

Balancing Chemical Equations Phet Lab

Dangerous Games is the third book in the Adventures of the Elements series, which continues the fictional saga enable two brothers and three sisters who discover sunglasses that enable them to see the elements from the Periodic Table and molecules. In Dangerous Games, the children confront their greatest fears while engaging the cunning, villainous Ozzie Ozone and Clifton Chlorine. During this struggle, the five children encounter an evil doctor and must unravel a murder mystery. The book also teaches about the elements, chemistry, scientific principles and the environment.

The undergraduate years are a turning point in producing scientifically literate citizens and future scientists and engineers. Evidence from research about how students learn science and engineering shows that teaching strategies that motivate and engage students will improve their learning. So how do students best learn science and engineering? Are there ways of thinking that hinder or help their learning process? Which teaching strategies are most effective in developing their knowledge and skills? And how can practitioners apply these strategies to their own courses or suggest new approaches within their departments or institutions? "Reaching Students" strives to answer these questions.

"Reaching Students" presents the best thinking to date on teaching and learning undergraduate science and engineering. Focusing on the disciplines of astronomy, biology, chemistry, engineering, geosciences, and physics, this book is an introduction to strategies to try in your classroom or institution. Concrete examples and case studies illustrate how experienced instructors and leaders have applied evidence-based approaches to address student needs, encouraged the use of effective techniques within a department or an institution, and addressed the challenges that arose along the way. The research-based strategies in "Reaching Students" can be adopted or adapted by instructors and leaders in all types of public or private higher education institutions. They are designed to work in introductory and upper-level courses, small and large classes, lectures and labs, and courses for majors and non-majors. And these approaches are feasible for practitioners of all experience levels who are open to incorporating ideas from research and reflecting on their teaching practices. This book is an essential resource for enriching instruction and better educating students.

An essential resource for teachers of gifted and talented post-16 chemistry students. This booklet can be used as a teaching tool, or by students themselves as a self-study guide. It takes you step by step through a number of questions from past UK Chemistry Olympiad competitions, challenging students' skills and understanding in chemistry, and testing their ability to solve problems and apply their knowledge. This product comes as a pack of 10 booklets.

The main idea of this book is that to comprehend the instructional potential of simulation and to design effective simulation-based learning environments, one has to consider both what happens inside the computer and inside the students' minds. The framework adopted to do this is model-centered learning, in which simulation is seen as particularly effective when learning requires a restructuring of the individual mental models of the students, as in conceptual change. Mental models are by themselves simulations, and thus simulation models can extend our biological capacity to carry out simulative reasoning. For this reason, recent approaches in cognitive science like embodied cognition and the extended mind hypothesis are also considered in the book.. A conceptual model called the "epistemic simulation cycle" is proposed as a blueprint for the comprehension of the cognitive activities involved in simulation-based learning and for instructional design.

MasteringChemistry(r) The Mastering platform is the most effective and widely used online homework, tutorial, and assessment system for the sciences. It delivers self-paced tutorials that focus on your course objectives, provide individualized coaching, and respond to each student's progress. The Mastering system helps instructors maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn outside of class and arrive prepared for lecture or lab. New to MasteringChemistry: *NEW! 15 Pause and Predict Video Quizzes bring chemistry to life with lab demonstrations illustrating key topics in general chemistry. Students are asked to predict the outcome of experiments as they watch the videos; a set of multiple-choice questions challenges students to apply the concepts from the video to related scenarios. *NEW! Multiple-choice Reading Questions are provided for each chapter, making it easy to hold students accountable for doing assigned readings before lecture. *NEW! Approximately 500 end-of-chapter questions are new or revised, and are supported by the tutorial questions in MasteringChemistry. The overall number of algorithmic and randomized problems has also been increased for the new edition. *NEW! A subset of end-of-chapter questions has been enhanced with hints and feedback to provide scaffolded support as students move from robust tutorials to doing end-of-chapter and test questions on their own. *NEW! All MasteringChemistry tutorials have been evaluated and in many cases edited, revised or rewritten by an advisory board of expert chemists all teaching with the atoms-first approach to ensure the reinforcement of this approach. *NEW! 10 PhET tutorials have been developed around interactive applets that foster conceptual understanding and active learning. Topics include acid-base solutions, balancing chemical equations, and molecular polarity.

