

genetics brainpop

genetics brainpop is a popular educational resource that provides engaging and accessible content on genetics for students and educators alike. This platform offers animated videos, quizzes, and interactive activities designed to simplify complex genetic concepts. Understanding genetics is essential in today's world, as it plays a crucial role in biology, medicine, and many scientific advancements. BrainPOP's approach to genetics education helps learners grasp topics such as DNA structure, inheritance patterns, and genetic mutations in an enjoyable and memorable way. This article explores the various aspects of genetics as covered by BrainPOP, offering insights into its educational value, key topics, and how it supports effective learning. The following sections provide a detailed overview of genetics BrainPOP content, its instructional design, and practical applications in classrooms.

- Overview of Genetics in BrainPOP
- Key Genetics Concepts Covered
- Educational Benefits of Genetics BrainPOP
- Using Genetics BrainPOP in the Classroom
- Additional Resources and Support

Overview of Genetics in BrainPOP

BrainPOP's genetics content is designed to introduce fundamental genetic principles through engaging multimedia lessons. The platform uses clear animations and straightforward explanations to make genetics accessible to middle school and high school students. The genetics BrainPOP series includes videos that cover the basics of heredity, DNA structure, gene expression, and genetic variation. These videos are accompanied by quizzes and interactive exercises that reinforce student understanding and retention. By combining visual storytelling with interactive elements, BrainPOP creates an effective learning environment for genetics education.

Content Structure and Format

Each genetics BrainPOP module follows a structured format that begins with an animated video explaining a specific genetic concept. Following the video, students can participate in quizzes to test their comprehension and engage in activities that apply their knowledge. This format supports various learning

styles by incorporating auditory, visual, and kinesthetic elements. The concise length of the videos ensures that students remain focused while absorbing essential information. Additionally, the platform provides teacher resources to facilitate lesson planning and assessment.

Target Audience and Accessibility

BrainPOP's genetics content is primarily targeted toward students in grades 6 through 10, but it can also serve as a supplementary tool for learners at different educational levels. The language and presentation style are tailored to be age-appropriate, ensuring that complex genetic topics are simplified without sacrificing scientific accuracy. The platform is accessible across multiple devices, allowing students to learn at their own pace both in and out of the classroom. This accessibility enhances the usefulness of genetics BrainPOP as a versatile educational tool.

Key Genetics Concepts Covered

Genetics BrainPOP comprehensively covers a range of essential topics that form the foundation of genetics education. The content is designed to elucidate the principles behind heredity, genetic material, and the mechanisms that govern gene expression and inheritance.

DNA and Chromosomes

The lessons explain the structure and function of DNA, highlighting its role as the molecule that carries genetic information. Students learn about the double helix structure, nucleotide bases, and how DNA is organized into chromosomes within the cell nucleus. This section also introduces the concept of genes as segments of DNA that code for specific traits.

Patterns of Inheritance

BrainPOP's genetics modules explore Mendelian genetics, including dominant and recessive traits, genotype versus phenotype, and Punnett squares. These concepts help students understand how traits are passed from parents to offspring and how genetic variation occurs within populations.

Genetic Mutations and Disorders

The platform addresses the causes and effects of genetic mutations, explaining how changes in DNA sequences can lead to variations or genetic disorders. This section includes examples of common genetic diseases and discusses the implications of mutations on health and development.

Modern Genetics and Biotechnology

Advanced topics such as genetic engineering, cloning, and the Human Genome Project are introduced to provide students with a contemporary perspective on genetics. These lessons emphasize the ethical considerations and scientific advancements related to biotechnology.

Educational Benefits of Genetics BrainPOP

Utilizing genetics BrainPOP enhances student engagement and comprehension through its interactive and multimedia-based approach. The platform supports differentiated instruction, allowing educators to tailor lessons according to student needs and learning speeds. The clear explanations and visual aids help demystify genetics, a subject that can often be challenging for learners.

Improved Concept Retention

By combining animation with quizzes and hands-on activities, genetics BrainPOP reinforces learning in multiple ways. This multimodal approach leads to better retention of complex information and fosters critical thinking skills as students apply their knowledge to problem-solving exercises.

