



Dr. Debbie O'Doan  
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## Ignite Your STEM: Tinkercad

### **Course Description:**

This is the **third** course in the K-5 STEM Series offered through DIAL. This course is an introduction to using Tinkercad to create 3-D designs, build circuits and simulate their projects. It is fully self-paced and online using Tinkercad, Official Tinkercad Youtube videos, and other web resources. It is a beginner level course in Computer Aided Drafting (CAD) technology; No previous experience with CAD or computer science is needed. With support and direction from the instructor, teachers will create a Tinkercad account, work through assignments posted in Google Classroom, and learn how to use the Tinkercad site with their students. Google Classroom will help teachers integrate Tinkercad into their classrooms. TinkerCad provides a space for teachers to create a classroom, add students, and have the whole class work on 3-D projects and circuits in a safe online environment. The teacher has control over if students work is public or not. Tinkercad is known for being the easiest computer aided drafting (CAD) software to learn and use. It runs in the browser and is free for educators and students. If the schools have 3-D printers in their buildings, students may have an opportunity to print their designs. During the course, teachers will choose between developing a lesson or their own or downloading a lesson to use with their students. Teachers will be encouraged to take this course with other teachers in their school to have discussions and support. Teachers who complete the assignments and teach a Tinkercad lesson (evidenced by a photo, video, or other) will be eligible for credit.

### **Course Objectives:**

Participants will:

- Get excited about teaching STEM and CAD and get students excited about learning STEM and CAD
- Gain confidence in teaching and integrating STEM and CAD lessons
- Learn how to use the Tinkercad site with their students to build skills
- Apply CAD and STEM concepts to lessons.
- Plan for implementing and teaching beginning CAD skills
- Reflect on STEM and CAD teaching practices and strategies
- Expand on awareness of online STEM Resources for educators
- Connect with a community of fellow educators committed to bringing STEM to their students

### **Textbook Information: N/A**

### **Resources provided in the course by instructor:**

STEM Integration & SAMR Technology Integration Model  
Official Guide to Tinkercad Classrooms  
Tinkercad.com

### **Other possible tools used to support teachers:**

Zoom, Google Meet, Teams, Email, Mobile Phones, etc.



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**Attendance Policy:**

This is a self-paced, asynchronous, flexible online course. Participants will show their work to the instructor via google classroom, projects, online meetings, and classroom lessons. Upon completion of course activities, credit will be issued following USF graduate semester schedules (May 26, Aug 25, etc.).

**Course Activities:**

Participants will be required to read articles, watch short videos, complete related activities, teach an integrated Tinkercad lesson to their students and complete a final reflection. Course assignments will be housed in Google Classroom and also sent via email as needed. Course assignments are as follows:

<b>March 15-May 26 (self-paced) (Section 1, Spring 2023)*</b>	
<b>May 30-August 25 (self-paced) (Section 2, Summer 2023)**</b>	
<b>Assignments:</b>	<b>Due date: (Self-Paced)</b>
Read Official Guide to Tinkercad Units Listed: Benefits to Tinkercad Classrooms How to Access Tinkercad How to create a class Understanding Class Codes and Links Inviting Students to Join a class Navigating the Class Dashboard Managing Student Safety Classrooms with Multiple Teachers Assignments with Google Classroom Videos: 13 Tinkercad Instruction Videos	Suggested Pacing/Timing: Approximately 12 hours to complete (2 hours per week for 6 weeks)  *Section 1: All assignments due May 26 **Section 2: All assignments due Aug 25
Solutions to Common Issues Lesson Plan Create student accounts Teach Tinkercad Lesson to students	Suggested Pacing/Timing: Approximately 2 hours to complete *Section 1: All assignments due May 26 **Section 2: All assignments due Aug 25
Reflection, including evaluation of lesson	Approximately 1 hour to complete *Section 1: All assignments due May 26 **Section 2: All assignments due Aug 25

**Evaluation: (See next page)**



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**Evaluation:**

The course is a Pass or No Pass course. Participants who complete the course work will receive a passing grade. Evaluation will be as follows:

<b>Assignments</b>	<b>Points</b>	<b>Weight</b>
Create Account, Log in, Explore site	10	5%
Read Blog Articles and Watch Videos	100	50%
Teach /Integrate Tinkercad Lesson in Class	50	25%
Reflection	40	20%
<b>Total Points:</b>	<b>200</b>	<b>100%</b>

**Participant Behavior, Academic and Plagiarism Policy:**

Ethical behavior, honesty and integrity are expected by all participants in this course and plagiarism will not be tolerated.