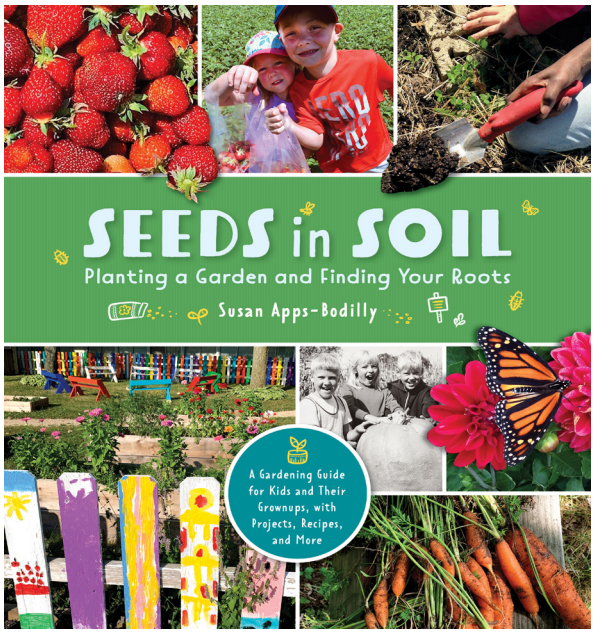
Standards Alignment for *Seeds in Soil*

Seeds in Soil: Planting a Garden and Finding Your Roots by Susan Apps-Bodilly is a seeds-to-supper guide that teachers can use in their classrooms to get students excited about gardening science and history and growing in different environments. Includes recipes and projects to make the most of these nature lessons!

Use this excellent resource to meet Wisconsin learning standards for grades 3–5 in the following areas:

- English Language Arts
- Social Studies
- Science



English Language Arts

Seeds in Soil can help meet or exceed a wide range of English Language Arts standards. Please see DPI's publication *Wisconsin Standards for English Language Arts* to see a breakdown of each anchor standard listed below. From DPI's *Wisconsin Standards for English Language Arts:*

> "To build a foundation for college and career readiness, students must read widely and deeply from among a broad range of high-quality, increasingly challenging literary and informational texts…By reading informational text, students build a foundation of knowledge that will also give them the background to be better readers."

Anchor Standards for Reading

Overarching Statement: Read and comprehend a variety of complex literary and informational texts for many purposes (including enjoyment), including texts that reflect one's experiences and experiences of others. This includes independently and proficiently understanding grade-level text.

Key Ideas and Details

- Anchor Standard R1: Read closely to determine what the text says explicitly/implicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- Anchor Standard R2: Summarize key ideas and details in order to identify central ideas or themes of a text and analyze their development.

Craft and Structure

- Anchor Standard R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- Anchor Standard R5: Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

Integration of Knowledge and Ideas

- Anchor Standard R7: Integrate and evaluate content presented in diverse media and formats.

Anchor Standards for Writing

Overarching Statement: Write routinely for a range of culturally-sustaining and rhetorically authentic tasks, purposes, and audiences over extended time frames (time for inquiry, reflection, and revision) and shorter time frames (a single sitting or a day or two).

Inquiry to Build and Present Knowledge

- Anchor Standard W7: Conduct short as well as more sustained student-driven inquiry, demonstrating an understanding of the subject under investigation.
- Anchor Standard W8: Gather relevant information from multiple print, digital, and community sources, assess the credibility and accuracy of each source, and follow a standard citation format.
- Anchor Standard W9: Draw evidence from literary or informational texts to support analysis, reflection, and inquiry.

Anchor Standards for Speaking and Listening

Overarching statement: Listen to understand and adapt speech to a variety of purposes, audiences, and situations in order to meet communicative goals. Be able to justify intentional language choices and how those choices differ for culture and context.

Comprehension and Collaboration

- Anchor Standard SL2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Anchor Standards for Language

Overarching statement: Demonstrate an understanding of how language functions in different cultures and contexts. Apply this knowledge to meet communicative goals when composing, creating, and speaking, and to comprehend more fully when reading and listening. Be able to justify intentional language and convention choices and explain how those choices differ for culture and context.