Encouragement of Scientific Inquiry

The interactive components encourage students to ask questions and explore genetic concepts beyond memorization. This inquiry-based learning model promotes curiosity and a deeper understanding of genetics as a dynamic field of science.

Support for Educators

BrainPOP provides comprehensive teacher guides, lesson plans, and assessment tools related to genetics. These resources enable educators to integrate the content seamlessly into their curricula while tracking student progress effectively.

Using Genetics BrainPOP in the Classroom

Incorporating genetics BrainPOP into classroom instruction offers numerous advantages for both teachers and students. The platform's structure supports varied teaching strategies and enhances the overall learning experience.

Lesson Planning and Integration

Teachers can use genetics BrainPOP videos as introductory materials to new topics or as review tools to reinforce previously covered concepts. The modular nature of the content allows for flexible lesson planning, accommodating different instructional timeframes.

Interactive Learning Activities

Classroom activities based on BrainPOP's genetics content include group discussions, interactive quizzes, and problem-solving challenges. These activities promote collaboration and active participation, which are vital for effective learning.

Assessment and Feedback

Regular quizzes and formative assessments embedded within genetics BrainPOP modules provide immediate feedback to students and valuable insights for teachers. This continuous assessment helps identify areas needing further clarification and supports personalized instruction.

Additional Resources and Support

Beyond the core genetics BrainPOP content, the platform offers supplementary materials to enhance genetic education. These resources include printable worksheets, vocabulary lists, and extension activities designed to deepen student understanding.

Cross-Disciplinary Connections

Genetics BrainPOP also integrates with other scientific subjects such as biology, chemistry, and health education. This interdisciplinary approach helps students see the relevance of genetics in broader scientific contexts.

Professional Development for Educators

BrainPOP provides training and tutorials for educators to maximize the effectiveness of genetics content delivery. These professional development opportunities ensure that teachers are well-equipped to engage students and address diverse learning needs.

Community and Support Networks

Users of BrainPOP genetics content can access forums and support networks to share teaching strategies, resources, and experiences. This collaborative environment fosters continuous improvement and innovation in genetics education.

- Engaging animated videos explaining complex genetic concepts
- Interactive quizzes and activities for knowledge reinforcement
- Teacher resources including lesson plans and assessments
- Accessible content suitable for diverse learning styles and levels
- Supplementary materials supporting interdisciplinary learning

Frequently Asked Questions

What is Genetics according to BrainPOP?

According to BrainPOP, genetics is the study of genes, heredity, and how traits are passed from parents to offspring.

How does BrainPOP explain DNA?

BrainPOP explains DNA as the molecule that carries genetic information in living organisms and determines inherited traits.

What are genes as described in BrainPOP's genetics video?

Genes are segments of DNA that act as instructions to make proteins and influence physical traits.

How does BrainPOP illustrate the role of chromosomes in genetics?

BrainPOP shows chromosomes as structures made of DNA that contain many genes and are found in the nucleus of cells.

What examples does BrainPOP give to explain

inherited traits?

BrainPOP uses examples like eye color, hair color, and blood type to explain how traits are inherited from parents.

How does BrainPOP describe the process of heredity?

BrainPOP describes heredity as the passing of genetic information from parents to offspring through genes.

Additional Resources

1. Genetics: The Blueprint of Life

This book provides an accessible introduction to the fundamentals of genetics, explaining how genes work and how traits are inherited. It uses colorful illustrations and simple language to help young readers grasp complex concepts. The book also explores the role of DNA and chromosomes in heredity.

2. Understanding DNA: The Code of Life

Focused on DNA, this book delves into the structure and function of the molecule that carries genetic information. It explains how DNA replication and mutation affect living organisms. The book includes real-life examples to demonstrate the impact of genetics in everyday life.

3. Genetics and You: Exploring Your Family Tree

This interactive book encourages readers to explore their own genetic heritage through family history and traits. It covers basic genetic concepts such as dominant and recessive genes and how traits are passed down. Activities and quizzes make learning genetics fun and engaging.

