

CDE/ECE Faculty Initiative Project
California Preschool Learning Foundations, Volume 3

***Introduction to the Instructional Guide
for the
Science Domain***

This instructional guide for the science domain is organized to support faculty in addressing the content and research base of the science foundations. Accordingly, the instructional guide for these foundations is designed to support faculty as they deepen students' understanding of the structure, content, and research base of the foundations. In the instructional guides, the word "students" refers to college students and not children in the preschool setting.

The guide is *not* intended to support faculty in helping students learn to assess children's learning and development related to the science foundations. It is also *not* intended to support faculty in helping students learn how to design *curriculum* related to children's development of science knowledge and skills. Curriculum development is addressed in the instructional guides for the *California Preschool Curriculum Framework, Volume 1* and *California Preschool Curriculum Framework, Volume 2*.

Instructional guides have been developed for these publications:

- *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning—A Resource Guide (Second Edition)*
- *California Preschool Learning Foundations, Volume 1*
- *California Preschool Learning Foundations, Volume 2*
- *California Preschool Curriculum Framework, Volume 1*
- *California Preschool Curriculum Framework, Volume 2*

These instructional guides are available on the Faculty Initiative Project Web site, <http://www.wested.org/facultyinitiative>.

The science domain of the *California Preschool Learning Foundations, Volume 3* consists of four strands, each with two substrands:

Scientific Inquiry

- 1.0 Observation and Investigation
- 2.0 Documentation and Communication

Physical Sciences

- 1.0 Properties and Characteristics of Nonliving Objects and Materials
- 2.0 Changes in Nonliving Objects and Materials

Life Sciences

- 1.0 Properties and Characteristics of Living Things
- 2.0 Changes in Living Things

Earth Sciences

- 1.0 Properties and Characteristics of Earth Materials and Objects
- 2.0 Changes in the Earth

The learning experiences in this instructional guide allow faculty to address all the strands in an integrated approach or to focus on individual strands.

Because Volume 3 of the foundations completes the publication of California’s early learning and development foundations, there are a number of learning experiences that refer back to domains of learning and development that are found in previous volumes. Wherever possible, relevant page numbers as well as possible connections to the domains in *California Preschool Learning Foundations, Volume 1* and *California Preschool Learning Foundations, Volume 2* are provided.

When the *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning—A Resource Guide (Second Edition)* and the first volumes of the *California Preschool Learning Foundations* and the *California Preschool Curriculum Framework* were published, the terms “preschool English learners” and “English-language development” were used. Please note that this instructional guide is using the term “young dual language learners” instead of “preschool English learners” or “young English language learners” in order to be consistent with the current policy of the California Department of Education/Early Education and Support Division (formerly Child Development Division). However, the domain in the foundations and curriculum frameworks is still referred to as the “English–language development” domain.

Features of the Instructional Guide for the *California Preschool Learning Foundations, Volume 3*

Student Learning Outcomes

To support faculty in decisions regarding how and where they can best use the *California Preschool Learning Foundations, Volume 3* in their course work or across their program, the Student Learning Outcomes (SLOs) developed by the Curriculum Alignment Project (CAP) (http://www.childdevelopment.org/cs/cdte/print/htdocs/services_cap.htm) for the eight core lower division early childhood courses have been mapped onto each learning experience in this instructional guide for consideration. At the beginning of each learning experience, the Preview of the Learning Experience will provide the list of courses that have been mapped onto the specific learning experience.

The Curriculum Alignment Project's SLOs, objectives, and examples of course content and topics indicated for this instructional guide for the *California Preschool Learning Foundations, Volume 3* can be found in Appendix A of this instructional guide. Refer to Appendix A of this instructional guide for detailed and specific student learning outcomes, objectives, and examples of course content and topics. Refer to the Student Learning Outcomes Index for an overview of this instructional guide mapping listed by domain. The location of the SLO Index is listed in the Table of Contents for this instructional guide.

These SLOs are organized by the CAP core lower division early childhood courses. This is not an exhaustive list, and faculty might find ways to use the learning experiences to address SLOs in ways other than what has been indexed. Working through these selected learning experiences does not guarantee the achievement of any student learning outcome or objective; it is understood that students achieve student outcomes through repeated engagement with information and experiences that build competence.

To assist faculty in using these SLOs as supports for decision making, the instructional guide learning experiences are indexed first by *California Preschool Learning Foundations, Volume 3* domains and then by CAP courses and SLOs so that faculty can select what is most relevant to their particular needs. Student learning outcomes are matched to specific learning experiences in the instructional guide that will support attainment of that outcome. Not all student learning outcomes map onto the specific content of the instructional guide.

Refer to the Student Learning Outcomes Index for an overview of this instructional guide mapping listed by domain. Refer to Appendix A of this instructional guide for more detailed and specific student learning outcomes, objectives, and examples of course content and topics.

Instructional Methodologies

Each learning experience is written to include a variety of instructional methodologies. This is intended to provide varied learning experiences for students as they encounter the foundations. It also provides another variable for faculty to use in deciding which learning experiences will best suit the needs of their students and programs. In this instructional guide, these methodologies are identified for each learning experience and are indexed so that faculty can get an overview of which methodologies are used across

California State University and University of California

The Curriculum Alignment Project (CAP) course and student learning outcome (SLO) mapping with this instructional guide is done with the understanding that not all institutions will use these particular SLOs or objectives. This is particularly true for faculty at the California State University and University of California campuses. The SLOs do provide learning outcomes that can be used selectively or with adaptations for courses at the California State University and University of California campuses and indicate what can be accomplished by students through using the learning experiences in this instructional guide.

all the learning experiences. The location of the Instructional Methodologies Index is listed in the Table of Contents for this instructional guide. This index in this instructional guide also includes, for the first time, working definitions of each of the instructional methodologies used across the learning experiences.