Vocabulary Acquisition and Use

- Anchor Standard L2: Determine or clarify the meaning of unknown and multiple-meaning words and phrases in grade-level reading and content; use context clues, analyze meaningful word parts, consult general and specialized reference materials, and apply word solving strategies (for meaning) as appropriate.
- Anchor Standard L4: Demonstrate an ability to collaboratively and independently build vocabulary knowledge when encountering unknown words including cultural, general academic, and discipline-specific terms and phrases; use vocabulary appropriate to the context and situation.

Social Studies

Seeds in Soil content can help meet or exceed the following select social studies standards and learning priorities for grades 3–5. Please see DPI's publication *Wisconsin Standards for Social Studies* for context on each standard listed below.

Inquiry

Standard SS.Inq1: Wisconsin students will construct meaningful questions that initiate an inquiry.

- Inq1.a: Develop questions based on a topic.
- Inq1.b: Plan an inquiry.

Standard SS.Inq2: Wisconsin students will gather and evaluate sources.

- Inq2.a: Gather diverse sources (electronic, digital, print, and other mass media) applicable to the inquiry.
- Inq2.b: Evaluate sources.

Standard SS.Inq3: Wisconsin students will develop claims using evidence to support reasoning.

- Inq3.a: Develop claims to answer an inquiry question.
- Inq3.b: Cite evidence from multiple sources to support a claim.
- Inq3.c: Elaborate how evidence supports a claim.

Standard SS.Inq4: Wisconsin students will communicate and critique conclusions.

- Inq4.a: Communicate conclusions.

Standard SS.Inq5: Wisconsin students will be civically engaged.

- Inq5.a: Civic engagement

Behavioral Sciences

SS.BH1: Wisconsin students will examine individuwal cognition, perception, behavior, and identity (Psychology).

- SS.BH1.a.4: Describe how a person's understanding, perceptions, and behaviors are affected by relationships and environments.

SS.BH2: Wisconsin students will investigate and interpret interactions between individuals and groups (Sociology).

- SS.BH2.a.4-5: Compare how people from different cultures solve common problems, such as distribution of food, shelter, and social interactions.

SS.BH4: Wisconsin students will examine the progression of specific forms of technology and their influence within various societies.

- SS.BH4.a.i: Classify technologies based on intended use, access, and design, and how they might change people's lives (for better or worse).

Economics

Standard SS.Econ2: Wisconsin students will analyze how decisions are made and interactions occur among individuals, households, and firms/businesses (Microeconomics).

- SS.Econ2.c.3: Compare the skills and knowledge required to produce certain goods and services. Provide an example of the factors of production (i.e., land, labor, capital, entrepreneurship) for a given product.

SS.Econ4: Wisconsin students will evaluate government decisions and their impact on individuals, businesses, markets, and resources (Role of Government).

- SS.Econ4.a.3: Trace the chain of supply for a needed product (e.g., food, shelter).

Geography

Standard SS.Geog1: Wisconsin students will use geographic tools and ways of thinking to analyze the world.

- SS.Geog1.a.4-5 (partial): Summarize how location (absolute and relative) affects people, places, and environment.

Standard SS.Geog2: Wisconsin students will analyze human movement and population patterns.

- SS.Geog2.b.5: Investigate push and pull factors of movement in their community, state, country, and world.

Standard SS.Geog5: Wisconsin students will evaluate the relationship between humans and the environment.

- SS.Geog5.a.3-4: Compare the positive and negative effects of human actions on our physical environment (e.g., availability of water, fertility of soils) over time.

- SS.Geog5.b.5 Examine how human actions modify the physical environment when using natural resources (renewable and nonrenewable).

History

Standard SS.Hist1: Wisconsin students will use historical evidence for determining cause and effect.