This book outlines key issues for addressing the grand challenges posed to educators, developers, and researchers interested in the intersection of simulations and science education. To achieve this, the authors explore the use of computer simulations as instructional scaffolds that provide strategies and support when students are faced with the need to acquire new skills or knowledge. The monograph aims to provide insight into what research has reported on navigating the complex process of inquiry- and problem-based science education and whether computer simulations as instructional scaffolds support specific aims of such pedagogical approaches for students.

Students studying chemistry often struggle with the mole. Counting Moles provides an effective aid to learning by giving clear and confident presentation of the essentials of the mole concept needed by those starting chemistry courses. This user-friendly self-teach e-book is split into six chapters which sequentially introduce the 'mole calculating frame' to help solve problems. Over 200 fully worked examples are given along with several hundred questions. The mole concept is applied to topics such as relative

atomic mass and relative formula mass, percentage composition, empirical and molecular formula. The book also covers concentration, its units, volumetric analysis and the relationship between volume, mass and moles of gases. Counting Moles culminates in you taking a Mole Driving Test. On passing this test, you are issued with a Counting Moles Driving License that will give you all the confidence required to correctly answer all mole calculations.

"Chemistry is designed for the two-semester general chemistry course. For many students, this course provides the foundation to a career in chemistry, while for others, this may be their only college-level science course. As such, this textbook provides an important opportunity for students to learn the core concepts of chemistry and understand how those concepts apply to their lives and the world around them. The text has been developed to meet the scope and sequence of most general chemistry courses. At the same time, the book includes a number of innovative features designed to enhance student learning. A strength of Chemistry is that instructors can customize the book, adapting it to the approach that works best in their classroom."--Openstax College website.

Were you looking for the book with access to MasteringChemistry? This product is the book alone, and does NOT come with access to MasteringChemistry. Buy the book and access card package to save money on this resource. Adapted from Nivaldo J. Tro's best-selling general chemistry book, Principles of Chemistry: A Molecular Approach focuses exclusively on the core concepts of general chemistry without sacrificing depth or relevance. Tro's unprecedented two- and three-column problem-solving approach is used throughout to give students sufficient practice in this fundamental skill. A unique integration of macroscopic, molecular, and symbolic illustrations helps students to visualize the various dimensions of chemistry; Tro's engaging writing style captures student's attention with relevant applications. The Second Edition offers a wealth of new and revised problems, approximately 50 new conceptual connections, an updated art program throughout, and is available with MasteringChemistry®, the most advanced online tutorial and assessment program available. This package contains: Principles of Chemistry: A Molecular Approach, Second Edition

Interactive General Chemistry meets students where they are...with a general chemistry program designed for the way students learn. Achieve provides a new platform for Interactive General Chemistry, thoughtfully developed to engage students for better outcomes. Powerful data and analytics provide instructors with actionable insights on a platform that allows flexibility to align with a broad variety of teaching and learning styles and the exciting Interactive General Chemistry program! Whether a student's learning path starts with problem solving or with reading, Interactive General Chemistry delivers the learning experience he or she needs to succeed in general chemistry. Built from the ground up as a digital learning program, Interactive General Chemistry combines the Sapling Learning homework platform with a robust e-book with seamlessly embedded, multimedia-rich learning resources. This flexible learning environment helps students effectively and efficiently tackle chemistry concepts and problem solving. Student-centered development In addition to Macmillan's standard rigorous peer review process, student involvement was critical to the development and design of Interactive General Chemistry. Using extensive research on student study behavior and data collection on the resources and tools that most effectively promote understanding, we crafted this complete course solution to intentionally embrace the way that students learn. Digital-first experience Interactive General Chemistry was built from the ground up to take full advantage of the digital learning environment. High-quality multimedia resources--including Sapling interactives, PhET simulations, and new whiteboard videos by Tyler DeWitt--are seamlessly integrated into a streamlined, uncluttered e-book. Embedded links provide easy and efficient navigation, enabling students to link to review material and definitions as needed. Problems drive purposeful study Our research into students' study behavior showed that students learn best by doing--so with Interactive General Chemistry, homework problems are designed to be a front door for learning. Expanding upon the acclaimed Sapling homework--where every problem contains hints, targeted feedback, and detailed step-by-step solutions--embedded resources link problems directly to the multimedia-rich e-book, providing just-in-time support at the section and chapter level. Over the last decades several researchers discovered that children, pupils and even young adults develop their own understanding of "how nature really works". These pre-concepts concerning combustion, gases or conservation of mass are brought into lectures and teachers have to diagnose and to reflect on them for better instruction. In addition, there are 'school-made misconceptions' concerning equilibrium, acid-base or redox reactions which originate from inappropriate curriculum and instruction materials. The primary goal of this monograph is to help teachers at universities, colleges and schools to diagnose and 'cure' the pre-concepts. In case of the school-made misconceptions it will help to prevent them from the very beginning through reflective teaching. The volume includes detailed descriptions of class-room experiments and structural models to cure and to prevent these misconceptions.

