g) (A3a)

Optional Activities:

Read *What Can it Be? Riddles about Senses*. Have each student create a five senses written response riddle
(see appendix K.1.j)

Brainstorm words to describe the properties in the Discovery Box and create a Five Senses Word Wall.

Students compare two objects in a follow-up writing activity (see appendix K.1.k)

Assessment:

1. Use sorting assessment #1 in Math Assessment Binder (see appendix K.1.a)
2. Name five senses and tell what each is used for (see appendix K.1.b)
3. Use sorting charts and written response from Activity 6
4. Use pictograph assessment #3 in Math Assessment Binder (see appendix K.1.h)

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Vocabulary to Highlight

senses, sight, hearing, taste, touch, smell

color, size, shape, weight

magnetic

sink, float

flexible (bendable)

Resources Needed:

Wooden Tripod Magnifier

Exploring the 5 senses sorting cards

Classroom Magnet Set

My 5 Senses Big Book by Alik

Sink or Float Big Book

Using your Senses at School

A Surprise for Jake

I Love the Beach

Smaller Than, Bigger Than

Delta

Constructive Playthings

Kaplan

Amazon

Newbridge

National Geographic

National Geographic

National Geographic

Benchmark Education Co.

Content Standard K.2 Many different kinds of living things inhabit the earth.

- Living things have certain characteristics that distinguish them from nonliving things, including growth, movement, reproduction and response to stimuli.

Essential Questions:

How do we know something is living or nonliving?
What kinds of living things are on earth?

Focus Question #1 What do living/non-living things look like?

Focus Question #2 What do living things do?

Expected performances (A6) The student will be able to:

- a. use senses and simple tools, such as magnifying glasses, to make observations of living and nonliving things.
- b. describe characteristics that distinguish living from nonliving things. (Living things need food, water and air, grow and change, and make new living things. Non-living things do not need food, water or air, grow and change, or reproduce.)

Focus Question #3 How do we group living things?

Expected performances (A4) The student will be able to:

- a. organize and categorize living things [i.e., plants, mammals (including humans), birds, fish, and insects] by comparing a variety of common features.
[Math AR1.1 a1]

Focus Question #4 How are adult organisms like their young?

Focus Question #5 How are adult organisms different from their young?

Expected performances (A5) The student will be able to:

- a. observe parents and offspring and conclude that offspring tend to resemble their parents and that individuals of the same species have variations.
- b. describe similarities and differences in the appearance and behaviors of adults and their offspring.

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Required Activities:

Engage: Teacher introduces the unit with three mini-books: *Alive or Not Alive?* *What's Alive?* *Needs of Plants and Animals.* Students brainstorm a list of things that are living and non-living.

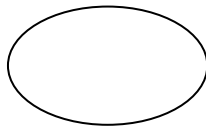
Living	Non-living

1. In small groups, students use sorting rings and sets of objects (from Primary Concepts Super Sort and Count Kit.) to sort objects into 2 groups: living and non-living. (A6a, b)

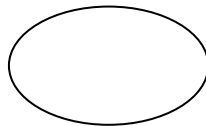
Each time the student chooses an object, he/she asks the following four questions when figuring out how to sort each item:

- Does it need food and water?
- Does it need air?
- Does it grow and change?
- Can it make a new living thing that is like itself?

The student then places the object into the correct ring.



