ATTAINMENT'S

Early Science Teacher's Guide

1 The Five Senses

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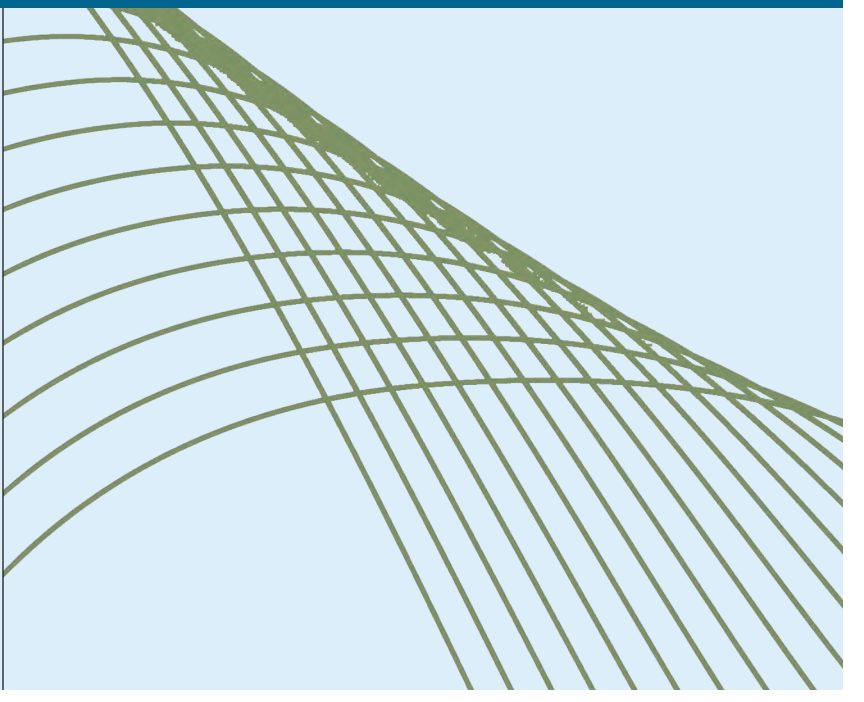
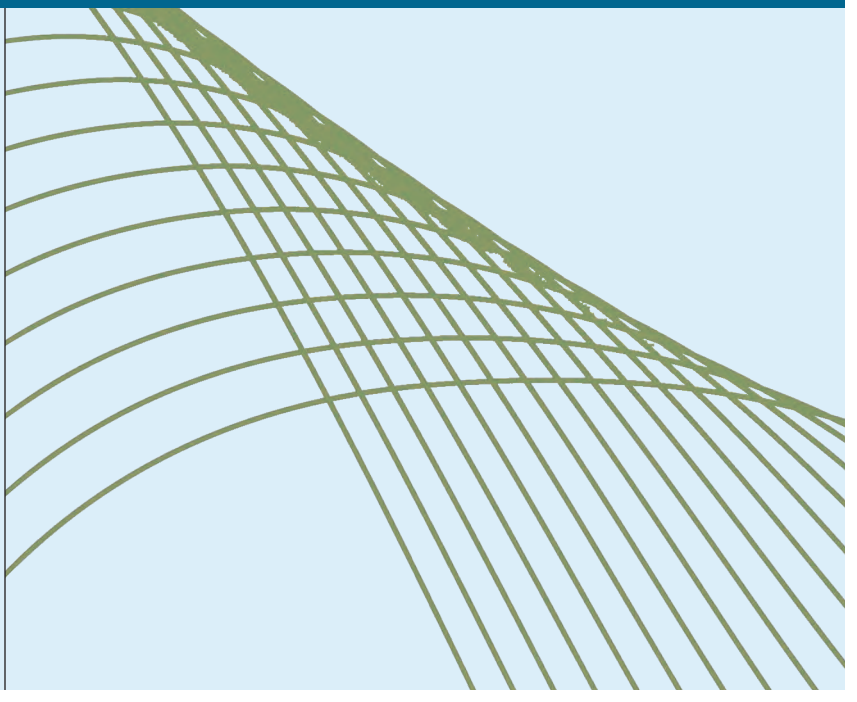


INTRODUCTION



Overview

This unit teaches students the process of science inquiry and how to use their senses in science discovery. Students will use these skills throughout other units in this curriculum. The content for this unit was taken directly from elementary general science standards as listed in the National Science Education Standards. The standards that a lesson most closely aligns to are listed for each lesson, and are referred to as the Standards-Based Objectives.

Skill-Building Objectives are also listed for each lesson. These are the specific objectives identified to support students' access to the Standards-Based Objectives.