4. The Science of Genetics: From Mendel to Modern Discoveries

Tracing the history of genetics, this book highlights the contributions of Gregor Mendel and the evolution of genetic science. It explains key genetic principles and introduces modern technologies like genetic engineering and CRISPR. The book is designed for middle school students with clear explanations and diagrams.

5. Genes and Heredity

This concise book covers the essentials of heredity, including the role of genes, chromosomes, and DNA. It explains how genetic information is passed from parents to offspring and discusses genetic disorders. The book is ideal for beginners interested in the basics of genetics.

6. Genetics in Action: How Traits Are Inherited

Through engaging examples and experiments, this book shows how genetic traits are inherited and expressed. It covers Punnett squares, dominant and recessive alleles, and genetic variation. The book helps students understand the practical applications of genetics.

7. Exploring Genetics with BrainPOP

Based on the popular BrainPOP educational videos, this book reinforces key genetics concepts using multimedia learning tools. It includes summaries, quizzes, and activities that align with BrainPOP's genetics curriculum. The book is perfect for students who enjoy interactive and visual learning.

8. The DNA Revolution: Genetics and Biotechnology

This book explores the impact of biotechnology on genetics, including cloning, gene therapy, and genetic modification. It discusses ethical considerations and future possibilities in genetic research. The book is suitable for readers interested in the cutting-edge developments in genetics.

9. Inside the Cell: The World of Genetics

Focusing on cellular biology, this book explains how genes function within cells and how genetic information controls cell activities. It covers cell structure, DNA, RNA, and protein synthesis with vivid illustrations. The book provides a detailed look at the microscopic world of genetics.

Genetics Brainpop

Unlocking the Secrets of Heredity: A Deep Dive into Genetics BrainPOP and its Implications

This ebook delves into the world of genetics education through the lens of BrainPOP, exploring its effectiveness, pedagogical approaches, and how it aligns with the latest research in genetics understanding and teaching methodologies. We'll examine BrainPOP's role in bridging the gap between complex genetic concepts and accessible learning for students of all ages and backgrounds, highlighting its strengths and potential limitations. This exploration will encompass practical applications, current research findings, and innovative strategies for integrating BrainPOP into diverse educational settings.

Ebook Title: Decoding the Double Helix: Mastering Genetics with BrainPOP

Outline:

Introduction: The Importance of Genetics Education and BrainPOP's Role

Chapter 1: BrainPOP's Approach to Genetics: A Pedagogical Analysis: Examining BrainPOP's teaching methods, including animation, interactivity, and assessment.

Chapter 2: Key Genetic Concepts Covered by BrainPOP: A detailed overview of the specific genetic topics addressed in BrainPOP's resources (e.g., DNA, RNA, protein synthesis, heredity, mutations, genetic disorders).

Chapter 3: BrainPOP in the Classroom: Practical Applications and Best Practices: Strategies for effective integration of BrainPOP into lesson plans, across different grade levels and learning styles.

Chapter 4: Addressing Misconceptions and Building Conceptual Understanding: Common

misconceptions about genetics and how BrainPOP helps students overcome them.

Chapter 5: Recent Research on Genetics Education and BrainPOP's Alignment: Exploring the latest research in science education and evaluating BrainPOP's alignment with effective pedagogical practices.

Chapter 6: BrainPOP's Accessibility and Inclusivity: Analyzing BrainPOP's features that support diverse learners, including those with disabilities.

Chapter 7: Assessment and Evaluation with BrainPOP: Methods for assessing student understanding and the role of BrainPOP quizzes and activities in formative and summative assessment.

Chapter 8: Beyond the Basics: Advanced Topics and Resources: Exploring advanced genetics concepts and supplementary resources to complement BrainPOP's materials.

Conclusion: The Future of Genetics Education and the Continued Importance of Engaging Resources like BrainPOP.

Detailed Explanation of Outline Points:

Introduction: This section will establish the significance of genetics education in today's world, highlighting the complexity of the subject and the need for effective teaching tools. It will introduce BrainPOP as a valuable resource and outline the ebook's purpose.

Chapter 1: BrainPOP's Approach to Genetics: This chapter will analyze BrainPOP's pedagogical approach, dissecting its use of animation, humor, interactive quizzes, and other features designed to engage students and promote understanding. It will compare BrainPOP's methods to established learning theories.