living

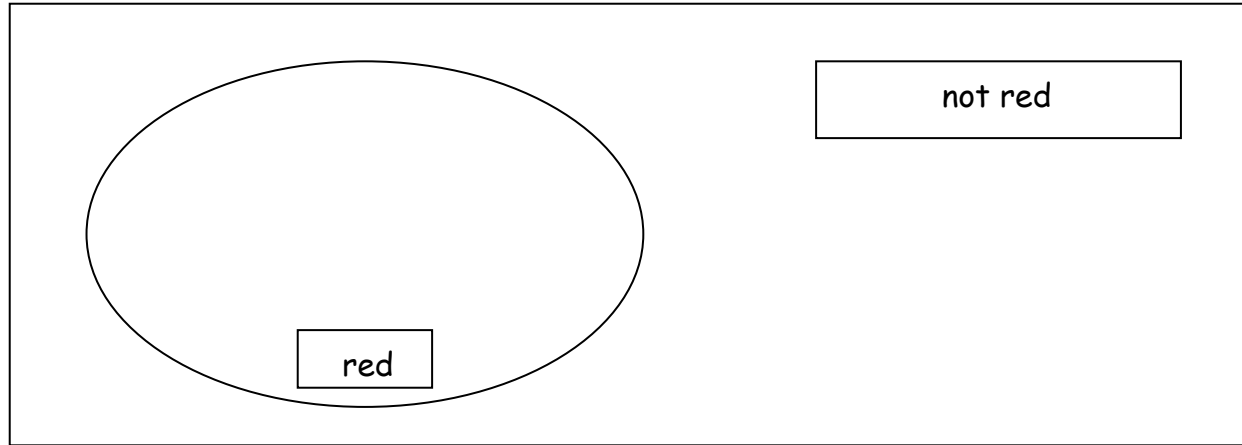


non-living

Teacher note: *You may want to pre-select items from the sorting kit.*

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2. Students categorize a set of objects by one attribute. (Use objects from Primary Concepts Super Sort and Count kit) Whole group activity. (A4a)



3. In small groups, students use objects in sorting kit several different ways to practice organizing and categorizing. (A4a)

Required sorts: plants / animals
bird / fish / insect
oviparous / mammals

Optional sorts: domestic / wild / both
little / big
land / sea

Teacher note: You may want to supplement the sorting objects or put in only certain ones for each sorting task.

4. Teacher reads *Animal Babies* to the whole class. (A5a)
5. Using Photographic Animal Cards (Carson Dellosa), students ask, Do the parent and animal baby look alike? How are they different from the parent? (A5b)

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6. Students sort animals by appearance and behaviors. (A5a, b) Example may include:
 - feathers / no feathers
 - fur / skin
 - 2 legs / 4 legs
 - jungle / forest / desert / ocean
 - hot climate / cold climate
 - large / small
 - resemble parents / does not resemble parents
 - roars / does not roar
7. In small groups, students play Memory Matching game “Who’s My Baby?” (by Carson Dellosa) (A5b)

Assessment:

1. Individual written recording sheet from Activity 1 (see appendix K.2.a)
2. Students individually complete a Where Does It Live? Booklet (see appendix K.2.d)
3. Students fill in animal chart to organize what they have learned (see appendix K.2.e)

Optional Activities:

Set up a science center with a large magnifying glass and several objects. A recording paper (see appendix K.2.b) can also be added.

Students play “My Grandma is Weird” (see appendix K.2.c)

Mom and Baby display / Bulletin board: Ask parents to send in anything (examples: stuffed animals, porcelain or clay figurines, pictures, etc.) that shows a mother / baby pair. Students can label each, such as elephant / calf.

Make a Mothers’ Day project with an animal + baby theme.

Presentation on Animal Babies

Ex: Bob Dewire: have him come as a culmination to this unit. Instead of his usual “Animal Homes” theme, ask him to discuss the “Parent / offspring” ideas as he did for LCS in 2007. He also discussed “signs of spring” with the animals.

Art Teacher: Directed drawing of “mother + baby” pairs

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Vocabulary to highlight

Living, non-living

Plant

Mammal, bird, fish, insect

Parent, offspring (or young or baby)

Resources Needed:

Who's My Baby? Memory matching game

Favorite animals / photographic learning cards

Super Sort and Count

What Comes From Nature?

What's Alive?

Alive or Not Alive

Animal Babies

Growing and Changing

Needs of Plants and Animals

Carson Dellosa

Carson Dellosa

Primary Concepts

Newbridge

Newbridge

Newbridge

Amazon

Pearson/Scott Foresman

Pearson/Scott Foresman

Grade K Science Curriculum

Unit of Study: EARTH

Suggested Time: Ongoing all year

Content Standard K.3 Weather conditions vary daily and seasonally.

- Daily and seasonal weather conditions affect what we do, what we wear, and how we feel.

Essential Questions:

How can we describe the weather each day?
How does the weather change throughout the year?
How does the weather affect how we live?

Focus Question #1 How can we keep track of the weather?

Expected performances (A7) The student will be able to:

- record daily temperature. [MATH GM3.3 b3]
- describe and record daily weather conditions (e.g. sunny, cloudy, rainy, snowy, windy). [MATH WD 4.1 a2, a3]
- explain that short-term weather conditions (e.g. temperature, rain, snow) can change daily.

