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| Nota di contenuto | Preface -- Introduction -- Part 1: Theoretical Framework -- Chapter 1. What is a Precursor Model? Historical and Developmental Psychology Perspectives (Annick Weil-Barais) -- Chapter 2. What Use of a Precursor Model for Early Science Teaching and Learning? Didactical Perspectives (Konstantinos Ravanis and Jean-Marie Boilevin) -- Part 2: Precursor Models: Empirical Studies with Children -- Chapter 3. Social Interaction in the Construction of a “Floating and Sinking” Precursor Model at Preschool Education (Sabrina Patricia Canedo Ibarra and Alma Adrianna Gómez Galindo) -- Chapter 4. Communication Strategies with 5-6 Year-Old Children in the Mental Construction of a Precursor Model: The Case of Water State Changes (Maria Kambouri-Danos, Konstantinos Ravanis, Jean-Marie Boilevin and Alain Jameau) -- Chapter 5. Constructing a Precursor Model for the Clouds in the Thought of 4-6 |

Year-Old Children (Akrivi Georgantopoulou, Glykeria Fragkiadaki, George Kaliampos and Konstantinos Ravanis) -- Chapter 6. Encouraging the Construction of a Precursor Model about Air Through Experimental Activities in Preschool (Vanessa Sesto Varela, Isabel García-Rodeja Gayoso and María Lorenzo Flores) -- Chapter 7. Enabling the Construction of a Precursor Model of Elementary Astronomy Concepts in Early Childhood Education: The Shape of the Earth and the Day/Night Cycle (Maria Kampeza) -- Chapter 8. Precursor Model and Preschool Science Learning about Shadows Formation (Alice Delserieys, Corinne Jégou, Jean-Marie Boilevin and Konstantinos Ravanis) -- Chapter 9. The Idea of 'Precursor Models' in Early Biology Education (Marida Ergazaki) -- Chapter 10. Defining a Precursor Model in Biology: The Case of Young Children Reasoning about Variation Within Populations (Corinne Jégou, Julie Gobert, Alice Delserieys and Marida Ergazaki) -- Part 3: Discussion -- Chapter 11. The Precursor Model: Precursor of a Scientific model (Manuel Bächtold) -- Conclusion.

Sommario/riassunto

This edited volume provides an in-depth exploration of a theoretical framework supporting Early Childhood Science Education research and teaching best practices. Particularly by presenting the concept of the Precursor Model from an epistemological, psychological, and didactical point of view at Early Childhood Science Education. The book examines and discusses the nature of Precursor Models and their use for early science teaching and learning. It scrutinizes different aspects of the construction of such models applied in early childhood education settings and contexts. Several empirical studies are presented within diverse scientific domains, as well as in international educational contexts. By providing a vary of examples of precursor models it makes this book a great companion for teachers aiming to teach children to understand and reason about topics such as: floating and sinking; shadow formation; water state changes; air; clouds and rain; electricity; inheritance and selection; as well as variation within populations. Finally, this volume supports the development of science education from an early age by using the original framework of a precursor model to mediate teaching and learning science at school during early childhood.