Chapter 2: Key Genetic Concepts Covered by BrainPOP: A comprehensive list and explanation of the genetic concepts covered in BrainPOP's various modules. This will include topics like DNA structure and function, Mendelian genetics, gene expression, mutations, genetic engineering, and common genetic disorders.

Chapter 3: BrainPOP in the Classroom: This chapter provides practical tips and strategies for educators on effectively incorporating BrainPOP into their lesson plans, including lesson plan examples, cross-curricular connections, and differentiation strategies for diverse learners.

Chapter 4: Addressing Misconceptions: This section will identify common misconceptions students often have about genetics and will explain how BrainPOP addresses these misunderstandings through its content and interactive exercises. Examples of common misconceptions and how BrainPOP tackles them will be provided.

Chapter 5: Recent Research on Genetics Education: This chapter will review current research on effective genetics teaching methodologies, including inquiry-based learning, collaborative learning, and the use of multimedia resources. It will assess how well BrainPOP aligns with these research-based best practices.

Chapter 6: BrainPOP's Accessibility and Inclusivity: This chapter will explore BrainPOP's features that make it accessible to a wide range of learners, including students with disabilities and those from diverse linguistic backgrounds. It will discuss accessibility features like closed captions, transcripts, and adjustable playback speeds.

Chapter 7: Assessment and Evaluation: This chapter will outline effective methods for assessing student understanding of genetic concepts after using BrainPOP, including suggestions for using

BrainPOP's built-in quizzes and other assessment strategies to monitor student progress.

Chapter 8: Beyond the Basics: This section will delve into more advanced genetics concepts not extensively covered in BrainPOP's basic modules, providing links to external resources and suggesting ways to extend student learning beyond the initial introduction.

Conclusion: This section will summarize the ebook's key findings, emphasizing BrainPOP's value as a tool for genetics education and discussing future directions in genetics education and the potential of innovative digital resources.

FAQs:

1. Is BrainPOP suitable for all age groups studying genetics? BrainPOP offers resources tailored to different grade levels, making it adaptable for various age groups. However, the complexity of the content should be considered when selecting appropriate modules.
2. How can I integrate BrainPOP into my existing curriculum? BrainPOP's resources can be used as introductory material, reinforcement activities, or even as a basis for independent research projects. The platform's flexibility allows for seamless integration.
3. Does BrainPOP cover all aspects of genetics? While BrainPOP covers a wide range of genetic concepts, it may not delve into every detail. It serves as an excellent introduction and foundation, but supplementary resources might be necessary for advanced topics.
4. What types of assessments are available through BrainPOP? BrainPOP offers interactive quizzes, games, and activities that assess student understanding in a fun and engaging way. These can be used for formative and summative assessment.
5. How does BrainPOP address the challenge of making genetics accessible to all students? BrainPOP uses clear language, engaging animations, and interactive elements to make complex concepts easier to grasp for diverse learners, including those with learning disabilities.
6. Are there any limitations to using BrainPOP for genetics education? While highly effective, BrainPOP might not be sufficient on its own for in-depth study. It's best used as a component of a broader teaching strategy.
7. How can I differentiate instruction using BrainPOP? BrainPOP's diverse resources allow for differentiated instruction. Teachers can choose modules appropriate for different learning levels and adapt activities to suit individual student needs.
8. What kind of technical requirements are needed to use BrainPOP? Access to the internet and a device capable of running a web browser are the primary requirements. BrainPOP is generally compatible with most devices and browsers.
9. How can I get feedback on student understanding using BrainPOP's resources? BrainPOP provides data on student performance on quizzes and activities, allowing teachers to track progress and identify areas where students might need additional support.