Focus Questions#2: What is the weather like during each season?

Expected performances (A8) The student will be able to:

- describe what seasons exist where we live.
- compare changes in weather patterns (e.g. temperature and precipitation) throughout the seasons.
- relate seasonal weather patterns to appropriate choices for clothing and activities.

Required Activities:

- Daily calendar activities:
 - ▶ use a weather bar graph to discuss and record the weather conditions daily (see appendix K.3.a)
 - ▶ sing weather songs (see appendix K.3.b)
 - ▶ record the temperature each day. Use the digital outdoor thermometer and transfer the reading to the demonstration thermometer with kindergarten picture key (see appendix K.3.c)Optional: build a line graph or bar graph charting daily temperature.

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2. Students will describe the seasons.
 - ▶ Begin in late September when the seasons are changing. Read *The Seasons of Arnold's Apple Tree* and *Bear's Busy Year* for an overview of the seasons.
3. Create a class display (possibly a tree) that will change with the seasons.
4. Create monthly banners or class scrapbooks with the weather charts from previous months. (You can include birthday cakes, lost teeth, and other monthly records from calendar activities). Students use these to compare seasonal changes in the weather.
5. Use the "Weather Bear" magnetic board during daily calendar activities. Students relate appropriate clothing choices for outdoor activities. Display completed work with the seasonal tree or create a class book or individual book

Assessment:

1. Teacher observation during daily calendar activities
2. Teacher reads *In Fall* and/or *How Do You Know It's Fall?* Each student creates a written or picture response. For example: complete the sentence, "Fall is....." (Display completed work with the seasonal tree or create a class or individual book.)
3. Revisit class display and update at the change of each season, for example: "Winter is..." or "In the winter I..." Use other books in the seasons series.

Optional Activities:

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Vocabulary to Highlight

Weather

Temperature

Seasons

Winter

Spring

Summer

Fall

Resources Needed:

Magnetic weatherboard

Demo. Thermometer

Wireless Indoor/Outdoor Thermometer

Bear's Busy Year: A Book About Seasons

Weather and Seasons

Seasons of Arnold's Apple tree

In Fall

In Winter

In Spring

In Summer

How Do You Know It's Fall

How Do You Know It's Spring

How Do You Know It's Summer

How Do You Know It's Winter

Kaplan

Fisher Elementary Science

L. L. Bean

Amazon

National Geographic

Amazon

Newbridge

Newbridge

Newbridge

Newbridge

Scholastic

Scholastic

Scholastic

Scholastic

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Unit of Study: SCIENCE AND TECHNOLOGY IN SOCIETY

Suggested Time: April - May

Content Standard K.4 Some objects are natural, while others have been designed and made by people to improve the quality of life.

- Humans select both natural and man-made materials to build shelters based on local climate conditions, properties of the material and their availability in the environment.

Essential Question: How do people use materials to make life better?

Focus Question #1: What are natural materials?

Focus Question #2: What are man-made materials?

Focus Question #3: Why do people choose certain materials to build shelters?

Expected performances (A9) The students will be able to:

- a. identify both natural and man-made materials used to build shelters.
- b. explain how climate conditions and environmental availability affect decision making when building shelters.
- c. describe how the properties of materials make them useful and appropriate for building shelters.

Required Activities:

Engage students by reading *The Three Little Pigs* and then make comparisons as you read *The Three Little Rigs*.

1. Discuss the following vocabulary: shelter, man-made or human-made materials, and natural materials. Use the book *How A House Is Built* to help describe these words more fully. Create a chart together:

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Man-made Materials	Natural Materials

2. Read and discuss the book *The Big Bad Pig and the Three Little Wolves*. Students focus on the types of materials being used to make each house. Discuss the sturdiness of the house, etc.
3. Read *This is My House* by Arthur Dorrof to discuss the various types of homes that are built according to the climate conditions and environment.

