

Information Books

Ambitious science teaching

40365 BK

T 304 p. 2018 Harvard Educational Review

Mark Windschitl, Jessica Thompson, and Melissa Braaten.

"This book is addressed to classroom science teachers, both beginning and experienced. It is a guide to using four core practices to improve instruction using [the book's] methods"—Provided by publisher. Ambitious Science Teaching outlines a powerful framework for science teaching to ensure that instructions is rigorous and equitable for students from all backgrounds. The practices presented in the book are being used in schools and districts that seek to improve science teaching at scale, and a wide range of science subjects and grade levels are represented. The book is organized around four sets of core teaching practices: planning for engagement with big ideas; eliciting student thinking; supporting changes in students'; thinking; and drawing together evidence-based explanations. Discussion of each practice includes tools and routines that teachers can use to support students' participation, transcripts of actual student-teacher dialogue and descriptions of teachers' thinking as it unfolds, and examples of student work. The book also provides explicit guidance for "opportunity to learn" strategies that can help scaffold the participation of diverse students. Since the success of these practices depends so heavily on discourse among students, Ambitious Science Teaching includes chapters on productive classroom talk. Science-specific skills such as modelling and scientific argument are also covered. Drawing on the emerging research on core teaching practice and their extensive work with pre-service and in-service teachers, Ambitious Science Teaching presents a coherent and aligned set of resources for educators striving to meet the considerable challenges that have been set for them. -From amazon.com.

Science—Study and teaching;
Teaching—Aids and devices;
Thompson, Jessica Jane,—author;
Braaten, Melissa L.—author

Argument-driven inquiry in biology : lab investigations for grades 9-12

39988 BK

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Victor Sampson, Patrick Enderle, Leeanne Gleim, Jonathon Grooms, [and three others].

Discusses how to teach biology using argument-driven inquiry. "This book will provide you with both the information and instructional materials you need to start using this method right away. Argument-Driven Inquiry in Biology is a one-stop source of

expertise, advice, and investigations." -OCLC.

Biology—Study and teaching;
Inquiry-based learning; Science—
Study and teaching; Teaching—Aids
and devices; Enderle, Patrick,—
author; Gleim, Leeanne,—author;
Grooms, Jonathon,—1981—author

Argument-driven inquiry in chemistry : lab investigations for grades 9-12

39987 BK

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Victor Sampson, Peter Carafano, Patrick Enderle, Steve Fannin, Jonathon Grooms [and three others]. A guide to using argument-driven inquiry in high-school chemistry instruction. "Transform your chemistry labs with this guide to argument-driven inquiry. Designed to be much more authentic for instruction than traditional laboratory activities, the investigations in this book give high school students the opportunity to work the way scientists do. They learn to identify questions, develop models, collect and analyze data, generate arguments, and critique and revise their reports. Thirty field-tested labs cover a broad range of topics related to chemical reactions and matter's structure and properties. You can use them as introduction labs to acquaint students with new content or as application labs to try out a theory, law, or unifying concept. Like Argument-Driven Inquiry in Biology, this book was written by veteran teachers who made it easy to use and aligned with today's standards. All labs include reproducible student pages, teacher notes, and checkout questions. If you've been wanting to try an argument-driven approach to chemistry but haven't been sure how, this book will provide both the information and instructional materials you need to get started." -OCLC.

Chemistry—Study and teaching;
Chemistry—experiments; Inquiry-
based learning; Science—Study and
teaching; Teaching—Aids and
devices; Carafano, Peter,—author;
Enderle, Patrick,—author; Fannin,
Steve,—author; Grooms,
Jonathon,—1981—author

Argument-driven inquiry in earth and space science : lab investigations for grades 6-10

39989 BK

T

Victor Sampson, Ashley Murphy, Kemper Lipscomb, and Todd L. Hutner.

