



Science:

Exploring the Use of Picture Books to Support the Science Foundations in Early Care and Education Settings

Science Domain:
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Focus Statement

Students will become familiar with the content of the science foundations by identifying picture books that relate to the four strands.

Curriculum Alignment Project (CAP) Student Learning Outcomes

The Curriculum Alignment Project's (CAP) lower division eight courses and student learning outcomes are mapped onto each instructional guide learning experience. See Appendix A for the specific student learning outcomes, objectives, and examples of course content and topics for the courses listed below.

- Child, Family and Community
- Introduction to Curriculum
- Principle and Practices of Teaching Young Children
- Practicum-Field Experience

Instructional Methodologies

- Creation of a visual representation
- Development of resource tool
- Guided experience in the community (i.e., visit to local library)
- Pairs or small groups
- Peer review and feedback
- Personal reflection
- Reflective discussion

California Early Childhood Educator Competency Areas to Consider

The Faculty Initiative Project will undertake a comprehensive process in the future to map the content of the instructional guides to the California Department of Education, Early Education and Support Division's *California Early Childhood Educator Competencies*. The "Competency Areas to Consider" below are listed in this



instructional guide as a preliminary exploration of how particular competency areas might be addressed through these learning experiences.

- Child Development and Learning
- Family and Community Engagement
- Learning Environments and Curriculum
- Professionalism



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Before You Start

This learning experience provides an opportunity for students to find and explore picture books for young children that are related to the science foundations. They will be searching for books that are related to the foundations, which also will provide children with age-appropriate information in a literacy-based format that they can understand and enjoy. This is especially important because there are many commercial books available that might appear appropriate to this topic but that involve situations that are neither accurate nor based on evidence. Though fantasy and imaginative scenarios are important when appropriately included in children's literature, the use of books to support children's understanding of the science foundations should present science-based information. Several trustworthy sources of such books are the following organizations:

- American Library Association
<http://www.ala.org/offices/publishing/booklist/booklinks/resources/readaloudscience>
- Children and Nature Network
<http://www.childrenandnature.org/resources/center/>
- KinderNature
<http://kindernature.storycounty.com/category.aspx?ID=3&SubID=1>
- National Science Teachers Association
<http://www.nsta.org/publications/ostb/>
- U.S. Department of Education, Office of Communications and Outreach, Helping Your Child Learn Science
http://www2.ed.gov/parents/academic/help/science/part_pg10.html - r-3

This learning experience also will provide opportunities for students to become acquainted with local libraries and children's librarians, who can be valuable resources in students' work with young children. Students might also have to get library cards, and if this is problematic for any students, make sure that each pair has one person with a library card or the ability to get one.

The amount of time instructors allow for students to find their books, develop their posters, and bring them to class will depend on where this will fit into the course work. It



could be one week, two weeks, or whatever would fit into the flow of the design of the course. Posters could also be developed in class, which would mean that instructors might provide the posters and materials for their development, such as markers, collage materials, glue sticks, and scissors.

Information Delivery



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Before beginning, review the science foundations with students. Be sure they are very familiar with the strands and substrands.

Ask them to read the Introduction to the science domain of the *California Preschool Learning Foundations, Volume 3*. Emphasize the importance of understanding the knowledge base and concepts for Physical Sciences, Life Sciences, and Earth Sciences and the rationale for the Scientific Inquiry strand. They will need to be familiar with these in order to find picture books relating to this knowledge and these concepts.

Active Learning

Getting it started

Let students know that they will be visiting a library to locate picture books that address the science foundations. Remind them that they can request help from a children's librarian at a local library. As an alternative, many university and community college libraries have collections of children's picture books and would be a good resource as well. Many libraries will have their own lists of picture books related to different topics, including the topics of the science domain, and librarians will either know of those lists or know of relevant books. Sharing a copy of the *California Preschool Learning Foundations, Volume 3* can provide helpful information to the librarian. It is important that students find books that address the strands and substrands and that will help children understand these concepts at a level that is age appropriate.

Keeping it going

Group students into pairs and let them know that they will be bringing books to class and designing and presenting a poster display for their books. Instructors can distribute the strands to each pair in any way that will work for the numbers of students in the class. Instructors could assign students to specific strands, but they will not find equal numbers of books for each strand. For example, Life Sciences would provide many more books than Earth Sciences. An alternative would be to ask each pair to find four books, with each representing one of the strands.

Explain to students that they will develop their poster either out of class or as part of a class session, whichever method the instructor



selects. Each poster should highlight, in some way, the books that each pair has found and brought to class.

Putting it together

When students have had time to find their books and develop their posters, organize a poster gallery and gallery walk, followed by a class discussion. Ask students to review the books and posters and consider the following questions:



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- Which foundations did they see represented? Remind students that they might not see them exactly as they are stated in the foundations but to think about experiences that might be examples of the knowledge base, concepts, or behaviors relative to the substrands or foundations.
- Did the books give them some ideas for science activities they can do in an early care and education setting? What were these?
- How could children who are dual language learners be included as you are reading these picture books to a group?

Instructors could ask students to record their responses to these questions as they walk the gallery, or wait until the discussion that follows their gallery walk. In any case, be alert to other questions that might have come up during their walk.

Online Options

Students could post photographs of their posters with a list of the books online. If the class has online-discussion capability, the students could then discuss the questions after reviewing the posters.



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Taking it further

Ask each pair to write a two- or three-sentence description of what happens in each of their books, and identify strands and substrands that are addressed in their books. These could be collected, compiled, and given to students as a resource for their work with young children.

Online Options

Students could post their annotated lists of children's picture books online.

Reflection

Following the class discussion, ask students to reflect on their experience, using the following questions:



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- What was surprising about looking for picture books related to the science domain?



- What did the posters suggest regarding the foundations that was a new idea?
- Which strand was most familiar? Which was least familiar? What does that suggest about your work with young children regarding the science foundations?
- What would you like to continue to learn about regarding using picture books to support children's experiences with the science foundations?
- How could you continue to learn more about that?