Related Articles:

1. The Effectiveness of Animated Educational Videos in Science Education: This article reviews research on the impact of animation on student learning, particularly in science subjects like genetics.
2. Inquiry-Based Learning and Genetics: A Practical Guide: This article explores inquiry-based learning strategies and how to implement them effectively in a genetics classroom using tools like BrainPOP.
3. Addressing Misconceptions in Genetics Education: A Review of Common Errors and Strategies for Remediation: This article delves into common misconceptions in genetics and offers practical strategies for addressing them using diverse teaching methods.
4. The Role of Technology in Enhancing Science Education: This article examines the broader impact of technology on science education and discusses the benefits and challenges associated with its use.
5. Differentiation Strategies for Teaching Genetics to Diverse Learners: This article focuses on catering to the needs of diverse learners in a genetics classroom, providing specific strategies and examples.
6. Assessment Strategies for Genetics Education: Beyond Traditional Testing Methods: This article explores various assessment methods, including authentic assessments and performance-based tasks, to evaluate student understanding of genetics.
7. Integrating Multimedia Resources into Science Instruction: A Case Study of BrainPOP: This article focuses specifically on the use of BrainPOP as a multimedia resource in a science classroom, providing a detailed analysis of its impact on student learning.
8. The Importance of Hands-on Activities in Genetics Education: This article discusses the role of hands-on activities in reinforcing conceptual understanding in genetics and provides examples of effective activities.
9. Developing Critical Thinking Skills in Genetics: A Focus on Problem-Solving and Inquiry: This article emphasizes the importance of critical thinking skills in genetics and provides strategies for developing them in students.

genetics brainpop: The Galapagos Islands Charles Darwin, 1996

genetics brainpop: Experiments in Plant-hybridisation Gregor Mendel, 1925

genetics brainpop: The Cell Cycle and Cancer Renato Baserga, 1971

genetics brainpop: The Immortal Life of Henrietta Lacks Rebecca Skloot, 2010-02-02 #1
NEW YORK TIMES BESTSELLER • “The story of modern medicine and bioethics—and, indeed, race relations—is refracted beautifully, and movingly.”—Entertainment Weekly NOW A MAJOR MOTION PICTURE FROM HBO® STARRING OPRAH WINFREY AND ROSE BYRNE • ONE OF THE “MOST INFLUENTIAL” (CNN), “DEFINING” (LITHUB), AND “BEST” (THE PHILADELPHIA INQUIRER) BOOKS OF THE DECADE • ONE OF ESSENCE’S 50 MOST IMPACTFUL BLACK BOOKS OF THE PAST 50 YEARS • WINNER OF THE CHICAGO TRIBUNE HEARTLAND PRIZE FOR NONFICTION

NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • Entertainment Weekly • O: The Oprah Magazine • NPR • Financial Times • New York • Independent (U.K.) • Times (U.K.) • Publishers Weekly • Library Journal • Kirkus Reviews • Booklist • Globe and Mail Her name was Henrietta Lacks, but scientists know her as HeLa. She was a poor Southern tobacco farmer who worked the same land as her slave ancestors, yet her cells—taken without her knowledge—became one of the most important tools in medicine: The first “immortal” human cells grown in culture, which are still alive today, though she has been dead for more than sixty years. HeLa cells were vital for developing the polio vaccine; uncovered secrets of cancer, viruses, and the atom bomb’s effects; helped lead to important advances like in vitro fertilization, cloning, and gene mapping; and have been bought and sold by the billions. Yet Henrietta Lacks remains virtually unknown, buried in an unmarked grave. Henrietta’s family did not learn of her “immortality” until more than twenty years after her death, when scientists investigating HeLa began using her husband and children in research without informed consent. And though the cells had launched a multimillion-dollar industry that sells human biological materials, her family never saw any of the profits. As Rebecca Skloot so brilliantly shows, the story of the Lacks family—past and present—is inextricably connected to the dark history of experimentation on African Americans, the birth of bioethics, and the legal battles over whether we control the stuff we are made of. Over the decade it took to uncover this story, Rebecca became enmeshed in the lives of the Lacks family—especially Henrietta’s daughter Deborah. Deborah was consumed with questions: Had scientists cloned her mother? Had they killed her to harvest her cells? And if her mother was so important to medicine, why couldn’t her children afford health insurance? Intimate in feeling, astonishing in scope, and impossible to put down, *The Immortal Life of Henrietta Lacks* captures the beauty and drama of scientific discovery, as well as its human consequences.