This book discusses the importance of identifying and addressing misconceptions for the successful teaching and learning of science across all levels of science education from elementary school to high school. It suggests teaching approaches based on research data to address students' common misconceptions. Detailed descriptions of how these instructional approaches can be incorporated into teaching and learning science are also included. The science education literature extensively documents the findings of studies about students' misconceptions or alternative conceptions about various science concepts. Furthermore, some of the studies involve systematic approaches to not only creating but also implementing instructional programs to reduce the incidence of these misconceptions among high school science students. These studies, however, are largely unavailable to classroom practitioners, partly because they are usually found in various science education journals that teachers have no time to refer to or are not readily available to them. In response, this book offers an essential and easily accessible guide.

The book underlines the value of simulation-based education as an approach that fosters authentic engagement and deep learning.

Chemistry is a conceptual subject and, in order to explain many of the concepts, teachers use models to describe the microscopic world and relate it to the macroscopic properties of matter. This can lead to problems, as a student's every-day experiences of the world and use of language can contradict the ideas put forward in chemical science. These titles have been designed to help tackle this issue of misconceptions. Part 1 deals with the theory, by including information on some of the key alternative conceptions that have been uncovered by research; ideas about a variety of teaching approaches that may prevent students acquiring some common alternative conceptions; and general ideas for assisting students with the development of appropriate scientific conceptions. Part 2 provides strategies for dealing with some of the misconceptions that students have, by including ready to use classroom resources including copies of probes that can be used to identify ideas held by students; some specific exercises aimed at challenging some of the alternative ideas; and classroom activities that will help students to construct the

chemical concepts required by the curriculum. Used together, these two books will provide a good theoretical underpinning of the fundamentals of chemistry. Trialled in schools throughout the UK, they are suitable for teaching ages 11-18.

Steve and Susan Zumdahl's texts focus on helping students build critical thinking skills through the process of becoming independent problem-solvers. They help students learn to think like a chemists so they can apply the problem solving process to all aspects of their lives. In CHEMISTRY: AN ATOMS FIRST APPROACH, the Zumdahls use a meaningful approach that begins with the atom and proceeds through the concept of molecules, structure, and bonding, to more complex materials and their properties. Because this approach differs from what most students have experienced in high school courses, it encourages them to focus on conceptual learning early in the course, rather than relying on memorization and a plug and chug method of problem solving that even the best students can fall back on when confronted with familiar material. The atoms first organization provides an opportunity for students to use the tools of critical thinkers: to ask questions, to apply rules and models and to evaluate outcomes. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

KEY BENEFIT: The Open Source Physics project provides a comprehensive collection of Java applications, smaller ready-to-run simulations, and computer-based interactive curricular material. This book provides all the background required to make best use of this material and is designed for scientists and students wishing to learn object-oriented programming using Java in order to write their own simulations and develop their own curricular material. The book provides a convenient overview of the Open Source Physics library and gives many examples of how the material can be used in a wide range of teaching and learning scenarios. Both source code and compiled ready-to-run examples are conveniently included on the accompanying CD-ROM. The book also explains how to use the Open Source Physics library to develop and distribute new curricular material. Introduction to Open Source Physics, A Tour of Open Source Physics, Frames Package, Drawing, Controls and Threads, Plotting, Animation, Images, and Buffering, Two-Dimensional Scalar and Vector Fields, Differential Equations and Dynamics, Numerics, XML Documents, Visualization in Three Dimensions, Video, Utilities, Launching Physics Curricular Material, Tracker Video Analysis, Easy Java Simulations Modeling, The BQ Database For all readers interested in learning object-oriented programming using Java in order to write their own simulations and develop their own curricular material.

