STEM IT UP!

How to Use STEM It Up!

STEM It Up! is organized around nine content areas as they relate to science, technology, engineering and mathematics. The student projects create an awareness of STEM skills that can become job opportunities.

You can teach the program as a one-semester introductory course. By adding guest speakers, field trips, video presentations and other available resources, the program can become a full-year course.

Program Outline

The nine content areas include:

1. STEM in Business
   13 projects
2. STEM in Health
   12 projects
3. STEM in Engineering
   3 projects
4. STEM in Communications
   3 projects
5. STEM in Innovation
   4 projects
6. STEM in The Environment
   9 projects
7. STEM in Cybersecurity
   2 projects
8. STEM in Consumer Issues
   5 projects
9. STEM in Manufacturing
   6 projects

Getting Started

1. Choose whether to teach the course by content section or in random order.
2. Consider arranging the content areas in an order that is likely to appeal to your students' interests.
3. From each content area, introduce the projects in an order that makes sense for your instructional purposes.
4. Read the student project and teacher notes to become familiar with the content and instructional sequence.

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5. Gather and prepare specific materials for each project.

6. Identify ways that the project topic relates to your students' experiences and interests.

7. Provide additional background information as needed for individuals and the class.

8. Decide whether students will complete the assignment using a paper copy or entering information electronically. If they use the electronic function, use procedures that you have in place for them to submit their work.

9. Encourage students who have a special interest in the content area to explore the topics further.

The Checklists

Use the checklists to introduce each section topic. These checklists will help your students focus on specific issues in each of the topics. Take time to discuss responses.

The Assessments

The purpose of the assessments is to discover what students know. If students choose a different answer than the suggested response, ask them to support their thinking.

Decide when in the course sequence to use the assessments. They can be used at the end of the entire program, or at the end of each section.

Additional Teaching Options

Introduce STEM to students in any regular science, technology, engineering or mathematics course by adapting this resource to use as an introductory unit.

Select individual projects from *STEM It Up!* to introduce a particular concept in any STEM course throughout a semester or yearlong course.

Use selected projects to review concepts in individual courses.