Curriculum Area: Engineering	**Course Title**: App Creator; Trimester
Grade: 7th	**Date Last Approved:** April 2015; Reviewed: August 2021

Stage 1: Desired Results

Course Description and Purpose:
This course introduces and explores how to create and develop device applications that can be useful to people everywhere . This course is "activity oriented" to further develop student knowledge of engineering and the design process to solve everyday problems. Students use app creation software to design, create, improve, deploy and run applications. This course will prepare students for future high school engineering courses.

Enduring Understanding(s):	**Essential Question(s):**
1. Develop an understanding of engineering design. 2. Develop the abilities to apply the design process. 3. Develop an understanding of the attributes of design. 4. Develop the abilities to use and maintain technological products and systems. 5. Develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	1. What skills prepare you for diverse career opportunities? 2. How can failure produce positive outcomes? 3. What does it take to effectively develop a solution to a problem or need? 4. What does effective teamwork look like? 5. What is the purpose of modeling? 6. Why are teams of people more successful than an individual when solving problems? 7. How do you express yourself and your creativity through engineering?

Learning Targets:
1. Students can apply the design process to create design solutions to solve a problem.
2. Students can apply the design process to analyze solutions using data and communicate their findings.

Stage 2: Learning Plan

I. Germ Guide App
 	
  A. App design and development
  B. Events
  C. Coding with conditions
	Standards Referenced: CSTAS 2-AP-10, NGSS.P8
	
	Learning Targets Addressed: 1 & 2
	
	Key Unit Resources: MyPLTW, Teacher Created Resources
	
	Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	In class activities
Formative	Skills/ Reasoning	Creation of application components
Summative	Product	Creation of Germ Guide app

II. Bug Blasters	**Standards:** CSTAS 2-CS-03, 2-AP-10, 2-AP-19, NGSS.P8

II. Bug Blasters

   A. App design and development
   B. Debugging
   C. Paired programming
   D. Variables

Standards: CSTAS 2-CS-03, 2-AP-10, 2-AP-19, NGSS.P8

Learning Targets Addressed: 1 & 2

Key Unit Resources: MyPLTW, Teacher Created Resources

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	In class activities
Formative	Skills/ Reasoning	Creation of application components
Summative	Product	Creation of Bug Blasters App

III. Build a Body

   A. Design Process
     1. Define a problem
     2. Generate concepts
     3. Design a solution
     4. Build and test solution
     5. Evaluate solution
     6. Present solution

Standards: NGSS.MS-ETS1-1, NGSS.MS-ETS1-2, NGSS.MS-ETS1-4 NGSS.P1, NGSS.P2, NGSS.P6, NGSS.P8

Learning Targets Addressed: 1 & 2

Key Unit Resources: MyPLTW, Teacher Created Resources

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	In class activities
Formative	Skills/ Reasoning	Creation of application components
Summative	Product	Creation of Build a Body App

IV. Disease Tracker

   A. Data Collection
   B. View Layer
   C. Dynamic Lists
   D. Controller and Model Layers
   E. Lists

Standards: CSTAS 2-DA-08, 2-AP-10, 2-AP-13, 2-IC-22, NGSS.MS-ETS1-4, NGSS.P2, NGSS.P3, NGSS.P4, NGSS.P8

Learning Targets Addressed: 1 & 2

Key Unit Resources: MyPLTW, Teacher Created Resources

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	In class activities
Formative	Skills/ Reasoning	Creation of application components
Summative	Product	Creation of Disease Tracker App