Winner of the CHOICE Outstanding Academic Title 2017 Award This comprehensive collection of top-level contributions provides a thorough review of the vibrant field of chemistry education. Highly-experienced chemistry professors and education experts cover the latest developments in chemistry learning and teaching, as well as the pivotal role of chemistry for shaping a more sustainable future. Adopting a practice-oriented approach, the current challenges and opportunities posed by chemistry education are critically discussed, highlighting the pitfalls that can occur in teaching chemistry and how to circumvent them. The main topics discussed include best practices, project-based education, blended learning and the role of technology, including e-learning, and science visualization. Hands-on recommendations on how to optimally implement innovative strategies of teaching chemistry at university and high-school levels make this book an essential resource for anybody interested in either teaching or learning chemistry more effectively, from experience chemistry professors to secondary school teachers, from educators with no formal training in didactics to frustrated chemistry students.

Introductory chemistry students need to develop problem-solving skills, and they also must see why these skills are important to them and to their world. Introductory Chemistry, Fourth Edition extends chemistry from the laboratory to the student's world, motivating students to learn chemistry by demonstrating how it is manifested in their daily lives. Throughout, the Fourth Edition presents a new student-friendly, step-by-step problem-solving approach that adds four steps to each worked example (Sort, Strategize, Solve, and Check). Tro's acclaimed pedagogical features include Solution Maps, Two-Column Examples, Three-Column Problem-Solving Procedures, and Conceptual Checkpoints. This proven text continues to foster student success beyond the classroom with MasteringChemistry®, the most advanced online tutorial and assessment program available. This package contains: Tro, Introductory Chemistry with MasteringChemistry® Long, Introductory Chemistry Math Review Toolkit

Scientists and engineers have long relied on the power of imaging techniques to help see objects invisible to the naked eye, and thus, to advance scientific knowledge. These experts are constantly pushing the limits of technology in pursuit of chemical imaging—the ability to visualize molecular structures and chemical composition in time and space as actual events unfold—from the smallest dimension of a biological system to the widest expanse of a distant galaxy. Chemical imaging has a variety of applications for almost every facet of our daily lives, ranging from medical diagnosis and treatment to the study and design of material properties in new products. In addition to highlighting advances in chemical imaging that could have the greatest impact on critical problems in science and technology, Visualizing Chemistry reviews the current state of chemical imaging technology, identifies promising future developments and their applications, and suggests a research and educational agenda to enable breakthrough improvements.

Teaching your students to think like scientists starts here! Use this straightforward, easy-to-follow guide to give your students the scientific practice of critical thinking today's science standards require. Ready-to-implement strategies and activities help you effortlessly engage students in arguments about competing data sets, opposing scientific ideas, applying evidence to support specific claims, and more. Use these 24 activities drawn from the physical sciences, life sciences, and earth and space sciences to: Engage students in 8 NGSS science and engineering practices Establish rich, productive classroom discourse Extend and employ argumentation and modeling strategies Clarify the difference between argumentation and explanation Stanford University professor, Jonathan Osborne, co-author of The National Resource Council's A Framework for K-12 Science Education—the basis for the Next Generation Science Standards—brings together a prominent author team that includes Brian M. Donovan (Biological Sciences Curriculum Study), J. Bryan Henderson (Arizona State University, Tempe), Anna C. MacPherson (American Museum of Natural History) and Andrew Wild (Stanford University Student) in this new, accessible book to help you teach your middle school students to think and argue like scientists!

Fluid Mechanics for Chemical Engineers, third edition retains the characteristics that made this introductory text a success in prior editions. It is still a book that emphasizes material and energy balances and maintains a practical orientation throughout. No more math is included than is required to understand the concepts presented. To meet the demands of today's market, the author has included many problems suitable for solution by computer. Two brand new chapters are included. The first, on mixing, augments the book's coverage of practical issues encountered in this field. The second, on computational fluid dynamics (CFD), shows students the connection between hand and computational fluid dynamics.

During the present pandemic situation, the whole world has been emphasized to accept the new-normal education system. The students and the teachers are not able to interact between themselves due to the lack of accessibility to a common school or academic building. They can access their studies only through online learning with the help of gadgets and internet. The whole learning system has been changed and the new modern learning system has been introduced to the whole world. This book on Advances in Science Education aims to increase the understanding of science and the construction of knowledge as well as to promote scientific literacy to become responsible citizenship. Science communication can be used to increase science-related knowledge for better description, prediction, explanation and understanding.

