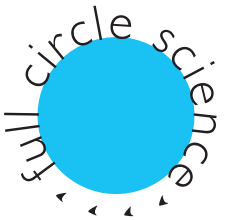


Level I

Science and Me

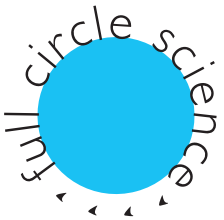
Book I

IMPLEMENTATION MANUAL

FOR PARENTS

Jen Seron
"Science Jen"

Royal Fireworks Press
Unionville, New York



Full Circle Science by Jen Seron

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Level 1

Science and Me

Book 1

IMPLEMENTATION MANUAL FOR PARENTS

TABLE OF CONTENTS

Hi! I'm Science Jen. When I have something to say, you'll see my comments in a text box like this. These boxes exist to provide additional information that relates, however tangentially, to the topic at hand.

WELCOME
TO FULL CIRCLE SCIENCE

Dear Parents and Families,

Full Circle Science (FCS) lessons exist so that you can teach science joyfully and provide the most personally relevant experiences that can be had while learning science. This curriculum is, for everyone at all levels, play-based, intense, concentrated, and action-packed. These lessons should inspire you as an instructor, complement your teaching style, and extend your prowess—whatever your strengths and interests might be and whatever your environment. Parents are collaborators who deserve to have fun and learn, too!

Full Circle Science provides young people with inspiring experiences in the natural world, a strong science background, and opportunities to utilize the scientific framework in everyday life across subject areas in collaboration and conversation with others, via hands-on real-life experiences that will cultivate individual interests, skills, and talents in all fields.

Full Circle Science objectives:

- Learn science joyfully and use the scientific framework in everyday life
- Observe closely, appreciate, and connect personally to our beautiful natural world
- Promote lifelong learning within a respectful, positive, inclusive environment
- Find, develop, apply, optimize, and actualize interests, skills, and talents through science

A clearly defined framework for teaching science is key. This brief Parent Implementation Manual exists to facilitate the use of one other book: the Young Person Book. The Young Person Book is intended to present the natural world and to be held in the hands of a child and interactively experienced and read two pages at a time with a caregiver.

Family involvement is key. The purpose of the Implementation Manual for Parents is to explain briefly how you can get the most out of the Young Person Book and also to provide real-world tie-ins. If you plan to use the Instructor Book and the Young Person Book, you might want to instead obtain the Implementation Manual for Teachers in order to connect content of the Instructor and Young Person books.

Spending time outdoors is key. Although in the background the Full Circle Science focus is always on each child's perceptions and interests and how the current lesson can excite individuals, in the foreground of each lesson is the Young Person Book content as well as the natural world inside and outside. Full Circle Science children should spend time each week outdoors observing, playing, and interacting with the natural world in both structured (related to their interests and what they're learning) and unstructured ways (free play).

I hope you enjoy using Full Circle Science to meet the unique needs and to develop the talents, skills, and interests of your child or children.

