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TEACHER'S MANUAL & ANSWER KEY

Introduction

This Teacher's Manual supports the text, *Science and Living in God's World Grade 3*, 1998 edition, printed by Lepanto Press. It is intended as a guide for the parent to further explain and elaborate upon certain ideas and concepts presented in each unit. In each lesson, it is recommended that you, as the tutor, assign pages to be read quietly by the child to himself. A second reading could then consist of the child reading aloud to you, with occasional interruptions to allow you to determine if the child is comprehending what is being read. At the end of each unit, the most important points are summarized by the authors in the Things to Remember section. **Ensure that the child is familiar with the points made in this section.**

This booklet is also an answer key. It includes answers for questions found throughout the text, as well as many in the Things to Do section of each unit. Wrapping up each unit is another section, Things to Think About, which helps the student to recall what he has learned, while encouraging an application of the unit's main ideas to the child's everyday surroundings.

To get the most from this Teacher's Manual, it is recommended that the parent or in-home tutor who will be conducting the lesson read over the relevant portion of this guide prior to conducting the lesson. All page numbers given will refer to either the Textbook or to this Teacher's Manual. For pages to be read in the Textbook, the word "Text" will appear in parenthesis after the page number, while "TM" will appear after page numbers from the Teacher's Manual. Some of the information presented in this guide is for background purposes only, while other information can be best utilized by sharing it with the child. In this latter category can be placed the coloring pictures and activity pages, which are placed throughout the guide. Most of the Teacher's Manual pictures have been designed to be colored by the child, while teaching the student more about some of the animals, plants, or topics pertinent to the unit content. The captions should be read and explained by the parent to the child.

The course work will be presented once a week, on Tuesdays. Quarter Tests and weekly readings from the Nature Reader, *Seaside and Wayside*, will be accomplished on Thursdays. If, at any time, the work is not challenging enough, we encourage you to check out science-related books (e.g., animals, plants, astronomy, etc.) from your library, books which will be of interest to your child. Some limited time introducing your child to the scientific information available on the internet, under your supervision, might be both useful and enjoyable. To find science-related web sites, you can:

- a. do a web search with key words of what you are looking for (e.g., in Unit 4, which deals with the moon, you could search for "lunar exploration," or the "Apollo space program" or the like);
- b. check a library or book store for one of the many books on educational web sites;

Finally, in keeping with the Church's teaching on education that the Catholic Faith is at the heart of every subject in the curriculum, scriptural verses and Catholic commentary are provided in the textbook before the opening of each unit. It is strongly recommended that these scriptural verses (from the Douay-Rheims Bible) and the Catholic commentary at the beginning of each unit be read and explained by the parent to the child. We wish you and your child a rewarding year in the pursuit of science.

UNIT 1
LOOKING FOR A HOUSE

UNIT OBJECTIVE

To understand the nature of electricity, as well as its benefits; and to be familiar with those aspects of a modern home which make it both desirable and utilitarian.

UNIT BACKGROUND

When married couples searched for a home in which to raise their families at the time this book was written in the 1950's, home shopping was a bit less complex. Now, we have government-mandated building codes, competitive financing by any number of "lending institutions," and fluctuating interest rates which have varied significantly in the last two decades.

Still, it can fairly be said that the needs and desires for features in a home haven't changed all that much in the last fifty years. Most people desire an affordable home of good construction, which is inexpensive to maintain. An ample yard for children to play in (or a nearby park) and a safe, secure neighborhood are all highly desirable, as well. Finally, Christian neighbors who have similar goals, aspirations, and values is high on the list, as well.

With regard to the quality of the home, certain features are more important than others. The heating plant is something which is very important, especially in cooler climates, and the choice of fuel can be crucial. Relying purely on electricity is no longer considered prudent, even where its cost is reasonable. Wood-burning stoves are gaining in popularity, and new central heating plants have been designed to allow the homeowner to switch at will from gas or oil, for example, to wood. Unfortunately, wood as a fuel source presents potential air quality problems in larger metropolitan areas. Even medium-sized cities like Spokane, Washington, have laws placing restrictions on when wood-burning stoves and furnaces can be used.

The electricity which comes into your home may have as its generation source a hydro-electric dam, a nuclear power plant, or a coal-

burning power plant. Many homeowners are declaring independence from their power companies by installing private solar power systems, but these are fairly expensive, and the heart of the system – the photovoltaic collectors – are of limited use in colder climates where sunshine is elusive during the winter.

