Kolbe Academy
Home School

GRADE SEVEN
SCIENCE
Holt Science and Technology: Earth Science

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Science
Grade 7

COURSE TITLE: Science

COURSE TEXT: *Holt Science and Technology Earth Science* (2007), (T4827)
Kolbe Academy Answer Key for Holt Earth Science, (T4827A), optional

COURSE DESCRIPTION:

This course covers topics in geology, hydrology, oceanography, meteorology, and astronomy. There are several website resources that correspond with the Holt Science and Technology series. Extra internet activities are indicated within the textbook margins as "Internet Activity" with the go.hrw.com website referenced. These are extra activities for students who are interested in the subjects being covered in that section. The National Science Teachers Association has provided a centralized place for added information on topics that appear in the textbook. The codes for linking to these topics on the www.scilinks.org website are located at the end of every section within the Section Review questions.

The topics in the field of Earth Science sometimes present students and parents with controversial issues, including the origin of life on earth, formation of the universe (cosmology), and other issues. It is up to the parents as first teachers of their children to discuss these issues with their students and instruct the students in Church teaching. We have done our best to point out these controversial issues and to provide guidance on how to address them. For example, the topic of the Big Bang is studied in Quarter 4, Week 4, but Church teaching on this issue is addressed within the course plan.

In general, this course is meant to be a survey of all the topics in an Earth Science course. As such, it does not have the necessary depth for a high school level Earth Science course. High school credit, therefore, is not available for this middle school Earth Science course. Students are advised to take this course either in 7th or 8th grade prior to beginning any Physical Science course.

SCOPE AND SEQUENCE:

1. Introduction to Earth Science: Maps of the Earth
2. Earth's Resources: Minerals, Rocks, Energy Resources, Fossils
3. The Restless Earth: Earthquakes, Volcanoes
4. Reshaping the Land: Flow of water, erosion, deposition
5. Oceanography: Ocean structure and life, movement of ocean water
6. Weather and Climate: atmosphere, storms, forecasting, climate
7. Astronomy: studying space, stars, galaxies, the Universe, formation of the solar system, planets

COURSE PLAN "AT A GLANCE" OUTLINE:

Please note that many chapters are not covered in their entirety. Refer to the course plan that follows for specific guidance. Also, note that there are 8 examinations included instead of the typical 4 quarterly exams.

Quarter 1
- Weeks 1-3: Chapters 1-2
- Week 3: Exam 1
- Weeks 4-9: Chapters3-6
- Week 9: Exam 2

Quarter 2
- Weeks 1-5: Chapters 7-9
- Week 5: Exam 3
- Weeks 5-9: Chapters11-12
- Week 9: Exam 4

Quarter 3
- Weeks 1-4: Chapters 13-14
- Week 4: Exam 5
- Weeks 5-9: Chapters11-12
- Week 9: Exam 6

Quarter 4
- Weeks 1-4: Chapters 18-19
- Week 4: Exam 7
- Weeks 5-9: Chapters 20-22
- Week 9: Exam 8

INVESTIGATION MATERIALS: There are many experiments within the textbook. Those experiments assigned within the course plan take few materials, of which most can be found in your home or at the grocery store. A list of materials has been provided below of all the materials needed (besides common things such as water, pens, paper, etc.) for doing the laboratory experiments.

MATERIALS NEEDED FOR LABORATORY EXPERIMENTS	LAB PAGE NUMBER
Safety Goggles	Most!
Time keeping device with a second hand	Several
Directional Compass, Steel Sewing Needle, Bar Magnet	38
Basketball (or other round sports ball)	54
Modeling Clay	54, 142, 169, 248, 406, 746
Flashlight	54
Meter stick	54, 142, 447, 643
Protractor	54, 223, 553
Compass	731
Metric ruler	Several
Masking tape	54, 746
Tape Measure	54
Silly Putty	107
Several different colored balloons	120, 447, 683
Empty 2 Liter Soda Bottle	142, 195
Wine Cork, Plastic Milk Jug, 2 Wooden Skewers	142
Thumbtacks	142, 447, 746, 632
Plastic and Wire Clothes Hanger	223
Slinky	228
Jello Square (8 x 8 cm), Jumbo Marshmallows, Toothpicks	240
Baking Soda, Funnel, Vinegar	248

Corn Starch	261
Fine Sand, Paper Grocery Bag, Shallow Cardboard Box	740
Shoe Box with Lid	407
Food Coloring	414
Small paper cups	746
Straight plastic straws	746, 553, 683

COURSE PLAN METHODOLOGY:

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 them to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

In the course plans that follow, *Holt Earth Science* is represented by the abbreviation **HES**. 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 **DAY 1, DAY 2, DAY 3, and DAY 4** abbreviations. Parent daily guidelines are given to the right of the student assignments. The quarterly schedule is set up such that one lesson, investigation or test can be done on a five-day schedule. Although most of Kolbe Academy Home School course plans are set up for a four-day week, the mathematics courses at this level do benefit from a five-day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

A weekly grade book is included at the end of the week's course plan *as a convenience*. Parents should use the grade book only as a help to their homeschooling and not as a hindrance. It includes a cumulative list of written assignments from the week's course plan as well as space for additional assignments, if needed. **Kolbe Academy does not require that you keep record of all student work.** If you intend to report your student's work to Kolbe Academy for an official record, only one sample of written and graded work is required per quarter per course along with the signed and filled out report card. The weighting suggestion in the end of quarter grade book is there for *convenience* and may be modified as the parent deems fit. Please consult the welcome packet for a full tutorial on using the grade book.