How Often to Teach a Lesson

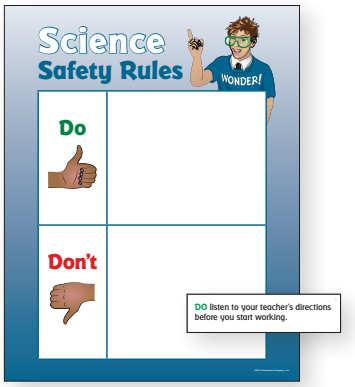
Since students benefit from repetition of the science concepts, all lessons are developed to be repeated. It is beneficial to students to teach them science 4 to 5 days per week, and to repeat a lesson each day for a week (i.e., to repeat the lesson 4 or 5 times). Students will benefit from the repetition and will respond with more and more independence as the lessons are repeated.

Materials

Some materials for this unit, especially consumable materials, will need to be gathered from your home or classroom in preparation for instruction. A full materials list is provided for each lesson, and what you will need to supply versus what is provided in **Early Science** is clearly identified.

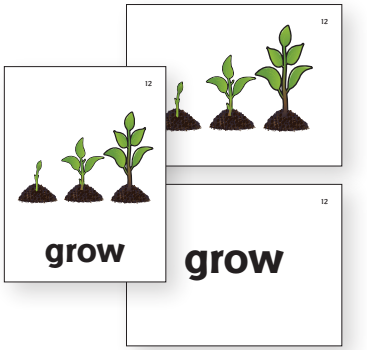
Safety

Safety is an important component in all science lessons. Students learn that the inquiry-based lessons allow them to explore the world around them, but they must be safe when working with the science materials. Science safety is addressed in every lesson and is a critical component to address. While teaching a lesson, Velcro® the Science Safety Rule Card to the Science Safety Poster. Remove it at the end of the lesson so the poster is blank for the next lesson.



Vocabulary Cards

The first part of each lesson requires you to teach students vocabulary they will use in the lesson. Three types of Vocabulary Cards are provided: Picture-Word Cards, Picture Cards, and Word Cards. For emerging readers, use the Picture-Word Cards; for students who are reading, use the Picture Cards and Word Cards. Have students identify the picture, then the text, then match text to picture. Refer to the scripts beginning on p. 94.



System of Least Intrusive Prompts

Remember to use the least intrusive prompt (LIP) when prompting students. This system encourages correct and independent responding. The LIP hierarchy is provided on p. 107 for your convenience.

Terms and Symbols

S — **Student**

KWHL Chart (What do we **k**now? What do we **w**ant to know? **H**ow can we find out? What did we **l**earn?)

Time-delay procedure for prompting. (See the full procedure and script on p. 94)

Example/non-example procedure for teaching science concepts. (See the full procedures and scripts beginning on p. 95.)

Teaching Tips

- Scripts for the time-delay procedure and example/non-example procedure are lengthy but once learned can be applied easily within lessons. Lessons indicate where to use these procedures; however, practicing the scripts and procedures ahead of time will ensure a smooth lesson. Full procedures and scripts are NOT included in the lessons but can be found on the pages indicated above. In addition, visit the **Early Science** product page at www.attainmentcompany.com for a video demonstration of each procedure.
- The response terms (find, point to, choose, indicate, show, and respond) should be interpreted loosely, as some students will use an AAC device or eye-gaze board to respond.
- Always provide feedback to the student, whether or not you have prompted him or her.
- Pointing to text (also known as text point) reinforces students' literacy skills by "reading" with you. Reading can be true reading or following along by pointing to text as you read it.
- Words bolded indicate vocabulary terms from the lesson. When appropriate, match the Vocabulary Cards to actual objects in the lesson or experiment.

Lesson 7

This is a review lesson that follows a different format from other lessons in the unit. Use this lesson to help students recall and generalize the basic concepts and vocabulary of the unit.

Special Accommodations

- Providing students with assistive technology (AT) is vital during instruction. This allows students to be active (rather than passive) participants in the learning process. It also allows students to "show what they know."
- For students who are nonverbal, augmentative/alternative communication (AAC) devices should be preprogrammed and include picture and text to represent the word or concept; for students who eye gaze to show their response, AT options and choices should be prepared.
- For students with visual impairments or those who are early symbol users, specific ideas for adaptations are provided at the end of each lesson. For more information on special accommodations, see p. 23 in the Early Science: Implementation Guide.

Task Analyses

After teaching the lesson numerous times, you will become familiar enough with the scripts to use the Task Analysis (TA) at the end of each lesson to teach the lesson. The TAs summarize the steps and sequence of activities in the lessons.