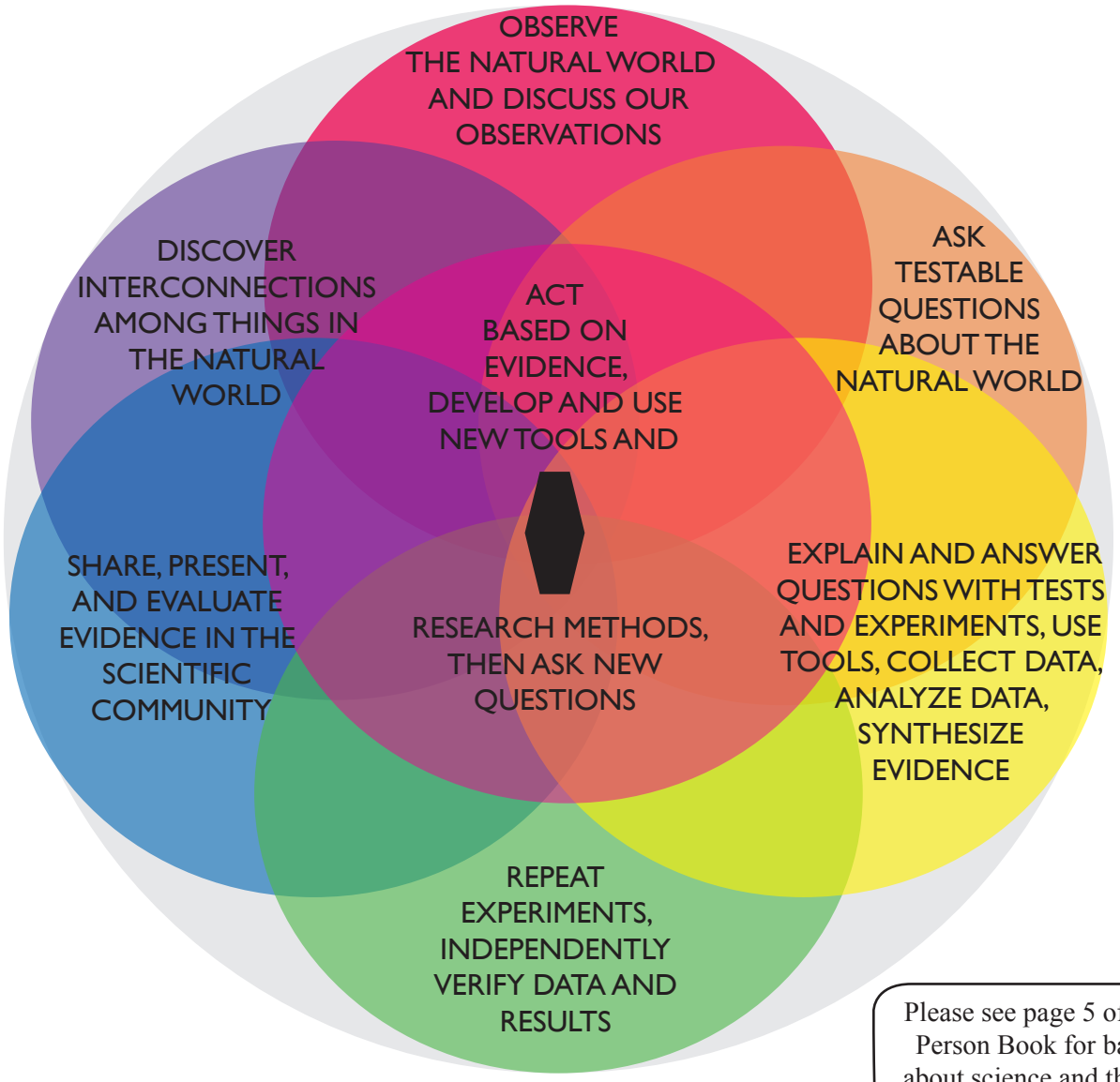
Scientifically yours,

Jen Seron,
"Science Jen"

WHAT IS THE SCIENTIFIC METHOD?

The scientific method is a process
by which people answer questions about the natural world
with evidence obtained through repeated collection and analysis of data.
The diagram below illustrates how the main activities of scientists overlap and come full circle.

A hypothesis is a testable question that not only explains the natural world,
but also predicts what will happen under specific conditions.
A scientific theory is an explanation of some aspect of the natural
world that reputable scientists accept because it has been
repeatedly and independently verified by evidence.



Please see page 5 of the Young Person Book for background about science and the scientific framework before beginning the program with your young people so that you will understand how Full Circle Science approaches the scientific framework.

LESSON 1:
WHAT IS SCIENCE?

OBJECTIVES OF LESSON 1

Get excited about science and set a positive, exuberant tone! Discover diverse aspects of science and nature. Connect science and the scientific framework directly to our lives. Explore diverse aspects of the natural world. Define science via play with objects of nature and science. Have fun!

QUESTIONS FOR CHILDREN AND PARENTS

How do you perceive and experience the world? How does each individual child perceive and experience the world? What do you value? What does each child value? How can you customize this science lesson to inspire and engage your child, even outside of science-time? What can you do to teach science joyfully, or with more joy?

CONTENT OF LESSON 1

LEARN ABOUT THE SCIENTIFIC FRAMEWORK: The content of Lesson 1 (p. 2–17) pertains to the scientific framework and provides an introduction as to how children can enjoy making science part of their everyday lives.

BE AWARE OF FOREGROUND AND BACKGROUND: Although in the background the Full Circle Science focus is always on each child's perceptions and interests, in this lesson in the foreground, you as the instructor will define science, introduce key aspects of the scientific framework, and reinforce basics of science-related skills like reading, mark-making, math, social studies, and more.

NOTICE SCIENCE IN DAILY LIFE: At the end of Lesson 1 in the Young Person Book, or at the end of each science session, children should be asked to look for science in their everyday lives so they can share their observations and questions about the natural world and science at the start of the next science session. This request should be made at the end of every session of science. At the start of each science session you should set aside 5 to 15 minutes of time to ask your children what they observed since last time in the natural world or related to science.

