CreositySpace - Teacher Professional Development – Workshop 1

Nothing can replace the power of learning through storytelling. Research shows us that sharing personal experiences and introducing relevant role models to students beginning in elementary school are key to seeding early interest in STEM.

What better way to make STEM real for kids, at a time when they ask, “What do I want to do when I grow up,” than introducing them to those uniquely positioned to inspire them—entrepreneurs!

Bringing STEM to Elementary…

Some elementary teachers may not be comfortable teaching STEM concepts due to lack of training. Others feel they don’t have time to teach STEM given the ever-increasing demands from federal and state curriculum standards and testing.

The three goals of the CreositySpace Teacher Professional Development program are flexibility, confidence, and capability. The training dispels the idea that STEM concepts are complicated and inaccessible. Educators leave feeling more comfortable incorporating STEM topics easily into their existing curriculum (including ELA, social studies and math), with the confidence to investigate new ways to utilize STEM concepts to help cultivate a collaborative and innovative environment in their classrooms.

We provide approachable standards-aligned curriculum, tools and ongoing support to empower educators to incorporate STEM every day.

Introduction

- Ice-breaker activity
- Course welcome
- Goals for the day

Tools to integrate STEM into all classes

- Creating a STEM-cessful environment
- Cross-curricular integration of STEM into your classroom (including hands on activities)
    - Plug In’s
    - Full Units/Hands-On Activities

Advanced activities and wrap up

- Extended projects
- Advanced activities
- Wrap Up - goals met?

Additional handouts include:

Book of Ideas – 2-page spread
Copy of workshop slides
List of CreositySpace free resources
Access to Contagion Crushers, Circuit Creators, or Community Designers Digital Module via www.CreositySpace.com. Printed copy of chosen Educator Guide (retail value $100)

Detailed Syllabus

Successful professional development programs must both address an existing educator need and include concrete tools educators can implement immediately in their daily lessons. With these parameters in mind, CreositySpace developed the following 6-hour workshop agenda that can be delivered in-person to any size group:

Introduction and confidence building

- **Ice-Breaker**
  Participants work in small groups to complete an engineering challenge that can be completed with common, everyday materials.
- **Course Welcome**
  The course begins with a brief reminder on how STEM is, and has been, a key part of our communities and workforce.
- **Goals for the day**
  The first activity of the workshop involves discussing and setting goals. The workshop leader will present a summary of participant goals from the pre-survey and folks will be given an opportunity to add to the list. CreositySpace will also outline their goals for the workshop:

  a) Help teachers develop confidence needed to create a STEM-cessful environment in their classroom;

  b) Provide teachers with tools to support a STEM-cessful classroom; and

  c) Open a dialogue between CreositySpace and teachers that provides them with ongoing support as they integrate STEM into their classroom.

Tools to integrate STEM into all classes

- **Creating a STEM-cessful environment**
  - Why STEM?
    A discussion on the statistics behind the STEM economy and the importance of including STEM at the elementary level. We also discuss key strategies for introducing STEM to elementary students.
  - Widening your STEM mindset
    Students are naturally curious about the world around them and entrepreneurs are uniquely positioned to provide inspiration and encouragement in STEM. The key to creating a successful STEM environment is centered around teacher comfort and confidence in including STEM concepts in everyday lessons. Confidence starts with realizing you can understand STEM concepts. Group activities to increase teacher confidence with their focus on “decoding” STEM and illustrating how teachers are already using and teaching the engineering design process in their current lessons.

- **Cross-curricular integration of STEM into your classroom (including hands on activities)**

    - Introduction to CreositySpace materials
      This introduction to CreositySpace materials highlights the cross-curricular nature of the material, the standards alignment (CC and NGSS) – presented in easy to use beaker icons – and the different tools that can be used to integrate STEM into all classes. Tools are characterized as Plug-Ins (15 – 30 min), Full Unit Activities (multiple classroom periods) and Extended Projects (> 1 week in duration).

    - Lesson Types
      Workshop participants will work through lessons associated with CreositySpace modules and the *Book of Ideas* (a young inventor journal). During this time participants will complete and create some of their own "Plug-In" activities. They will also complete some of the full unit science activities and discuss some examples of extended projects.

Advanced activities and wrap up

- Advanced Activities
  Using the *Cool Kid IP Challenge* as an example, we will discuss options for longer, multi-week projects that involve weaving STEM across all subjects. The *Cool Kid IP Challenge* can be described as a "business plan competition meets Invention Convention" scaled for elementary students. Students work in teams to develop products and businesses to address an agreed upon challenge question. Teams present their products to a panel of judges who assess originality, feasibility, market assessment, presentation quality and team work.

- Wrap Up - goals met?
  A final check-in to see if workshop and individual goals have been met. We also will engage in a brief discussion on free resources for STEM integration and ongoing CreositySpace support, so participants can start integrating STEM into their classes immediately. A concluding discussion on "what was the most important thing you learned today and who are you going to share it with?" will wrap up the day.

The course involves a number of hands-on and group activities including:

- An initial ice-breaker activity (30 min)
- A STEM "jargon-breaker" activity (10 min)
- A STEM Storytelling activity (15 min)
- A STEM mini creative writing activity (10 min)
- A STEM vocabulary lesson/activity (15 min) (time permitting)
- A STEM timelining/social studies activity (10 min)
- An experimental activity that combines math, technology and social studies (30 min) (time permitting)
- A STEM experimental activity around circuits (30 min)
- A STEM experimental activity based on light polarization and the light spectrum (30 min)

Participants also receive

- A CreositySpace **Technology Entrepreneurship Curriculum** digital module (one of *Contagion Crushers*, *Community Designers*, or *Circuit Creators*).
- CreositySpace *Book of Ideas* single writing prompt worksheet
- Copy of workshop slides