genetics brainpop: Using Technology with Classroom Instruction That Works Howard Pitler, Elizabeth R. Hubbell, Matt Kuhn, 2012-08-02 Technology is ubiquitous, and its potential to transform learning is immense. The first edition of *Using Technology with Classroom Instruction That Works* answered some vital questions about 21st century teaching and learning: What are the best ways to incorporate technology into the curriculum? What kinds of technology will best support particular learning tasks and objectives? How does a teacher ensure that technology use will enhance instruction rather than distract from it? This revised and updated second edition of that best-selling book provides fresh answers to these critical questions, taking into account the enormous technological advances that have occurred since the first edition was published, including the proliferation of social networks, mobile devices, and web-based multimedia tools. It also builds on the up-to-date research and instructional planning framework featured in the new edition of *Classroom Instruction That Works*, outlining the most appropriate technology applications and resources for all nine categories of effective instructional strategies: * Setting objectives and providing feedback * Reinforcing effort and providing recognition * Cooperative learning * Cues, questions, and advance organizers * Nonlinguistic representations * Summarizing and note taking * Assigning homework and providing practice * Identifying similarities and differences * Generating and testing hypotheses Each strategy-focused chapter features examples—across grade levels and subject areas, and drawn from real-life lesson plans and projects—of teachers integrating relevant technology in the classroom in ways that are engaging and inspiring to students. The authors also recommend dozens of word processing applications, spreadsheet generators, educational games, data collection tools, and online resources that can help make lessons more fun, more challenging, and—most of all—more effective.

genetics brainpop: Multidisciplinary Units for Grades 3-5 International Society for Technology in Education, 2002 Helps you integrate technology into elementary language arts, social studies, math, and science curricula with dozens of lesson plans.

genetics brainpop: *Now & Ben* Gene Barretta, 2006-03-07 The inventions and inspiration of Benjamin Franklin and how they’ve stood the test of time What would you do if you lived in a community without a library, hospital, post office, or fire department? If you were Benjamin

Franklin, you'd set up these organizations yourself. Franklin also designed the lightning rod, suggested the idea of daylight savings time, and invented bifocals—all inspired by his common sense and intelligence. In this informative book, Gene Barretta brings Benjamin Franklin's genius to life, deepening our appreciation for one of the most influential figures in American history. *Now & Ben* is a 2007 Bank Street - Best Children's Book of the Year.

genetics brainpop: Multidimensional Curriculum Enhancing Future Thinking Literacy

Hava E. Vidergor, 2018-07-17 This book presents an innovative Multidimensional Curriculum Model (MdCM) that develops future thinking literacy among all ages and levels of school students. It combines theory and practice and is highly applicable for policy makers, curriculum coordinators, lecturers at colleges of education, graduate students, and teachers, who are challenged daily to provide meaningful and up-to-date learning. It will aid teachers to prepare learners for the fast-changing world and equip them with skills that will help them control their futures. It combines latest teaching strategies of transdisciplinarity, phenomenon-based, project based, and problem-based learning, in a unique manner so as to develop 21st century skills. More specifically, it aims at developing higher order thinking skills and processes referred to as scientific, creative, and future thinking. It covers core and non-core-curriculum domains, multi and transdisciplinary teaching, as well as designing curricula for the gifted, the able and students at risk. It applies the latest theories on constructivism and carefully selected tools authentically and relevantly to create interest and challenge, addressing learning from personal, global, and time perspectives. Each chapter highlights a strategy or thinking tool, commencing with theory, followed by a unit description and lesson plans. The chapters each end with a final product named the future scenario. This scenario, written by students projecting themselves into the future, is based on accumulated knowledge, summarizes their learning, and illustrates future thinking literacy.

genetics brainpop: The Works of Emily Dickinson Emily Dickinson, 1994 During Emily's life only seven of her 1775 poems were published. This collection of her work shows her breadth of vision and a passionate intensity and awe for life, love, nature, time and eternity. Once branded an eccentric Dickinson is now regarded as a major American poet.

genetics brainpop: Ethics and Game Design: Teaching Values through Play Schrier, Karen, Gibson, David, 2010-02-28 This book addressing an emerging field of study, ethics and games and answers how we can better design and use games to foster ethical thinking and discourse in classrooms--Provided by publisher.