- SS.Hist1.a.i: Use evidence to draw conclusions about probable causes of historical events, issues, and problems.
- SS.Hist1.b.i Use evidence to draw conclusions about probable effects of historical events, issues, and problems.

Standard SS.Hist2: Wisconsin students will analyze, recognize, and evaluate patterns of continuity and change over time and contextualization of historical events.

- SS.Hist1.b.i: Use evidence to draw conclusions about probable effects of historical events, issues, and problems.
- SS.Hist2.b.i: Describe patterns of change over time in the community, state, and the United States.
- SS.Hist2.c.i: Analyze individuals, groups, and events to understand why their contributions are important to historical change or continuity.

Standard SS.Hist3: Wisconsin students will connect past events, people, and ideas to the present; use different perspectives to draw conclusions; and suggest current implications.

- SS.Hist3.a.i: Compare events in Wisconsin history to a current issue or event.
- SS.Hist3.b.i: Identify different historical perspectives regarding people and events in the past.
- SS.Hist3.c.i: Explain how historical events have possible implications on the present.

Standard SS.Hist4: Wisconsin students will evaluate a variety of primary and secondary sources to interpret the historical context, intended audience, purpose, or author's point of view (Historical Methodology).

- SS.Hist4.a.i: Describe the historical context (situation) of a primary or secondary source.
- SS.Hist4.b: Intended audience
- SS.Hist4.b.i: Describe the significance of the intended audience of a primary or secondary source.
- Hist4.d: Point of view (POV)
- SS.Hist4.c.i: Describe the intended purpose of a specific primary or secondary source.

Science

The *Wisconsin Standards for Science* includes three main dimensions:

- Crosscutting Concepts: Big ideas of science that provide lenses for viewing phenomena and understanding problems in the world around us, and which apply across all areas of science and engineering
- Science and Engineering Practices: The skills required for the work done in science
- Disciplinary Core Ideas: Content understanding across the disciplines of life science, physical science, earth and space science, and engineering

Seeds in Soil content can help meet or exceed the following select science standards and learning priorities for grades 3–5. Please see DPI's publication *Wisconsin Standards for Science* for context on each standard listed below.

Standard SCI.CC1: Students use science and engineering practices, disciplinary core ideas, and patterns to make sense of phenomena and solve problems.

- SCI.CC1.3-5: Students identify similarities and differences in order to sort and classify natural objects and designed products. They identify patterns related to time, including simple rates of change and cycles, and use these patterns to make predictions.

Standard SCI.CC2: Students use science and engineering practices, disciplinary core ideas, and cause and effect relationships to make sense of phenomena and solve problems.

- SCI.CC2.3-5: Students routinely identify and test causal relationships and use these relationships to explain change. They understand events that occur together with regularity may or may not signify a cause-and-effect relationship.

Standard SCI.CC3: Students use science and engineering practices, disciplinary core ideas, and an understanding of scale, proportion, and quantity to make sense of phenomena and solve problems.

- SCI.CC3.3-5: Students recognize natural objects and observable phenomena exist from the very small to the immensely large. They use standard units to measure and describe physical quantities such as mass, time, temperature, and volume.

Standard SCI.CC7: Students use science and engineering practices, disciplinary core ideas, and an understanding of stability and change to make sense of phenomena and solve problems.

- SCI.CC7.3-5: Students measure change in terms of differences over time and observe that change may occur at different rates. They understand some systems appear stable, but over long periods of time they will eventually change.

Standard SCI.SEP1: Students ask questions and define problems, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.

- SCI.SEP1.A.3-5: Students ask questions that specify qualitative relationships. This includes the following:
    - o Ask questions about what would happen if a variable is changed.
    - o Identify scientific (testable) and non-scientific (non-testable) questions.
    - o Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.

Standard SCI.SEP2: Students develop and use models, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.

- SCI.SEP2.3-5: Develop a diagram or simple physical prototype to convey a proposed object, tool, or process.
- Use a model to test cause and effect relationships or interactions concerning the functioning of a natural or designed system.