ALERT: Before you purchase, check with your instructor or review your course syllabus to ensure that you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, including customized versions for individual schools, and registrations are not transferable. In addition, you may need a CourseID, provided by your instructor, to register for and use Pearson's MyLab & Mastering products. Packages Access codes for Pearson's MyLab & Mastering products may not be included when purchasing or renting from companies other than Pearson; check with the seller before completing your purchase. Used or rental books If you rent or purchase a used book with an access code, the access code may have been redeemed previously and you may have to purchase a new access code. Access codes Access codes that are purchased from sellers other than Pearson carry a higher risk of being either the wrong ISBN or a previously redeemed code. Check with the seller prior to purchase. -- This includes all of the resources of MasteringChemistry® in addition to Pearson eText content. The Mastering platform is the most effective and widely used online homework, tutorial, and assessment system for the sciences. It delivers self-paced tutorials that focus on your course objectives, provide individualized coaching, and respond to each student's progress. The Mastering system helps instructors maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn outside of class and arrive prepared for lecture or lab. New to MasteringChemistry:

MasteringChemistry metadata analysis of problems/tutorials assigned in the previous edition have been used to revise end-of-chapter problems in the Third Edition. Approximately 1,000 end-of-chapter questions have been enhanced with feedback, meeting instructor's need for more tutorial-like questions. Interactive versions of selected worked examples in the text have been created and are incorporated into MasteringChemistry as assignable tutorial activities, providing an office hour-like experience. These can also be used for mobile learning through a downloadable app. 15 Pause and Predict Video Quizzes bring chemistry to life with lab demonstrations illustrating key topics in general chemistry. Students are asked to predict the outcome of experiments as they watch the videos; a set of multiple-choice questions challenges students to apply the concepts from the video to related scenarios. 8 PhET tutorials have been developed around interactive applets that foster conceptual understanding and active learning. Topics include acid-base solutions, balancing chemical equations, and molecular polarity. Multiple-choice Reading Questions are provided for each chapter, making it easy to hold students accountable for doing assigned readings before lecture. Enhanced end-of-chapter questions within MasteringChemistry providing wrong-answer feedback have been added. Sketch-it type problems have been added for each chapter. Simulations cover some of the most difficult chemistry concepts and are written by the leading authors in simulation development. Select end-of-chapter questions and reading quizzes have been tagged to learning outcomes. The overall number of algorithmic and randomized problems have been increased to 40%, offering a more rounded program for departments moving to online high-stakes testing.

"General Chemistry: Atoms First," Second Edition starts from the building blocks of chemistry, the atom, allowing the authors to tell a cohesive story that progresses logically through molecules and compounds to help students intuitively follow complex concepts more logically. This unified thread of ideas helps students build a better foundation and ultimately gain a deeper understanding of chemical concepts. Students can more easily understand the microscopic-to-macroscopic connections between unobservable atoms and the observable behavior of matter in daily life, and are brought immediately into real chemistry instead of being forced to memorize facts. Reflecting a true atoms first perspective, the Second Edition features experienced atoms-first authors, incorporates recommendations from a panel of atoms-first experts, and follows historical beliefs in teaching chemistry concepts based and real experimental data first. This approach distinguishes this text in the market based whereby other authors teach theory first, followed by experimental data.

