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A Special Note about Plants

This science program is based on the six-kingdom classification system of the living world. In this system, the plant kingdom is made up of multicellular organisms that usually have walled cells and contain chloroplasts where they produce food by photosynthesis. Algae, bacterium, and fungi are not included in the plant kingdom in this system of classification.

The six-kingdom classification includes:

1. Kingdom Archaebacteria
2. Kingdom Eubacteria
3. Kingdom Protista
4. Kingdom Fungi
5. Kingdom Plantae
6. Kingdom Animalia

Introduction

Common Sense Science—Plants can be used in a single or multilevel classroom, homeschool, co-op, or science club. This book and the Student Materials Packet are all you need for a complete study of plants. Older students will need access to basic reference materials.

How to Use the Multilevel Approach

Lessons include foundational content appropriate for first through sixth grades at different mastery levels. For example, when learning photosynthesis, a first grader may master the concept that plants make their own food by using water, sunshine, and air. This student is exposed to more information but not expected to retain it. In the same lesson, a sixth-grade student will learn all the steps of photosynthesis, be able to communicate the process in writing, and apply that information to different situations with plants.

In the activity sections, icons are used to designate the levels in specific assignments.

indicates the first level, which is the non-reading or early reading student. This level mainly applies to first and second grade students.


is used for the second level. This includes the student who is still working to be a fluent reader. This level is primarily designed for third and fourth grade students.


denotes the third level, or fluent reader. This level of activities will usually apply to fifth and sixth grade students.

Choose the directions that fit the age of your student. If you are teaching multiple grades, start with the younger student's directions.

Vocabulary Words

> "If I know the vocabulary, I know the content. If I know the content, I know the vocabulary."
> Dr. Ruth Beechik

Vocabulary words are introduced in the context of each lesson. A new word must be met fifteen times or so before it becomes a part of our speaking vocabulary, so use the words frequently as you present and discuss the material. You can also supplement the lessons with easy-to-read library books on the subject giving them even more opportunities to "meet" the words.

Vocabulary words used in each lesson can be found on the top strip of the Student Pages. Have the student cut the strip on the dotted line to use as a reference in discussions and for copying and writing in their assignments. All the strips can then be stapled or glued to a larger sheet of paper for reference and review.

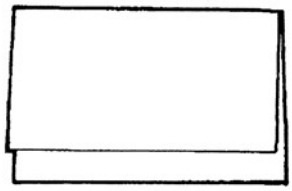
Graphic Organizers

> "Tell me something and I forget. Show me something and I remember. Involve me in something and I learn." Dinah Zike

Common Sense Science—Plants uses 3D Graphic Organizers to help students of all levels better understand concepts by taking complicated information and breaking it down into visual parts. Although the content for the levels will generally be the same, assignments and expectations for recording information learned

will vary for each level. To make the Graphic Organizers you will need the accompanying **Student Materials Packet**.

There are three basic folds used to construct the Organizers. Practice making these folds before introducing them to your students.



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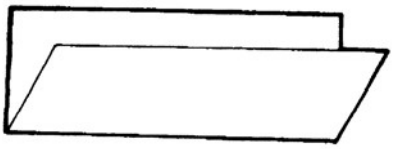

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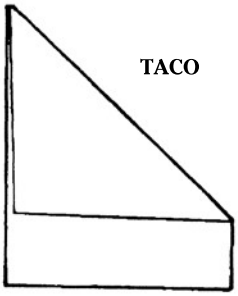

Several of the 3D Graphic Organizers expand over a series of lessons. For this reason, you will need a storage system for each student's 3D Graphic Organizers. A pocket folder or a re-closable plastic bag works well.

The Graphic Organizers used in this program were created by Dinah Zike and used with her permission. To learn more visit www.dinah.com.

Labs

The study of science is based on the Scientific Method—make an observation, come up with a question or concept, make a prediction (hypothesis), experiment, and draw conclusions. Labs implementing this method provide context for the information found in the science lessons, increasing understanding as well as retention. These steps can be overwhelming to young children and should be used as a guideline to avoid overwhelming or frustrating them.

To simplify the process, the labs in *Common Sense Science* use the following approach:

Students

- are asked a question or presented a concept
- make a prediction of what will happen
- experiment and observe
- draw a conclusion based on what they have observed

These predictions, observations, experiments, and conclusions will be recorded on index cards and kept in their Lab Book.

The following lab materials list will help you to prepare. Labs can be completed by the class or by each student.

Lab Materials used in each lesson:

Lesson 1
paper towels
dish
dry beans
rubbing alcohol
clear glass or jar
fresh leaves from a living plant (inside or outside)

Lesson 2
magnifying glass
two newly cut leaves from a living plant
clear glass jar
soil
re-closable bag

Lesson 3
a living plant (2)
box no larger than a shoe box
a clear glass jar
soil
small milk carton

Lesson 4
a plant cutting that will root (African Violet, geranium leaf, ivy stem, or carrot top)
a plant cutting that will not root (flower on a stem)
two clear glasses

Lesson 7
paper towels
food coloring
ear dropper
plate
storage bag

Lesson 8
celery stalk
clear glass
food coloring

Lesson 10
one package lima bean seeds
glass
water

Lesson 12
carnation
two glasses
knife
food coloring (red and blue)
petroleum jelly
a growing plant

Additional Materials Needed

Students will need a **Student Materials Packet** which contains all the images needed to make the Graphic Organizers.

Each student will also need pencils, scissors, glue, colored pencils or crayons, index cards, letter-size manilla file folders or 12"x18" card stock, and multi-colored 8.5"x11" paper. Each student will need a large zip lock bag to keep paper projects safe.

How to Use this Book

Lessons in the *Common Sense Science* series are divided into 18 three-day weeks. With this schedule, you will be able to complete two books a year.

Days 1 and 2 introduce content and the vocabulary needed to understand it. The lessons are scripted, so the teacher just needs to read them to the students. As you read, show them the images that will help them visualize what is being taught and then discuss what they have learned. Students will then have an opportunity to recreate and record what they have learned into a visual format called a Graphic Organizer that teaches and reviews the information.

During this time, they will also experiment with the material through labs that use household items and are easy to complete. They will practice exploring concepts by predicting outcomes, experimenting, and drawing conclusions

On Day 3, students will have opportunities to explore and further investigate the subject matter covered during the week. Choose activities that most interest your students and fit your time schedule. Include library books, videos, and other teaching tools available through the Internet to further enrich enrich your students' learning experience.