

Kolbe Academy Home School

GRADE TWO SCIENCE

Harcourt Science 1/2 (Yellow)

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Teacher's Notes: Begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial. In most cases, Fridays have been left open. You may do a four day week or use Friday as a "catch-up" day. While art and music should be worked in during the week, Friday is also a good day to concentrate on those subjects.

Your student may not need all of Week 8 for review. You can use this time to catch up if necessary and then go over the subject matter. If you intend to use the sample tests provided, look them over before teaching the subjects and make sure you teach the material in the tests. Some children have a difficult time doing written exams, but it is important for them to learn how to take them. If your second grader does poorly on them, give them to him orally a couple of days after he has taken them and average the grades.

COURSE TITLE: Science

COURSE DESCRIPTION:

Second grade science continues the basic introduction to the life, earth, and physical sciences. The most important part of teaching science in the early years is helping the student see the wonders of God's world, and making him unafraid of the subject when he pursues science in more depth later. Children learn more from doing the experiments and investigations alongside the reading of the textbook.

The Harcourt Science series has the availability of several online learning tools to anyone who purchases the textbook. The first is provided by the publisher, Harcourt. Simply go to www.harcourtschool.com and click on the Learning Site. This will take you to a login page in which you will be instructed how to gain access to the site. *Be sure to put Kolbe Academy as the school!* This will help create fewer problems when you are trying to gain access to the website. There are several supplementary activities for the student and teacher on this website. Another website is provided by the National Science Teachers Association (NSTA) at www.scilinks.org/harcourt. This website allows you to select the topic you are studying in the book, and will take you to a page of selected website links that can help you to enhance and further develop the topics that your child is studying. Be sure to select **Grade 2** to see the topics that correspond to the book you are using. The online resources are a wonderful addition to the activities provided within the text itself.

COURSE OBJECTIVES:

This course is a continuation of the work of the first grade in the further development of scientific skills necessary to apply the scientific method:

- ❖ the observation and examination of data
- ❖ experimentation
- ❖ formulations of explanations by means of hypotheses and theories
- ❖ testing the hypotheses

Introduction to scientific concepts

- ❖ introduction to basic science vocabulary in preparation for later coursework
- ❖ introduction to the three main disciplines in science: life, earth, and physical science

SCOPE AND SEQUENCE:

Kolbe Academy uses the 2nd, 4th, and 6th grade books from the Harcourt series over the course of 6 years. This allows students to be introduced to the several topics in science but not to be bogged down in the elementary years. The second grade lesson plans, therefore, take the parent through Units B, D, and F of the Harcourt Science 2nd grade book, covering the following topics:

1. **Life Science:** Homes for Living Things
 - a. Habitats for Plants and Animals
 - b. Changes in Habitats
2. **Earth Science:** Space and Weather
 - a. The Solar System
 - b. Earth's Weather

3. **Physical Science:** Energy in Motion
- Forces and Motion
 - Hearing and Sound

SKILLS TO BE DEVELOPED:

- ❖ Observation and forming of hypotheses
- ❖ Keeping accurate notes
- ❖ Analyzing scientific data accurately
- ❖ Measuring with precision
- ❖ Drawing conclusions
- ❖ Reporting findings

INVESTIGATION MATERIALS:

The following are a list of the harder to find materials used in the corresponding investigations throughout the course. If at any point finding the materials becomes a hardship, the parent should feel free to skip the investigation for that week.

Material	Investigation Page Number
Magazines and/or catalogs with pictures of animals and their habitats to be cut out, glue, crayons, paper, and pencil	B4, B8
Lettuce leaves	B 14
Construction paper –black and red, clock or timer	B 20
Birdseed, berries	B 28
Seeds, 2 paper plates, paper towels, spray bottle	B 40
Box, soil, trowel	B 46, B 62
Used items, markers or paint, glue, newspaper	B 52
Petroleum jelly	B 63
Earthworms	B 62
Paper cups, flashlight, black paper, tape	D 4, D 24
Foam ball, lamp	D 18, D 24
Foil	D 24
Markers	D 36
2 zip-top bags, food coloring, tape	D 42
Thermometer	D 46
Weather picture cards, clothing picture cards (can be cut from magazines)	D 52
2 bar magnets	F 12
A board, 6 books, a meterstick or yardstick, a toy truck	F 18
Ruler	F 31
Rubber bands, box lid	F 46

COURSE TEXT: *Harcourt Science, 2nd Grade* (Copyright 2005), Yellow book with frog on cover.