ALERT: Before you purchase, check with your instructor or review your course syllabus to ensure that you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, including customized versions for individual schools, and registrations are not transferable. In addition, you may need a CourseID, provided by your instructor, to register for and use Pearson's MyLab & Mastering products. Packages Access codes for Pearson's MyLab & Mastering products may not be included when purchasing or renting from companies other than Pearson; check with the seller before completing your purchase. Used or rental books If you rent or purchase a used book with an access code, the access code may have been redeemed previously and you may have to purchase a new access code. Access codes Access codes that are purchased from sellers other than Pearson carry a higher risk of being either the wrong ISBN or a previously redeemed code. Check with the seller prior to purchase. -- MasteringChemistry® This includes all of the resources of MasteringChemistry in addition to Pearson eText content. The Mastering platform is the most effective and widely used online homework, tutorial, and assessment system for the sciences. It delivers self-paced tutorials that focus on your course objectives, provide individualized coaching, and respond to each student's progress. The Mastering system helps instructors maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn outside of class and arrive prepared for lecture or lab. New to MasteringChemistry: NEW! 15 Pause and Predict Video Quizzes bring chemistry to life with lab demonstrations illustrating key topics in general chemistry. Students are asked to predict the outcome of experiments as they watch the videos; a set of multiple-choice questions challenges students to apply the concepts from the video to related scenarios. NEW! Multiple-choice Reading Questions are provided for each chapter, making it easy to hold students accountable for doing assigned readings before lecture. NEW! Approximately 500 end-of-chapter questions are new or revised, and are supported by the tutorial questions in MasteringChemistry. The overall number of algorithmic and randomized problems has also been increased for the new edition. NEW! A subset of end-of-chapter questions has been enhanced with hints and feedback to provide scaffolded support as students move from robust tutorials to doing end-of-chapter and test questions on their own. NEW! All MasteringChemistry tutorials have been evaluated and in many cases edited, revised or rewritten by an advisory board of expert chemists all teaching with the atoms-first approach to ensure the reinforcement of this approach. NEW! 10 PhET tutorials have been developed around interactive applets that foster conceptual understanding and active learning. Topics include acid-base solutions, balancing chemical

equations, and molecular polarity.

Classic Chemistry Demonstrations is an essential, much-used resource book for all chemistry teachers. It is a collection of chemistry experiments, many well-known others less so, for demonstration in front of a class of students from school to undergraduate age. Chemical demonstrations fulfil a number of important functions in the teaching process where practical class work is not possible. Demonstrations are often spectacular and therefore stimulating and motivating, they allow the students to see an experiment which they otherwise would not be able to share, and they allow the students to see a skilled practitioner at work. Classic Chemistry Demonstrations has been written by a teacher with several years' experience. It includes many well-known experiments, because these will be useful to new chemistry teachers or to scientists from other disciplines who are teaching some chemistry. They have all been trialled in schools and colleges, and the vast majority of the experiments can be carried out at normal room temperature and with easily accessible equipment. The book will prove its worth again and again as a regular source of reference for planning lessons.

Chemistry seeks to provide qualitative and quantitative explanations for the observed behaviour of elements and their compounds. Doing so involves making use of three types of representation: the macro (the empirical properties of substances); the sub-micro (the natures of the entities giving rise to those properties); and the symbolic (the number of entities involved in any changes that take place). Although understanding this triplet relationship is a key aspect of chemical education, there is considerable evidence that students find great difficulty in achieving mastery of the ideas involved. In bringing together the work of leading chemistry educators who are researching the triplet relationship at the secondary and university levels, the book discusses the learning involved, the problems that students encounter, and successful approaches to teaching. Based on the reported research, the editors argue for a coherent model for understanding the triplet relationship in chemical education.

This book contains microscale experiments designed for use in schools and colleges.

The main objective of this Research Topic is to determine the conditions that place students at risk of school failure, identifying student and context variables. In spite of the fact that there is currently little doubt about how one learns and how to teach, in some countries of the "developed world," there is still there is a high rate of school failure. Although the term "school failure" is a very complex construct, insofar as its causes, consequences, and development, from the field of educational psychology, the construct "student engagement" has recently gained special interest in an attempt to deal with the serious problem of school failure. School engagement builds on the anatomy of the students' involvement in school and describes their feelings, behaviors, and thoughts about their school experiences. So, engagement is an important component of students' school experience, with a close relationship to achievement and school failure. Children who self-set academic goals, attend school regularly and on time, behave well in class, complete their homework, and study at home are likely to interact adequately with the school social and physical environments and perform well in school. In contrast, children who miss school are more likely to display disruptive behaviors in class, miss homework frequently, exhibit violent behaviors on the playground, fail subjects, be retained and, if the behaviors persist, quit school. Moreover, engagement should also be considered as an important school outcome, eliciting more or less supportive reactions from educators. For example, children who display school-engaged behaviors are likely to receive motivational and instructional support from their teachers. The opposite may also be true. But what makes student engage more or less? The relevant literature indicates that personal variables (e.g., sensory, motor, neurodevelopmental, cognitive, motivational, emotional, behavior problems, learning difficulties, addictions), social and/or cultural variables (e.g., negative family conditions, child abuse, cultural deprivation, ethnic conditions, immigration), or school variables (e.g., coexistence at school, bullying, cyberbullying) may concurrently hinder engagement, preventing the student from acquiring the learnings in the same conditions as the rest of the classmates.

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