California Early Childhood Educator Competency Areas

The Faculty Initiative Project will undertake a comprehensive process in the future to map the content of the instructional guides to the *California Early Childhood Educator Competencies*. In this instructional guide, competency areas are listed for each learning experience that could be addressed in the learning experience. This list can be found at the beginning of each learning experience on the page(s) labeled Preview of Learning Experience 1 and so forth. These are preliminary connections and are not meant to be exhaustive. Faculty will find more connections in their courses to both competency areas and competency contexts as they become more familiar with them. They are listed in this instructional guide as an initial exploration of how particular competency areas might be addressed through these learning experiences. There is no index for them in this instructional guide due to the preliminary nature of the mapping.

Learning Experiences and Instructional Themes

The instructional guide is composed of 25 learning experiences that can be used to support students in learning about the foundations in the *California Preschool Learning Foundations, Volume 3*. They are presented by domain, and each learning experience is designed to address one of six instructional themes:

- Helping students connect to their own experiences with the domain
- Learning the content of the domain foundations
- Understanding the rationale and research base of the domain
- Connecting the domain to children’s families and cultural communities
- Exploring the foundations in the early care and education setting
- Connecting the foundations across domains

These themes are not explicitly identified within each learning experience. Because of the holistic nature of development for children and for students, many of the learning experiences cross themes. Nevertheless, to support faculty decision making, the dominant theme for each learning experience is identified in the Organizational Chart for the Instructional Guide for the *California Preschool Learning Foundations, Volume 3*.

Structure of the Learning Experiences in the *Instructional Guide for the California Preschool Learning Foundations, Volume 3*

Preview Page(s) Overview

Each learning experience is introduced with a preview page(s) containing information that will help faculty get an overview of that learning experience. Each of these Preview of Learning Experience page(s) contains

- a focus statement that describes what students will experience in the learning experience,
- a list of the Curriculum Alignment Project (CAP) courses for which CAP student learning outcomes have been mapped onto the learning experience,
- a list of the instructional methodologies used in the learning experience, and
- a list of possible California Early Childhood Educator Competency Areas to consider that could be addressed in this learning experience.

Before You Start: Information For Preparation

Following the Preview of Learning Experience page(s), each learning experience begins with a section titled *Before You Start*. This section can be found on the first page of every learning experience following the preview page(s) and provides an overview to help faculty decide if this learning experience fits into their purpose and goals for a class session. In this section there might also be prior readings, background information, connections to other Early Education and Support Division (formerly Child Development Division) publications, or logistical details to consider before engaging with students.

Instructional Components

Information Delivery

This component is designed to introduce specific content to students in the class setting. The delivery of information may be brief or long and may be composed of a single topic or several related topics. *Information Delivery* might include these elements:

- Lecture content
- Readings or video
- Direct engagement with content in an active way

Active Learning

This component describes learning sessions that can be conducted within the time frame of a single class or over several class sessions by individuals, pairs, small groups, or the whole class. These learning sessions are intended to be active,

thoughtful, challenging, and relevant to the content. Active learning is further divided into these segments:

- *Getting it started*
- *Keeping it going*
- *Taking it further*
- *Another approach/way*

Not every learning experience contains all of these segments of active learning. They are included when they are relevant and enhance learning or instructional possibilities.

Reflection

Questions for reflection are offered that will challenge students to reflect on their experiences with the content and process of the learning experience. These questions usually ask students to reflect on their experiences and then come to some action or make a decision based on those reflections. This is intended to establish habits of reflection in students that can be carried over to their work with colleagues and young children and families.

Deeper Understanding

Topics for additional study or research by students are included at the end of some learning experiences. Again, these are included as they are relevant and will enhance or extend learning. They are intended to take students into deeper engagement with the concepts, issues, and/or research base that are related to the content of the domain.

Online Options

Suggestions are made for ways to implement or adapt active learning to student work that is done online. This might be in online courses or as online assignments for face-to-face courses. These are not meant to be exhaustive but to indicate the kinds of adaptations that can be made to support faculty and students who work online.

PowerPoint Presentations



Slide 3

Throughout the instructional guide, you will sometimes see this symbol in the left margin of the instructional components. This symbol indicates that there are PowerPoint slides that correspond to a particular part of the learning experience.

Additional Thoughts

The learning experiences in this guide are written to be adapted and, therefore, are not intended to be used as scripts. Each learning experience provides a framework within which faculty will need to plan and reflect on what will work best with their particular students.

The California Department of Education has published a resource guide titled *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning—A Resource Guide (Second Edition)*. This guide provides foundational information regarding language and literacy development in all children, with special attention to English-language development in children for whom English is not their home language. Many faculty have found this publication to be helpful in supporting their own students who are learning about the foundations and the language of early care and education. The Faculty Initiative Project has produced an instructional guide for this publication, the *Instructional Guide for the Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning—A Resource Guide (Second Edition)*, which is available online at www.wested.org/facultyinitiative/pelguide.html.