

1. Record Nr.	UNINA9910886376403321
Autore	National Academies of Sciences Engineering, and Medicine
Titolo	Science and Engineering in Preschool Through Elementary Grades : The Brilliance of Children and the Strengths of Educators
Pubbl/distr/stampa	Washington, D.C. : , : National Academies Press, , 2022 ©2022
ISBN	0-309-68424-2 0-309-68418-8
Descrizione fisica	1 online resource (337 pages)
Altri autori (Persone)	EducationDivision of Behavioral and Social Sciences and EducationBoard on Science GradesCommittee on Enhancing Science and Engineering in Prekindergarten Through Fifth StephensAmy DavisElizabeth A
Soggetti	Science - Study and teaching (Elementary) - United States Mathematics - Study and teaching (Elementary) - United States Engineering - Study and teaching (Elementary) - United States Science - United States - Study and teaching (Kindergarten) Mathematics - United States - Study and teaching (Kindergarten) Engineering - United States - Study and teaching (Kindergarten) Sciences - Etude et enseignement (Primaire) - Etats-Unis Ingenierie - Etude et enseignement (Primaire) - Etats-Unis Engineering - Study and teaching (Elementary) Mathematics - Study and teaching (Elementary) Science - Study and teaching (Elementary) United States
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Front Matter -- Summary -- 1. Introduction -- 2. Preschool and Elementary Systems and Structures -- 3. The Contextual Nature of Children's Learning -- 4. Developing Children's Proficiency in and

Through Investigation and Design -- 5. Learning Environments and Instructional Practices That Center Children, Investigation, and Design -- 6. The Potentials and Pitfalls of Integrating Across Domains -- 7. The Role of Curriculum Materials and Instructional Resources -- 8. Supporting Educators to Center Children, Investigation, and Design -- 9. Transformative Leadership -- 10. Progressing Toward a Vision for Science and Engineering in Preschool Through Elementary Grades -- References -- Appendix Biosketches of Committee Members and Staff.

Sommario/riassunto

"Starting in early childhood, children are capable of learning sophisticated science and engineering concepts and engage in disciplinary practices. They are deeply curious about the world around them and eager to investigate the many questions they have about their environment. Educators can develop learning environments that support the development and demonstration of proficiencies in science and engineering, including making connections across the contexts of learning, which can help children see their ideas, interests, and practices as meaningful not just for school, but also in their lives. Unfortunately, in many preschool and elementary schools science gets relatively little attention compared to English language arts and mathematics. In addition, many early childhood and elementary teachers do not have extensive grounding in science and engineering content. Science and Engineering in Preschool through Elementary Grades provides evidence-based guidance on effective approaches to preschool through elementary science and engineering instruction that supports the success of all students. This report evaluates the state of the evidence on learning experiences prior to school; promising instructional approaches and what is needed for implementation to include teacher professional development, curriculum, and instructional materials; and the policies and practices at all levels that constrain or facilitate efforts to enhance preschool through elementary science and engineering. Building a solid foundation in science and engineering in the elementary grades sets the stage for later success, both by sustaining and enhancing students' natural enthusiasm for science and engineering and by establishing the knowledge and skills they need to approach the more challenging topics introduced in later grades. Through evidence-based guidance on effective approaches to preschool through elementary science and engineering instruction, this report will help teachers to support the success of all students." --