genetics brainpop: Carbon Queen Maia Weinstock, 2022-03-01 The life of trailblazing physicist Mildred Dresselhaus, who expanded our understanding of the physical world. As a girl in New York City in the 1940s, Mildred "Millie" Dresselhaus was taught that there were only three career options open to women: secretary, nurse, or teacher. But sneaking into museums, purchasing three-cent copies of National Geographic, and devouring books on the history of science ignited in Dresselhaus (1930–2017) a passion for inquiry. In *Carbon Queen*, science writer Maia Weinstock describes how, with curiosity and drive, Dresselhaus defied expectations and forged a career as a pioneering scientist and engineer. Dresselhaus made highly influential discoveries about the properties of carbon and other materials and helped reshape our world in countless ways—from electronics to aviation to medicine to energy. She was also a trailblazer for women in STEM and a beloved educator, mentor, and colleague. Her path wasn't easy. Dresselhaus's Bronx childhood was impoverished. Her graduate adviser felt educating women was a waste of time. But Dresselhaus persisted, finding mentors in Nobel Prize-winning physicists Rosalyn Yalow and Enrico Fermi. Eventually, Dresselhaus became one of the first female professors at MIT, where she would spend nearly six decades. Weinstock explores the basics of Dresselhaus's work in carbon nanoscience accessibly and engagingly, describing how she identified key properties of carbon forms, including graphite, buckyballs, nanotubes, and graphene, leading to applications that range from lighter, stronger aircraft to more energy-efficient and flexible electronics.

genetics brainpop: You Can't Wear These Genes Duke, 2010-08-01 Learn About Genes And Heredity Through Clear Text, Photographs, And Graphics.

genetics brainpop: *The One World Schoolhouse* Salman Khan, 2012-10-02 A free, world-class education for anyone, anywhere: this is the goal of the Khan Academy, a passion project that grew from an ex-engineer and hedge funder's online tutoring sessions with his niece, who was struggling with algebra, into a worldwide phenomenon. Today millions of students, parents, and teachers use the Khan Academy's free videos and software, which have expanded to encompass nearly every conceivable subject; and Academy techniques are being employed with exciting results in a growing number of classrooms around the globe. Like many innovators, Khan rethinks existing assumptions and imagines what education could be if freed from them. And his core idea-liberating teachers from lecturing and state-mandated calendars and opening up class time for truly human interaction-has become his life's passion. Schools seek his advice about connecting to students in a digital age, and people of all ages and backgrounds flock to the site to utilize this fresh approach to learning. In *The One World Schoolhouse*, Khan presents his radical vision for the future of education, as well as his own remarkable story, for the first time. In these pages, you will discover, among other things: How both students and teachers are being bound by a broken top-down model invented in Prussia two centuries ago Why technology will make classrooms more human and teachers more important How and why we can afford to pay educators the same as other professionals/DIV How we can bring creativity and true human interactivity back to learning/DIV Why we should be very optimistic about the future of learning. Parents and politicians routinely bemoan the state of our education system. Statistics suggest we've fallen behind the rest of the world in literacy, math, and sciences. With a shrewd reading of history, Khan explains how this crisis presented itself, and why a return to mastery learning, abandoned in the twentieth century and ingeniously revived by tools like the Khan Academy, could offer the best opportunity to level the playing field, and to give all of our children a world-class education now. More than just a solution, *The One World Schoolhouse* serves as a call for free, universal, global education, and an explanation of how Khan's simple yet revolutionary thinking can help achieve this inspiring goal.

genetics brainpop: Uncovering Student Ideas in Life Science Page Keeley, 2011 Author Page Keeley continues to provide KOC012 teachers with her highly usable and popular formula for uncovering and addressing the preconceptions that students bring to the classroomOCothe formative assessment probeOCoin this first book devoted exclusively to life science in her *Uncovering Student Ideas in Science* series. Keeley addresses the topics of life and its diversity; structure and function; life processes and needs of living things; ecosystems and change; reproduction, life cycles, and heredity; and human biology.