HOW TO BEGIN LESSON 1

LOOK AT THE CHART: On page 6 of this Parent Implementation Manual is a chart you can use to get an overview of the contents of Lesson 1 along with a few ideas for how to integrate the activities and content in the Young Person Book into your daily life.

USE THE YOUNG PERSON BOOK: Parents, beforehand, please look over all of Lesson 1 (p. 2–17).

- On the first day of science, let your child examine the outside of the Young Person Book and ask the child what s/he thinks the book is about.

- Then let or help your child sign his or her book on the inside of the front cover.

- Begin with the content on pages 2–3, the first two-page spread of the child's Young Person Book. It is called a "spread" because it spreads from one side of the book to the other. The Young Person book is intended to be read interactively one two-page spread at a time but if your child is motivated and inspired, then do more. Each two-page spread in the book could take from 5 to 20 minutes.

Do as many two-page spreads as your young person desires. One two-page spread per week might be enough for some children. Others will want to do an entire chapter of two-page spreads per week or even per day. Do whatever is best for your own young people; let your young people set the pace.

Please make sure that after each science session your child has a chance to go out into the world and apply the information on those pages in his or her life.

GO OUTSIDE TO APPLY WHAT YOU'VE LEARNED AND TO PLAY: After every science session, however many pages you do, go outside and apply what you've learned. Lesson 1 is fun to apply in the real world. Take your child or children outside to a neighborhood park or other location with mud, sand, sticks, rocks, or open areas children can explore. Don't interrupt the free play directly after a science session. Children need to work through the ideas in their own ways through play. Instead, make time for parent-led science-related activities between Young Person Book science-sessions.

LOOK AT SCIENTIFIC METHOD AFTERWARD: During the week after your first science session discuss "What is the Scientific Method" on page 3 in this *Parent Implementation Manual* and "Science is . . . " on page 5 of the Young Person Book. Throughout the Young Person Book, at least once in each lesson, is a special "Science Is . . . " page or pages. These pages are intended to demonstrate fun ways to apply each aspect of the scientific method in everyday life and in different contexts.

CHECK OFF WHAT YOU'VE DONE ON PAGES 78–79 AND RECORD DATA: At the end of each science session caregivers and children should check off the pages they have done using the checklist at the end of the Young Person Book (p. 78–79).

Children's drawings and writing in the Young Person book are qualitative data; the Young Person Books are intended to you with a means to record your child's progress

LESSON 1: WHAT IS SCIENCE?
CHART OF CONTENT AND RELATED FUN

The content in the book is intended to be relevant to life. You can do the following activities to accompany each two-page spread in the child's book.

Pages and Content in the Young Person Book	Related Questions or Ideas to Link Content and Extend FCS into Everyday Life
Pages 2–3 Introductory collage	Name some things in the natural world you saw outside today. Go look now if you don't remember. What was the most exciting thing that you have ever seen happen in the natural world?
Pages 4–5 Observations, Science is . . .	Observe closely with all your senses a few natural-world things, both inside and outside, and tell about each of those things with details (properties of things). Look at the clouds. Can you see any shapes? What do you see?
Pages 6–7 Data and outliers	Collect data, right now, wherever you are: find and count squares and other rectangles. Can you make your own shape? Make the strangest shape you can think of using blocks, crayons, or natural objects. What is the name of your shape?
Pages 8–9 Science is . . . and opposites	Tell about an old person that you know. How do you know that old person? Tell about the youngest person that you know. How do you know that young person? The word *opposites* is defined and discussed on page 64.
Pages 10–11 Nesting dolls and scale from small to Earth-sized	Tell about what you see looking with a magnifying glass at different types of things both indoors and outdoors.
Pages 12–13 Flowers, scale, and distance in space	Go somewhere to smell real flowers of different types. Describe how the smells make you feel. Is there a smell that is the opposite of flower-smell? What is the stinkiest thing you've ever smelled?
Pages 14–15 Basis of Words and Matter: Alphabet and Periodic Table	Collect data: find, count, and tell about all the circles and ovals you can find outside of the book, in the environment, right now. Can you make a circle go around you? How? Try jumping in and out of a hula hoop. Can you hula hoop?
Pages 16–17 Draw shapes and make patterns	Collect data: find, count, and tell about shapes on pages 16-17 that you can find inside or outside. Are there patterns? Can you make a rhyming pattern? What words rhyme with *rhyme*? What words rhyme with *dog*, with *cat*?