Standard SCI.SEP3: Students plan and conduct investigations, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.

- SCI.SEP3.3-5: Make predictions about what would happen if a variable changes.
- Test two different models of the same proposed object, tool, or process to determine which better meets criteria for success.

Standard SCI.SEP6: Students construct explanations and design solutions, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.

- SCI.SEP6.A.3-5: Students use evidence to construct explanations that specify variables that describe and predict phenomena. This includes the following:
    - o Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard).
    - o Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation.
    - o Identify the evidence that supports particular points in an explanation.

- SCI.SEP6.B.3-5: Students use evidence to create multiple solutions to design problems. This includes the following:
    - o Apply scientific ideas to solve design problems.
    - o Generate multiple solutions to a problem and compare how well they meet the criteria and constraints.

Standard SCI.SEP8: Students obtain, evaluate, and communicate information, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.

- SCI.SEP8.3-5: Students evaluate the merit and accuracy of ideas and methods. This includes the following:
    - o Read and comprehend grade-appropriate complex texts and other reliable media to summarize and obtain scientific and technical ideas, and describe how they are supported by evidence.
    - o Compare and/or combine information across complex texts and other reliable media to support the engagement in scientific and engineering practices.

Standard SCI.LS1: Students use science and engineering practices, crosscutting concepts, and an understanding of structures and processes (on a scale from molecules to organisms) to make sense of phenomena and solve problems.

- SCI.LS1.A.4: Plants and animals have both internal and external macroscopic structures that allow for growth, survival, behavior, and reproduction.
- SCI.LS1.C.5: Food provides animals with the materials and energy they need for body repair, growth, warmth, and motion. Plants acquire material for growth chiefly from air, water, and process matter, and obtain energy from sunlight, which is used to maintain conditions necessary for survival.

Standard SCI.LS2: Students use science and engineering practices, crosscutting concepts, and an understanding of interactions, energy, and dynamics within ecosystems to make sense of phenomena and solve problems.

- SCI.LS2.A.5: The food of almost any animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants, while decomposers restore some materials back to the soil.
- SCI.LS2.B.5: Matter cycles between the air and soil and among organisms as they live and die.

Standard SCI.LS4: Students use science and engineering practices, crosscutting concepts, and an understanding of biological evolution to make sense of phenomena and solve problems.

- SCI.LS4.A.3: Particular organisms can only survive in particular environments.
- SCI.LS4.D.3: Populations of organisms live in a variety of habitats. Change in those habitats affects the organisms living there.

Standard SCI.PS3: Students use science and engineering practices, crosscutting concepts, and an understanding of energy to make sense of phenomena and solve problems.

- SCI.PS3.D.4.5: Plants capture energy from sunlight which can be used as fuel or food. Stored energy in food or fuel can be converted to useable energy.

Standard SCI.ESS2: Students use science and engineering practices, crosscutting concepts, and an understanding of earth's systems to make sense of phenomena and solve problems.

- SCI.ESS2.E.4: Living things can affect the physical characteristics of their environment.

Standard SCI.ESS3: Students use science and engineering practices, crosscutting concepts, and an understanding of earth and human activity to make sense of phenomena and solve problems.

- SCI.ESS3.C.5: Societal activities have had major effects on the land, ocean, atmosphere, and even outer space. Societal activities can also help protect Earth's resources and environments.

Standard SCI.ETS1: Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.

- SCI.ETS1.A.3-5: Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.
- SCI.ETS1.B.3-5: Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.

Standard SCI.ETS2: Students use science and engineering practices, crosscutting concepts, and an understanding of links among engineering, technology, science, and society to make sense of phenomena and solve problems.

- SCI.ETS2.A.3-5: Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.

Standard SCI.ETS3: Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.

- SCI.ETS3.A.3-5: Science and engineering knowledge have been created by many cultures.

  People use the tools and practices of science and engineering in many different situations (e.g. land managers, technicians, nurses, and welders).

  Science and engineering affect everyday life.