Finally, as Catholics, it is important to distinguish between what we want and what we truly need. People who are deprived of their homes due to natural disasters (or economic hardship) and forced into temporary or "downscaled" living arrangements, are invariably surprised at what they can live without. With regard to material goods, we would do well to remember always what Holy Mother Church teaches: that the material objects of this world were created for man so that, by having and holding and properly using them in his life on earth, he might fulfill the purpose for which he was created, and so attain the happiness that is to be his reward. Created things, therefore, and the possession of them are a means to an end; and that end is Almighty God's glory and man's temporal and eternal happiness.

While it is not necessary to go into the details of how man acquires material goods such as homes and furnishings, it may be relevant for third-graders to realize that it is God's bounty from which we draw, and that He makes things available for us for our temporal and spiritual happiness. With regard to knowledge of the content of this unit, the student should understand the nature of electricity and its benefits. The student should further be able to recognize certain desirable and functional aspects of a modern home, as discussed in the text.

WEEK 1

Discussion

Ask the child to read the title of the unit. Ask, "What do you think we will be talking about in this unit?" After the student responds, explain that we will learn about electricity, and about desirable features to look for in a home. You may want to ask the child what features he particularly likes about your home, or what features he would add if he could. Perhaps you

can point out the difference between needs and desires, or between functional and cosmetic aspects of a house.

Have student read pp. 9 to 13 (of the Text). **In this and all subsequent lessons, you may want to assign the pages to be read quietly by the child first, before the student reads them aloud to you.**

After the student reads pp. 9 -13 aloud, discuss with the child some of the more significant points made in the text.

Show the student the picture of the Indian dwellings at Mesa Verde National Park, Colorado, on page 3 (of the Teacher's Manual, TM). Read the caption to the child and discuss the various dwellings in which people lived in previous ages, and in which they now live in diverse parts of the world.

Activity

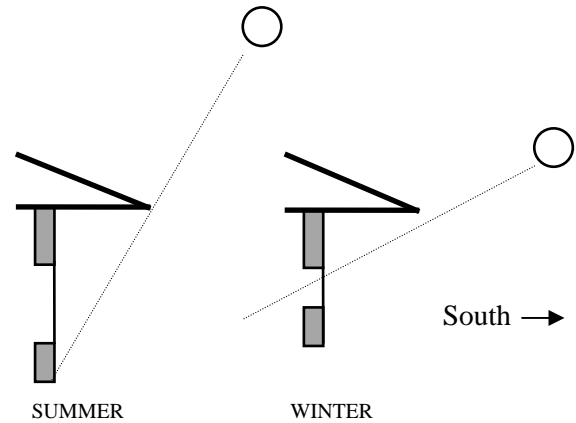
If time permits, allow the student to color the picture of the cliff dwellings at Mesa Verde National Park, on p. 3 (TM).

WEEK 2

Discussion

Have child read pp. 13 - 19 (Text). After the student reads these pages aloud to the parent or in-home tutor, read back over them again with the child, this time asking questions or giving commentary on the text's passages.

On p. 18 (Text), Bob and Betty thought hard about how the sun could shine into the house at some times of the year, and not do so on others. The concept being described by Mr. Brown is referred to as "passive solar design." By facing a window in a southward direction (in the northern hemisphere), and using a substantial roof overhang, the light from the sun can be employed to heat the house when it is lower on the horizon (in winter), while much-needed shade on the window will be the result in the summertime.



The drawing on the left, above, shows the sun high in the sky at mid-day, while the drawing at the right, above, shows the sun in its lower position in the wintertime.

Show the student the photo of the cliff dwellings on p. 4 (TM). Again, take this opportunity to go over some ideal features in a home, discussing with the child the advantages and disadvantages of each.