genetics brainpop: **International Handbook of Computer-Supported Collaborative Learning** Ulrike Cress, Carolyn Rosé, Alyssa Friend Wise, Jun Oshima, 2021-10-08 CSCL has in the past 15 years (and often in conjunction with Springer) grown into a thriving and active community. Yet, lacking is a comprehensive CSCL handbook that displays the range of research being done in this area. This handbook will provide an overview of the diverse aspects of the field, allowing newcomers to develop a sense of the entirety of CSCL research and for existing community members to become more deeply aware of work outside their direct area. The handbook will also serve as a ready reference for foundational concepts, methods, and approaches in the field. The chapters are written in such a way that each of them can be used in a stand-alone fashion while also serving as introductory readings in relevant study courses or in teacher education. While some CSCL-relevant topics are addressed in the *International Handbook of the Learning Sciences* and the *International Handbook of Collaborative Learning*, these books do not aim to present an integrated and comprehensive view of CSCL. The *International Handbook of Computer-Supported Collaborative Learning* covers all relevant topics in CSCL, particularly recent developments in the field, such as the rise of computational approaches and learning analytics.

genetics brainpop: **The Rise of Rome** Anthony Everitt, 2012-08-07 NAMED ONE OF THE BEST BOOKS OF THE YEAR BY THE KANSAS CITY STAR From Anthony Everitt, the bestselling author of acclaimed biographies of Cicero, Augustus, and Hadrian, comes a riveting, magisterial account of Rome and its remarkable ascent from an obscure agrarian backwater to the greatest

empire the world has ever known. Emerging as a market town from a cluster of hill villages in the eighth and seventh centuries B.C., Rome grew to become the ancient world's preeminent power. Everitt fashions the story of Rome's rise to glory into an erudite page-turner filled with lasting lessons for our time. He chronicles the clash between patricians and plebeians that defined the politics of the Republic. He shows how Rome's shrewd strategy of offering citizenship to her defeated subjects was instrumental in expanding the reach of her burgeoning empire. And he outlines the corrosion of constitutional norms that accompanied Rome's imperial expansion, as old habits of political compromise gave way, leading to violence and civil war. In the end, unimaginable wealth and power corrupted the traditional virtues of the Republic, and Rome was left triumphant everywhere except within its own borders. Everitt paints indelible portraits of the great Romans—and non-Romans—who left their mark on the world out of which the mighty empire grew: Cincinnatus, Rome's George Washington, the very model of the patrician warrior/aristocrat; the brilliant general Scipio Africanus, who turned back a challenge from the Carthaginian legend Hannibal; and Alexander the Great, the invincible Macedonian conqueror who became a role model for generations of would-be Roman rulers. Here also are the intellectual and philosophical leaders whose observations on the art of government and "the good life" have inspired every Western power from antiquity to the present: Cato the Elder, the famously incorruptible statesman who spoke out against the decadence of his times, and Cicero, the consummate orator whose championing of republican institutions put him on a collision course with Julius Caesar and whose writings on justice and liberty continue to inform our political discourse today. Rome's decline and fall have long fascinated historians, but the story of how the empire was won is every bit as compelling. With *The Rise of Rome*, one of our most revered chroniclers of the ancient world tells that tale in a way that will galvanize, inform, and enlighten modern readers. Praise for *The Rise of Rome* "Fascinating history and a great read."—Chicago Sun-Times "An engrossing history of a relentlessly pugnacious city's 500-year rise to empire."—Kirkus Reviews "Rome's history abounds with remarkable figures. . . . Everitt writes for the informed and the uninformed general reader alike, in a brisk, conversational style, with a modern attitude of skepticism and realism."—The Dallas Morning News "[A] lively and readable account . . . Roman history has an uncanny ability to resonate with contemporary events."—Maclean's "Elegant, swift and faultless as an introduction to his subject."—The Spectator "[An] engaging work that will captivate and inform from beginning to end."—Booklist

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means to choose, the limits of empathy, and the inevitability of loss; and like the best of science fiction, it asks them both at the scale of the cosmos, and at the level of a single human heart. The novel's ambition is upheld by soaring prose, which does full justice to the scope of Hansen's imagination. An instant classic. -- Gautam Bhatia, co-ordinating editor of Strange Horizons and author of The Wall and The Horizon

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