Assessment:

Students respond in writing to a prompt using a framed paragraph, draw a picture of their house, and decide whether their building material is natural or man-made. (See appendix K.4.a)

Optional Activities:

Vocabulary to Highlight

natural materials

man-made materials

shelter

Resources Needed:

How a House is Built

Scholastic

The Three Little Pigs by Paul Galdone

Amazon

The Three Little Rigs by David Gordon

Amazon

The Three Little Wolves and the Big Bad Pig

Amazon

Curriculum Alignment with CT Standards for Scientific Inquiry, Literacy and Numeracy

GRADES K PHYSICAL

Expected Performances		Required Activities	Sort Pictures and Blocks	Use Balance	Use Non-Standard - Length	Sort by Texture	Test – Float, Flexible, Magnetic	Survey – Tally, Bar Graph
AINQ. 1	Make observations and ask questions about objects, organisms and the environment.		X			X	X	
AINQ. 2	Use senses and simple measuring tools to collect data.			X		X	X	
AINQ. 3	Make predictions based on observed patterns.						X	
AINQ. 4	Read, write, listen and speak about observations of the natural world.					X	X	
AINQ. 5	Seek information in books, magazines and pictures.							
AINQ. 6	Present information in words and drawings.						X	
AINQ. 7	Use standard tools to measure and describe physical properties such as weight, length and temperature.			X				
AINQ. 8	Use nonstandard measures to estimate and compare the sizes of objects.				X			
AINQ. 9	Count, order and sort objects by their properties.		X			X		
AINQ. 10	Represent information in bar graphs.							X

Curriculum Alignment with CT Standards for Scientific Inquiry, Literacy and Numeracy

GRADES K EARTH

Expected Performances		Required Activities	Daily Calendar Activities	Description of Seasons	Changing Seasons	Weather Bear Activity
AINQ. 1	Make observations and ask questions about objects, organisms and the environment.		X	X	X	X
AINQ. 2	Use senses and simple measuring tools to collect data.		X	X		
AINQ. 3	Make predictions based on observed patterns.		X	X	X	
AINQ. 4	Read, write, listen and speak about observations of the natural world.		X	X	X	
AINQ. 5	Seek information in books, magazines and pictures.			X	X	
AINQ. 6	Present information in words and drawings.		X	X	X	X
AINQ. 7	Use standard tools to measure and describe physical properties such as weight, length and temperature.		X			
AINQ. 8	Use nonstandard measures to estimate and compare the sizes of objects.					
AINQ. 9	Count, order and sort objects by their properties.					
AINQ. 10	Represent information in bar graphs.		X			

Curriculum Alignment with CT Standards for Scientific Inquiry, Literacy and Numeracy

GRADES K LIFE

Expected Performances		Required Activities					
		Sort – Living vs. Non-Living	Sort by One Attribute	Sorting in Different Ways	Parent / Baby – Alike / Different	Sort / Resort	Game – Who’s My Baby?
AINQ. 1	Make observations and ask questions about objects, organisms and the environment.	X	X	X	X	X	X
AINQ. 2	Use senses and simple measuring tools to collect data.						
AINQ. 3	Make predictions based on observed patterns.	X	X	X	X		
AINQ. 4	Read, write, listen and speak about observations of the natural world.	X	X	X	X	X	X
AINQ. 5	Seek information in books, magazines and pictures.				X		X
AINQ. 6	Present information in words and drawings.	X	X	X	X	X	
AINQ. 7	Use standard tools to measure and describe physical properties such as weight, length and temperature.						
AINQ. 8	Use nonstandard measures to estimate and compare the sizes of objects.						
AINQ. 9	Count, order and sort objects by their properties.	X	X	X		X	
AINQ. 10	Represent information in bar graphs.						

Curriculum Alignment with CT Standards for Scientific Inquiry, Literacy and Numeracy

GRADES K STS

Expected Performances		Required Activities			
		Compare Two Texts	Describe Vocabulary	Types of Building Materials	Home According to Climate
AINQ. 1	Make observations and ask questions about objects, organisms and the environment.	X		X	X
AINQ. 2	Use senses and simple measuring tools to collect data.				
AINQ. 3	Make predictions based on observed patterns.	X			
AINQ. 4	Read, write, listen and speak about observations of the natural world.	X	X	X	X
AINQ. 5	Seek information in books, magazines and pictures.	X	X	X	X
AINQ. 6	Present information in words and drawings.		X	X	X
AINQ. 7	Use standard tools to measure and describe physical properties such as weight, length and temperature.				
AINQ. 8	Use nonstandard measures to estimate and compare the sizes of objects.				
AINQ. 9	Count, order and sort objects by their properties.				
AINQ. 10	Represent information in bar graphs.				