"[Shows teachers how to use] Argument Driven Inquiry (ADI) for middle and high school lab instruction . . . [Provides] an introduction into the stages of ADI—from question identification, data analysis, and argument development and evaluation to double-bind peer review and report

revision . . . [Also offers a] series of 23 field-tested labs"—Back cover.

Earth sciences—Problems,
exercises, etc; Earth sciences—
Study and teaching; Inquiry-based
learning; Meteorology—Study and
teaching; Outer space—Study and
teaching; Teaching—Aids and
devices; Hutner, Todd,—1981—
author; Lipscomb,
Kemper,—1990—author; Murphy,
Ashley,—1988—author

Argument-driven inquiry in life science : lab investigations for grades 6-8

39990 BK

T

Patrick J. Enderle, Ruth Bickel, Leeanne Gleim, Ellen Granger, Jonathon Grooms, [and four more]. "Provides 20 field-tested labs to help your students learn how to read, write, speak, and use math in the context of science. These investigations are much more authentic than traditional laboratory activities because students both learn important content and participate in scientific practices. The students design their own method, develop models, collect and analyze data, and critique information. The labs cover topics in four broad areas of life science: molecules and organisms, ecosystems, biological evolution, and heredity"—Amazon.com.

Biology—Experiments; Biology—
Study and teaching; Inquiry-based
learning; Science—Study and
teaching; Teaching—Aids and
devices; Bickel, Ruth,—author;
Gleim, Leeanne,—author; Granger,
Ellen,—author; Grooms,
Jonathon,—1981—author

Argument-driven inquiry in physical science : lab investigations for grades 6-8

39991 BK

T

Jonathon Grooms, Patrick J. Enderle, Todd Hutner, Ashley Murphy, and Victor Sampson.

A guide to using argument-driven inquiry for middle school physical sciences lab instruction.

Inquiry-based learning; Physical
sciences—Study and teaching;
Physical sciences—Experiments;
Science—Study and teaching;
Teaching—Aids and devices;
Enderle, Patrick,—author; Hutner,
Todd,—1981—author; Murphy,
Ashley,—1988—author; Sampson,
Victor,—1974—author

Argument-driven inquiry in physics. Volume 1, Mechanics lab investigations for grade 9-12

39986 BK

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Victor Sampson, Todd L. Hutner, Daniel FitzPatrick, Adam LaMee, and Jonathon Grooms.

Information Books

A guide to using argument-driven inquiry for high school physics lab instruction. "Argument-Driven Inquiry in Physics, Volume 1 focuses on mechanics and has two parts. The first part describes the ADI instructional model and the components of ADI lab investigations. The second part provides 23 field-tested labs covering a wide variety of topics related to forces and interactions, energy, work, and power."
-OCLC.

Force and energy—Study and teaching; Inquiry-based learning; Physics—Study and teaching; Power (Mechanics)—Study and teaching; Science—Study and teaching; Teaching—Aids and devices; FitzPatrick, Daniel—(Clinical assistant professor of mathematics);; Grooms, Jonathon,—1981—author; Hutner, Todd,—1981—author; LaMee, Adam,—author

Science First Peoples : teacher resource guide : grades 5 to 9

37495 BK

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First Nations Education Steering Committee, First Nations Schools Association.

Provides background information regarding how First Peoples' unappropriated knowledge and perspectives in science can be recognized and included in science inquiry. Offers curriculum planning suggestions and provides examples of fully developed units that correspond with the 'Big Ideas and Learning Standards' in the BC Provincial Science Curriculum for grades 5-9. Designed to be used by teachers, in conjunction with other resources. Units include a brief introduction, essential questions, enduring understandings, curriculum connections, cross-curricular links, suggested activities, resources, assessment activities, and more.

First Nations—Study and teaching; First Nations—Education—Curricula; Science—Study and teaching; First Nations Education Steering Committee,—authoring body; First Nations Schools Association,—authoring body

Science First Peoples : teacher resource guide : secondary

38909 BK

First Nations Education Steering Committee, First Nations Schools Association.