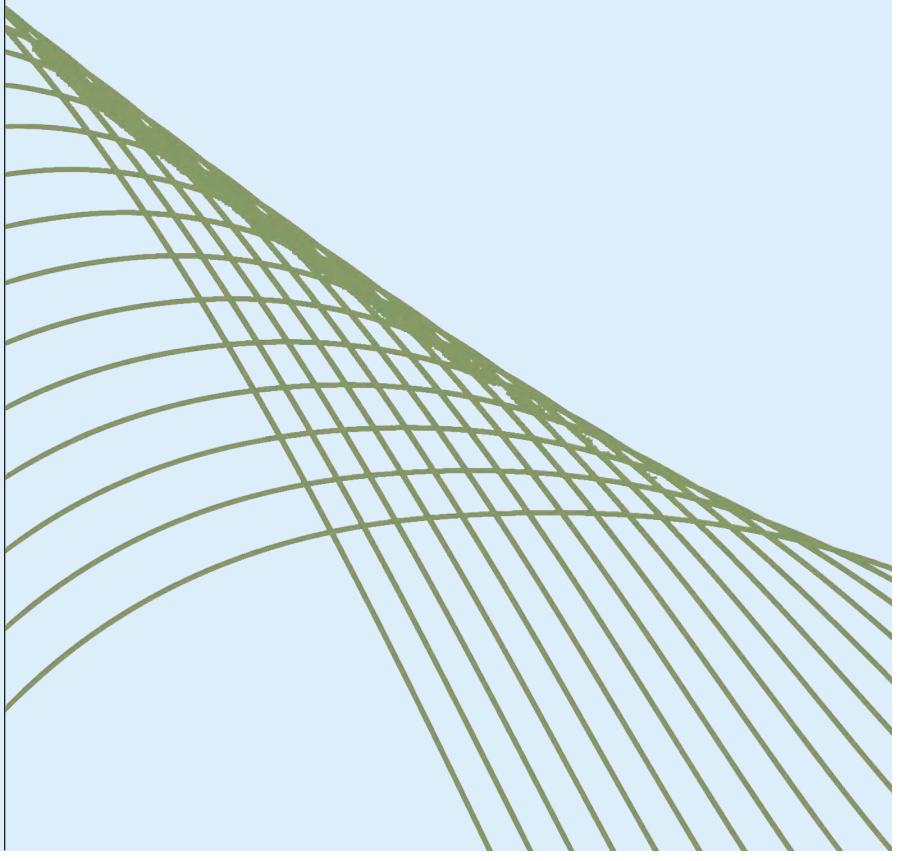
Assessment

- Each lesson includes a Student Report to culminate the lesson. The Student Report can be used to track the student's mastery of vocabulary and concepts within each lesson. The Student Report is found in the student's My Science Log.
- In addition, a Unit Assessment for each unit can be found in Appendix A. These assessments allow students to demonstrate retention of the unit's vocabulary and the "big ideas" they learned.
- Most students are able to complete the Student Report or Unit Assessment by pointing to or circling the correct answer. Remember to use the same accommodations you made for instruction to allow students to "show what they know." Refer to p. 24 in the Early Science: Implementation Guide for more information.
- If desired, track the students' performance using the Early Science Progress Monitoring Form (Appendix B).

Unit One Summary

Lesson	Wonder Story	Wonder Question	Concept Statement	Vocabulary	Science Safety Rule	Concept Development
1 Science and Scientists	Questions	Who can do science?	A _____ asks questions about the natural world. (scientist)	science, scientist	1, 2	scientist
2 Sight	After the Rain	What makes the rainbow's colors?	We can _____ colors and sizes. (see)	see, colors, sizes	3	see; colors: red, orange, yellow, green, blue, violet; sizes: large, small
3 Touch	Hide and Seek	How do I feel things?	We can _____ textures and shapes. (feel)	feel, textures, shapes	4	textures: soft, smooth, rough; shapes: circle, square, triangle
4 Smell and Taste	Mmm . . . That Smells Good	How do I smell? How do I taste?	We can _____ odors and _____ flavors (smell, taste).	smell, taste	5, 6	smell, taste, sour, sweet, salty
5 Hearing	The Noisy World Around Me	How do I hear?	We can _____ sounds. (hear)	hear, sounds	4	sounds, loud, soft
6 My Five Senses	Walking in the Woods	What are my five senses?	We can observe properties with our five _____. (senses)	senses, observe	4, 5	N/A

LESSON 1 Science and Scientists



Skill-Building Objectives

1. Identify vocabulary: science, scientist.
2. Identify a question.
3. Discriminate scientist/not a scientist.

Standards-Based Objectives

1. Students will demonstrate the abilities and understanding necessary to do scientific inquiry.
2. Students will demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations.
3. Students will learn to pose questions to engage in scientific inquiry.
4. Students will learn that they can act as scientists by posing questions and doing science.