Activity

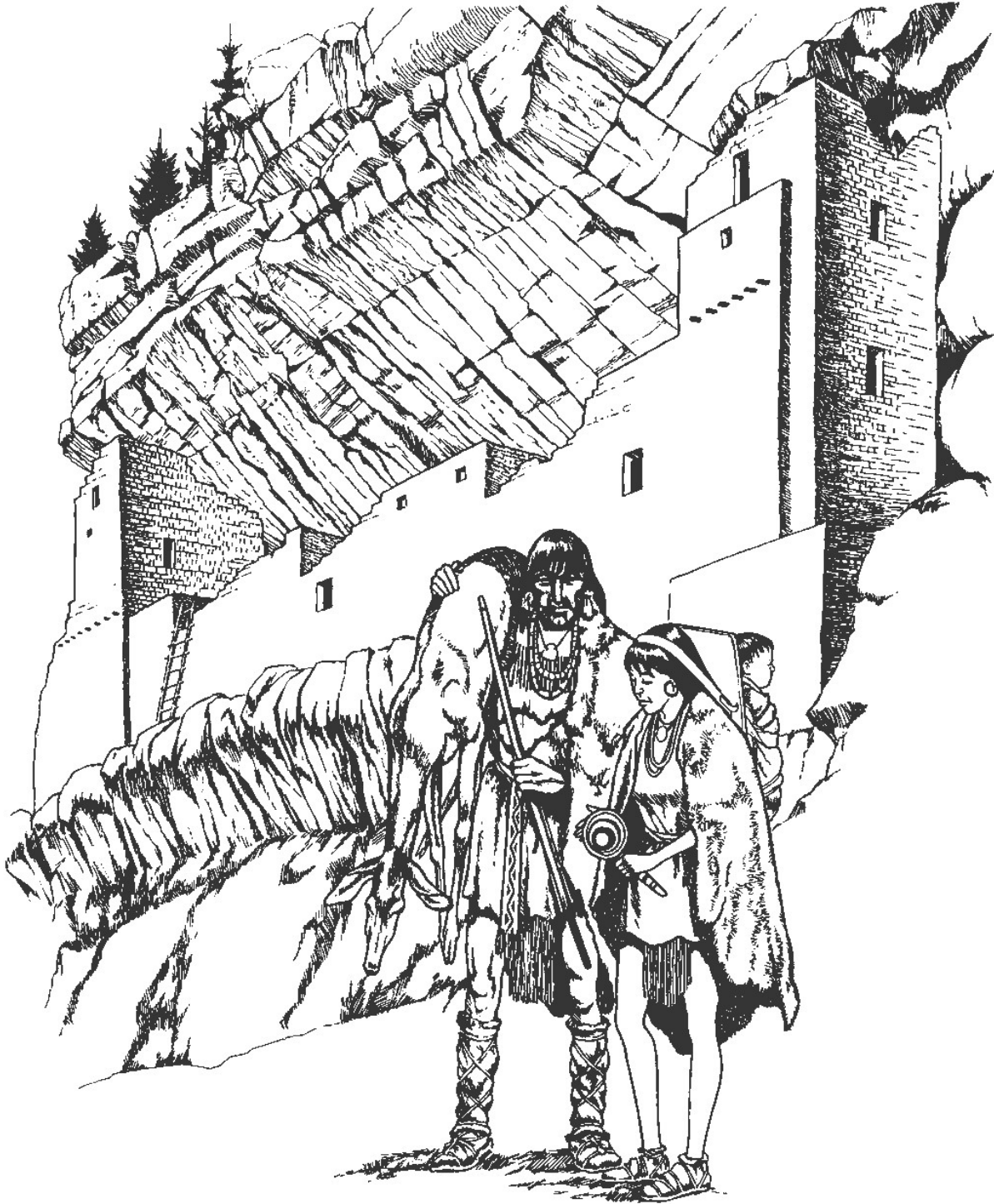
Find pictures of various styles of homes in magazines. Show the child how different cultures build homes to deal with their desires and needs (including climate). If time permits, have the child draw a picture or plan of a home he would like, with features he feels would be necessary to a good modern home.

WEEK 3

Discussion

Have student read pp. 20 - 29 (Text). After the student reads these pages aloud to the parent or in-home tutor, read back over them again with the child, this time asking questions or giving commentary on what was read.

At the top of p. 24 (Text), there is a comment made in the text concerning the waste water from the house running from the sinks and bathtub to the sewage line in the street. The text, written in the 1950's describes "cleaner" water running directly into the river. In fact, waste water (sewage) must now be treated to remove virtually all harmful bacteria from it, before returning it to a surface water course.



Mesa Verde National Park, Colorado. Mesa Verde, established as a park in 1906, features the finest and best preserved pre-Columbian cliff dwellings in the nation. Over 1,000 years ago a group of Native Americans chose this high plateau above the Montezuma and Mancos valleys for their home and built dwellings of

sandstone blocks under the overhanging cliffs. There are summertime guided tours and camping programs at Mesa Verde, which extend over 50,000 acres. Three major cliff dwellings on Chapin Mesa are open for visits in season and many others are visible to visitors from Ruins Road.



You may want to point out to the child that the authors of the text placed significant emphasis on the proper positioning of light sources (p. 26 of the Text) to provide ample lighting for reading and writing. It is a good lesson for children to learn that proper lighting is important for reducing eye strain and for developing good reading and writing habits.

Wrapping up the unit on houses and electrical

systems in homes, try to encourage the child to look at homes from a more Catholic perspective, that is, as a form of shelter rather than an ostentatious display of wealth. This is not to say that an eye for architectural beauty cannot (or should not) be cultivated among the youth of today. On the contrary, children should understand that functional yet simple homes can be some of the most beautiful buildings.