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How to Spark Bio Curiosity: An Innovative High School Biology Curriculum

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Instilling Lifelong Curiosity: An Innovative High School Biology Curriculum

This project is a researched creative endeavor focused around the creation of an exemplary high school biology course. This presentation will showcase an original high school biology curriculum designed to ignite students' innate curiosity and empower meaningful learning of core concepts like cell structure, genetics, evolution and ecology. Students revisit key ideas through a spiral curriculum that builds complexity, tackling open-ended problems and collaborating on hands-on inquiries like formulating hypotheses, designing experiments, collecting data and drawing evidence-based conclusions. Tangible projects allow students to demonstrate content knowledge in addition to critical thinking abilities like synthesizing concepts, evaluating claims and applying learning to new contexts. The course moves beyond rote memorization to utilize immersive pedagogies including project-based learning, interactive simulations, and student-driven labs. Issues of ethics, bias and representation in science are incorporated to integrate principles of diversity, equity and inclusion. Students self-monitor progression through the spiral curriculum and receive detailed mastery-based feedback on their skills, as opposed to traditional percentage grading. The curriculum aims to cultivate a supportive environment where students feel empowered to take risks and learn from mistakes. With research-based practices, the course aims to instill lifelong scientific curiosity and equip students with the skills to continually apply scientific concepts and a spirit of inquiry in their everyday lives. The goal is creating scientifically-literate citizens who can evaluate claims, make informed decisions, and enact positive change in a complex world.