Materials

Early Science Kit

- Wonder Wally Storybook: Questions, pp. 6–10
- My Science Log, pp. 6–9
- Vocabulary Cards: 27–science, 28–scientist, distractors (e.g., 3–colors, 20–moon)
- Photo Cards: 1–3 (scientists), 4–6 (non-scientists)
- Wonder Question Card: 1–Who can do science?
- Concept Statement Card: 1–A _____ asks questions about the natural world.
- Science Safety Rule Cards: 1–Do listen to your teacher's directions before you start working; 2–Do wait for your teacher to say it's OK to do an experiment.
- KWHL Chart
- Science Safety Rules Poster
- Objects or pictures representing science (e.g., rocks, goggles, plants, soil)

Prepare Ahead

- Preprogram AAC or organize AT for whatever Ss need to repeat the science question (Who can do science?) and respond with yes, no, science, scientist, me.
- Add a picture and/or name of each student to his or her My Science Log, if possible.

Lesson Plan

Engage

WONDER STORY

TEACHER Introduce Wonder Wally on the cover of the Wonder Wally Storybook. Say, **Wonder Wally thinks about science in the world. He loves science and wants to learn more. He will help you learn more too. We will be reading stories with Wally and wondering with him. Let's read our first story called Questions.** Read the story, Questions, to the Ss.

STUDENT Listens and observes.

WONDER QUESTION

TEACHER At the end of the story, say, **Find the question in our story.** Give each S a turn to find the question, Who can do science? in the story.

STUDENT Finds the question or question mark.

FEEDBACK **That's right. That's the question. Great job finding the question. Now read the question with me.**

PROMPT Wait for S to find the question. If needed, point out the question mark and say, **Look for the question mark at the end of the story.**

If needed, physically guide S's hand to the question in the story and say, **Here it is. This is the question.**

TEACHER Hold up the Wonder Question Card and say, **Here is the question. Read this question with me.** Help Ss point to the text while you read the question once.

STUDENT Reads with you or points to the question text, moving left to right as you read it.

PROMPT If needed, physically guide the S to point left to right to the text while you read it or use an AAC device to read the question.

VOCABULARY

TEACHER

Review the Vocabulary Cards for *science, scientist,* and 2 distractors with the Ss. Place the 4 cards in front of the Ss and introduce them by naming what each is. Then use the time-delay procedure (Rounds 1 and 2) to have each S point to the card for *science,* then *scientist.* (Review the full script on p. 94 if needed.)

Round 1: Point to the correct answer while giving the directive (0-second delay). Say, **Show me science.** Shuffle the cards and repeat for scientist. **Show me scientist.**

Give each S a chance to find the Vocabulary Cards for science and scientist, mixing up the cards as you go.

STUDENT Points to the correct card and says the word aloud (or activates AAC device).

FEEDBACK If S indicates the correct card, give praise, **Great job finding science (scientist)!**

PROMPT If S does not point, or points to an incorrect card, provide a prompt (see p. 94 for script).

TEACHER **Round 2:** With the 4 cards still in front of the Ss, say, **Show me science.** Wait 5 seconds for S to choose the correct answer independently.

STUDENT Points to the correct card and says the word aloud (or activates AAC device).

FEEDBACK If S indicates the correct card, give praise, **Great job finding science!**

PROMPT If S does not point, or points to an incorrect choice, revert back to a 0-second time delay. Provide additional prompts as needed (see p. 94 for script).

TEACHER Shuffle the cards and repeat for scientist. **Show me scientist.**

STUDENT Points to the correct card and says the word aloud (or activates AAC device).

FEEDBACK If S indicates the correct card, give praise, **Great job finding scientist!**

PROMPT If S does not point, or points to an incorrect card, provide a prompt (see p. 94 for script).

Investigate

CONCEPT DEVELOPMENT—SCIENTIST

TEACHER

Teach the concept of *scientist* using the example/non-example procedure (see p. 95 for script).

Place 3 Photo Cards of scientists and 3 Photo Cards of other persons (non-examples of scientist) in front of the Ss.

1. **Frame.** **Today we are going to learn about what a scientist is. Listen. Today we are going to learn about a scientist. What are we going to learn?**