This science course contains 36 weeks broken into four 9-week quarters. Week 8 is a lighter week, and usually includes a few days for review. You should use the review days as time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over *before* teaching the subjects and make sure you review the material in the tests throughout the quarter.**

Finally, 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.

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♦ COURSE PLAN ♦

Science
Grade 7

♦♦♦ FIRST QUARTER ♦♦♦

WEEK 1			
♦♦♦ UNIT 1: Introduction to Earth Science ♦♦♦			
Book	**Weekly Breakdown**	**Goals and Notes for the Week**	
HES	Chapter 1 Sections 2, 3, 4	**Be sure to take note of the question numbers assigned in each Section Review.** For example, in Section 2, only questions 3, 5, 7, and 8 are assigned. Questions assigned within the scope of Kolbe Academy's course plan are the only questions that are answered in the Kolbe Academy Answer Key for *Holt Earth Science*. **VOCABULARY:** scientific methods, hypothesis, models (all types), theory, meter, volume, mass, temperature, area, density	
Notes			
Student Daily Assignments		☑	**Parent Daily Guidelines**
DAY 1	**HES Read Section 2**	❑	Have the student read Section 2. Do **Section 2 Review**: 3, 5, 7, 8. This section introduces the steps of the scientific method. Students should use Figure 2 on page 13 to help them grasp the process of the scientific method.
	Section 2 Review	❑	
	Page 13		
DAY 2	**HES Read Section 3**	❑	Have the student read Section 3. Do **Section 3 Review**: 5, 6, 7, 9. The importance of using physical, conceptual, and mathematical models in science is discussed.
	Section 3 Review	❑	
DAY 3	**HES Read Section 4**	❑	Have the student read Section 4. Do **Section 4 Review:** 4, 5, 7, 8. Do **Math Focus**: 1, 2 (page 24) Students are introduced to the International System of Units (SI). It is important for students to start using these units in describing scientific quantities. Flashcards may be useful to help students remember the major SI units and what they are used for including those used to measure length, volume, mass, temperature, area, and density (see table 1 on page 22). Students should also be sure to know the equation for area and density.
	Section 4 Review	❑	
	Math Focus Page 24	❑	
	Make SI Flash Cards	❑	
DAY 4	**HES Chapter 1 Review**	❑	Have the student do **Chapter 1 Review**: 5 – 8, 11 – 13, 17.

Week 1 Grade Book				
Assignments	**Include☑**	**(A) Points Earned**	**(B) Possible Points**	**A/B x100 =% (C)**
Section 2 Review	❑			
Section 3 Review	❑			
Section 4 Review	❑			
Chapter Review	❑			
Week 1 Average	**Add up column C & divide by number of included ☑assignments =**			**%**

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WEEK 2		
Book	**Weekly Breakdown**	**Goals and Notes for the Week**
HES	Chapter 2 Sections 1, 2	**VOCABULARY:** map, true north, magnetic declination, latitude, longitude, equator, prime meridian, cylindrical projection, conic projection, azimuthal projection, remote sensing

Notes

Student Daily Assignments		☑	**Parent Daily Guidelines**
DAY 1	**HES Read Section 1**	❑	Have the student read Section 1. Do **Section 1 Review**: 3, 6, 8-10 Students should be able to explain how a compass can be used to locate direction. They should be able to explain the difference between true north and magnetic north. Finally, students should be able compare longitude and latitude and understand how they are used to locate places on Earth.
	Section 1 Review	❑	
DAY 2	**HES Quick Lab**	❑	Have the student do "Quick Lab" **Lab Activity**. Page 38
DAY 3	**HES Read Section 2**	❑	Have the student read Section 2. Do **Section 2 Review**: 2, 3, 6, 8-10 Students should understand why flat maps of the Earth are distorted. They should be able to define the four types of projections for maps including cylindrical, conic, azimuthal, and equal-area. Finally, students should be familiar with the most recent developments in map making (i.e. remote sensing).
	Section 2 Review	❑	
DAY 4	**HES Chapter Review**	❑	Have the student do **Chapter Review**: 1-4, 7, 8, 10-12, 16, 18, 22, 24

Week 2 Grade Book

Assignments	**Include☑**	**(A) Points Earned**	**(B) Possible Points**	**A/B x100 =% (C)**
Section 1 Review	❑			
Quick Lab	❑			
Section 2 Review	❑			
Chapter Review	❑			
Other:	❑			
Week 2 Average	**Add up column C & divide by number of included ☑assignments =**			**%**