



(Source: <https://scholarsteamk12plus.weebly.com/recommended-artistic-skills-for-stem-professionals.html>)

**WORKING FOR AN INNOVATION DEAL USA IN THE 21ST CENTURY**  
**TRABAJANDO POR UN TRATO DE INOVACIÓN EEUU EN EL SIGLO XXI**  
**为实现 21 世纪美国创新之政而奋斗**



## RECOMMENDED ARTISTIC SKILLS FOR STEM PROFESSIONALS

To be able to present scientific, technological, engineering and mathematics concepts to management, clients, colleagues and the general public, STEM professionals could learn some basic skills in arts, including traditional skills such as drawing and painting, and the digital ones available from the Adobe Photoshop, Illustrator, Flash, Premiere, Dreamweaver and InDesign. With the Wrap and Liquify Tools, normal photos of any person could be converted to interesting caricature or cartoon; Illustrator could be used to create line art

technical illustrations; Flash is used to create 2D animations, Premiere is for video editing; Dreamweaver or online hosting service such as Weebly.com could be used for creating websites, and InDesign is for book or journal publication. Many websites provide free instructional materials for learning Adobe programs. The *My Research* page of My Artistic Expressions website publishes some of my writings on Adobe Photoshop skills.

## POSSIBLE GRADE-LEVEL TO INTRODUCE THIS SUBJECT

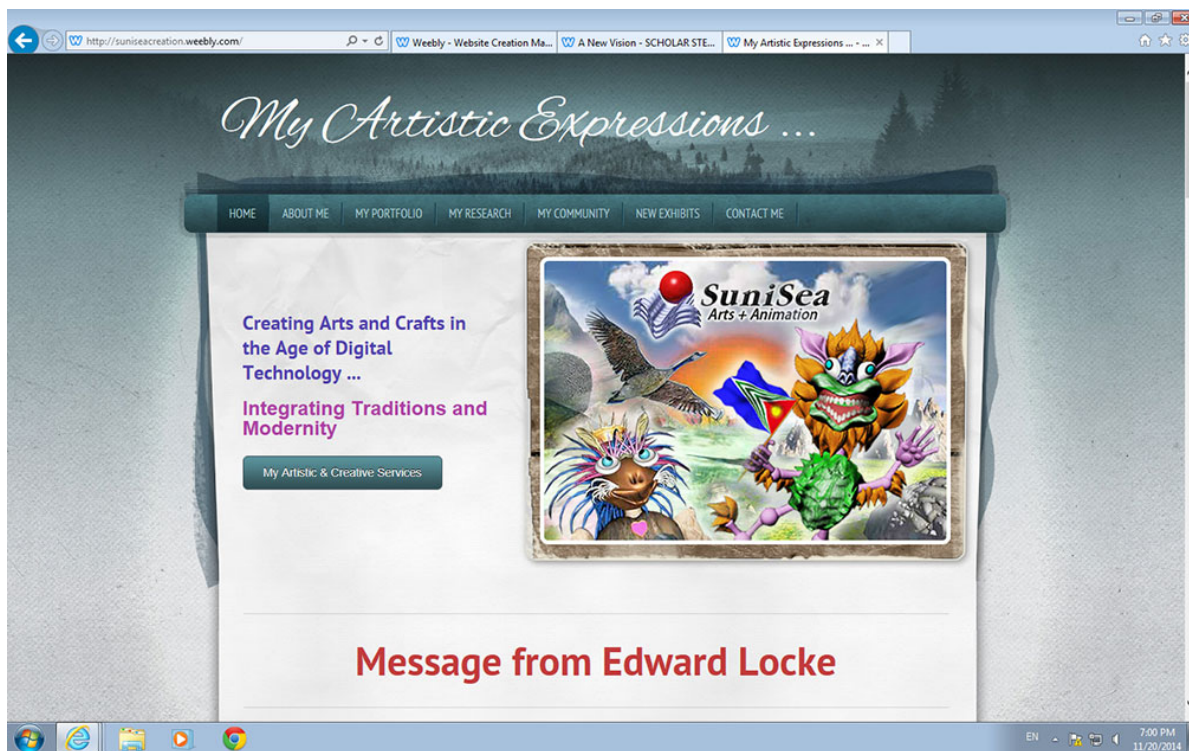
Middle school 6th Grade and up.



The SuniSea Product + Graphic Studio (Edward Locke's Products) website include samples of ecologically friendly and multi-functional product design (under the PORTFOLIO tab), as well FREE online textbooks and other instructional materials on CADD and product design (under the EDUCATION tab).



The SuniSea Graphic Design (Edward Locke's Creative World) website include samples of packaging design (under the Portfolio tab).



The SuniSea Arts + Animation (My Artistic Expression) website includes samples of traditional and digital arts including Flash, 3ds MAX and Maya animations, and Premiere videos (under MY PORTFOLIO tab), as well FREE online instructional materials on Photoshop skills (under MY RESEARCH tab).

## RESEARCH OUTCOMES Navigator:

- (1) **Engineering Foundation** (Introduction to STEAM for K12, Statics for K12, Dynamics for K12, Strength of Materials for K12, Engineering Materials for K12, Statistics & Probabilities for K12, and Engineering Economics for K12);
- (2) **Mechanical Engineering** (Mechanical Design for K12, Fluid Mechanics for K12, Aerodynamics for K12, Heat Transfer for K12, Thermodynamics for K12);
- (3) **Engineering Technology** (CADD & Product Design for K12, Manufacturing Processes for K12, Engineering Programming for K12);
- (4) **Civil Engineering** (Introduction to Computerized Civil Engineering Design for K12, Introduction to Global Positioning System & Land Surveying for K12, Introduction to Structural Design for K12);
- (5) **Electrical Engineering** (Introduction to Electrical & Electronics Devices for K12, Introduction to Circuit Analysis & Simulation for K12, Introduction to Robotics & Programming for K12);
- (6) **Capstone Engineering Design and Research;**
- (7) **Available K12 STEAM Learning Resources;**
- (8) **Mathematics Pre-requisites for Undergraduate Engineering Programs;**
- (9) **Recommended Artistic Skills for STEM Professionals.**

**Freedom and opportunities! You will have the right to a high quality K12 science, technology, engineering, arts and mathematics (STEAM) education!**

**¡Libertad y oportunidades! ¡Usted va a tener el derecho a una K12 educación de alta calidad en ciencia, tecnología, ingeniería, artes y matemática (CTIAM)!**

**自由和机会! 你们将拥有接受高质量的、贯穿幼儿园到中小学阶段的科学、技术、工程、艺术和数学教育的权利!**