COURSE PLAN METHODOLOGY: *Harcourt Science* is represented by the abbreviation **HAR**. Each weekly assignment is summarized in the first line of the week’s daily course plan. The specific daily assignments are outlined in the following lines indicated by the **TUES** and **THUR** abbreviations.

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify these course plans to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly.**

◆◆◆ FIRST QUARTER ◆◆◆

WEEK 1		
Throughout the year, there will be several opportunities for hands-on scientific investigations. These investigations will be a wonderful tool for understanding the material in each lesson. This week the students will concentrate mainly on reading about the processes involved in making a proper scientific investigation.		
HAR	Pages *10-*24.	Goals: To learn about how scientists work.
TUES	Read Pages *10-*17. Go over the steps of the scientific method with the student before beginning any investigations. You may choose to do the paper towel experiment outlined on these pages if you wish. These pages give good examples of the scientific method in action.	
THUR	Read Pages *18-*24. Explain the importance of learning to read well. You may have to help with reading the material. The student should begin to write about some of the investigations he does. On page *24 go carefully over the “Science Safety” section. Instill in the child the importance of following your directions in every investigation done, not only for safety’s sake but also to arrive at correct conclusions. Give the child time to look through the book and become excited about it.	
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">Notes</div>		
WEEK 2		
◆◆◆ UNIT B: Homes for Living Things ◆◆◆		
HAR	Chapter 1 Lesson 1	Habitats for Plants and Animals. In every lesson, go over the vocabulary with the student, giving him a good understanding of the terms. The student should know that a habitat is the place where an animal finds the food, water, and shelter it needs for survival, and realize that there are different habitats for different animals. God created all things and made a healthy place in which they can live. The student should be made aware that God created science and they cannot conflict. Plants grow and provide food for all living things. Animals eat plants and other animals. The food chain is part of God’s plan for the survival of His creation—Divine Providence.
TUES	Read page B2-B7 with the child--Where Animals Live. (Most second graders will need help reading the text. Encourage independence in reading as the year continues.) Have the student orally answer the questions marked with a red square in the text. Help the student to always answer the	

	<p>questions in complete sentences. On page B6 the bear is fishing for food, and the cougar is drinking water. All living things need food and water. On B7 the grebe is sitting on its nest of eggs; the sea otter is eating a sea urchin; and, the pelican is eating a fish. Discuss 'Think About It'.</p> <ol style="list-style-type: none"> 1. A habitat is the place where animals find the food, water and housing they need in order to live. 2. Different animals have different habitats to meet their own special needs.
THUR	<p>Do the investigation on page B4. This gives a good opportunity for students to begin at a very early age to give oral presentations. These can be done to family, friends, or both. Help the child to formulate and give his presentation in complete sentences.</p>

Notes

WEEK 3

HAR	<p>Chapter 1 Lesson 2</p>	<p>Different Land Habitats. The student will learn about the different habitats of the world and some of their inhabitants. He should be able to explain different kinds of land environments and habitats found in them, and give examples of how animals meet their needs in the land habitats in which they live.</p>
TUES	<p>Read page B9-13 with the child—Different Land Habitats. Have the student orally answer the questions marked with a red square in the text. On page B10 the cactus stores water in its stem; the owl is using the cactus for shelter; and the Gila monster is getting food and water from the eggs. On page B11 the animals are meeting their need for food, shelter, and water. On page B12 the woodpecker is eating the insects in the tree, and the raccoons are using the hole in the tree for shelter. On page B13 discuss 'Think About It'.</p> <ol style="list-style-type: none"> 1. Each land environment is alike because animals have habitats in them. They are different because some have hot weather and some have cold. Some get a lot of rain and some get practically none. Some environments are hot part of the year and cold at other times. 2. Animals meet their needs in their land habitats because they are able to find the food, water, and shelter they need in order to live. 	
THUR	<p>Do the investigation on page B8.</p>	

Notes

WEEK 4

HAR	<p>Chapter 1 Lesson 3</p>	<p>Different Water Habitats. The student should be able to explain different kinds of water environments and habitats found in them, and give examples of how animals meet their needs in the water habitats in which they live.</p>
TUES	<p>Read page B15-19 with the child—Different Water Habitats. Understand that some animals live around water habitats and others live in them. Some need fresh water and some need salt water. God provides all the animals need in these habitats. On page B17 the spider takes a bubble of air underwater so it can breathe. Discuss 'Think About It'.</p> <ol style="list-style-type: none"> 1. There are freshwater habitats on the edge of ponds, in logs or dens on the banks of ponds, and some on top of or under the water in a pond. 	