Teacher Exchange
Lesson Plan
Wallace State/Epsco Staffing

Program: Business Administration

Instructor: Selena Skipper

Course Title: Computer Science

Date: 6-16-2014/6-20-2014

Lesson Length:	120 Minutes
Topics:	Industry Needs You!
Overview Annotation	

Background/Preparation

While visiting Wallace State and EPSCO staffing, I observed that many of the departments used math, computational thinking, and computer programming. The pre-engineering department was using geometry and programming in the lesson I observed. I have had many students through the years that asked about game design and according to the multi-media department at Wallace, students must understand programming to do this. Students in the industrial maintenance department must now know programming to operate the robots. In machining I saw that students need to be able to be proficient with a variety of math skills. Employers are requesting students that have these skills. While college can provide these skills, I believe that Computer Science classes in high school can teach all of these skills and better prepare our students to enter the workforce and/or enter technical school or college. This lesson will attempt to spark interest in the computer science field by teaching a math concept through drap and drop programming. Students should be refreshed on the formula for calculating the Sum of Interior Angles for Regular Polygons 180 (n-2). Students should also have completed the Introduction to Snap video at
 https://www.youtube.com/watch?v=iFs3pn7zzoc

Primary Learning Objectives:
This lesson teaches across the curriculum and involves Math, Career Preparedness and Computer Science Principles objectives that are listed below:
Students will develop a correct program to solve a problem (calculating each interior angle of a regular polygon).
Students will employ appropriate mathematical and logical concepts in programming.

Essential Question(s):
How are programs developed to help people, organizations, or society solve problems?

How are programs used for creative expression, to satisfy personal curiosity or to create new knowledge?

How do people develop and test computer programs?
How does one calculate the interior angles of a regular polygon?

Materials, Equipment & Technology
Review of Sum of Interior Angles
http://www.regentsprep.org/Regents/math/geometry/GG3/LPoly2.htm
Get SNAP application on computer and login
http://snap.berkeley.edu/run
Internet connectivity
Computer
Overhead projector (optional)

Content Standards and Tasks:

Career Preparedness ACOS 13) Students will utilize an online learning management system to engage in collaborative learning projects, discussions, and assessments beyond the traditional classroom that are goal-oriented, focused, project-based and inquiry-oriented.
Career Preparedness ACOS 11) Students will demonstrate proficiency in the use of emerging technology resources.
Geometry ACOS 9) Students will prove theorems about lines and angles.
Computer Science Principles 5.1.2 Students will develop a correct computer program to solve a problem.
Computer Science Principles 5.1.3. Students will collaborate to develop a computer program.
Computer Science Principles 5.4.1 Students will evaluate the correctness of a program.
Computer Science Principles 5.5.1 Students will employ appropriate mathematical and logical concepts in programming.

Procedures, Activities, and Learning experiences
This lesson will utilize the following: Individual work, class discussions, online discussions, visuals, and group work.

Assessment Strategies

Performance Assessment on producing a SNAP program that will calculate the interior angles of a regular polygon when given the number of sides. Students will also be asked to do reflective writing about things such as the problems they encountered, debugging, and things that they learned while producing their program.

Lesson Instruction Includes:
Project-Based Learning, Integrated Academics, Employability Skills, Role Playing, Work Ethics and Management skills

Available Student Industry Credentials
Microsoft MOUS Certification or Work Keys Certification

Culminating Project
After several SNAP lessons, students will come up with a project of their own and write a program that will solve a problem of some type.

**** Below you will find a screenshot of the SNAP interface and one way that the students might solve this program.