

# CUSD 3D Printer Purchase & Usage Procedures

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**Topic:** 3D Printer Selection and Usage  
**Effective:** July 2017  
**Review/Revision Date:**  
**Responsibility:** Technology Services



## **PURPOSE:**

To provide guidance on the safe use of 3D printers in the delivery of curriculum.

## **BACKGROUND OR INTRODUCTION:**

The use of 3D printers is gaining popularity in Ceres schools, and provides students with a dynamic design opportunity. As 3D printers utilize a relatively young technology known as nanotechnology, this document outlines minimum safety requirements for safe use that must be implemented within the Ceres Unified School District.

## **PROCEDURES:**

### **Selection:**

1. 3D printers must be used to meet curriculum expectations.
2. Certain design features of specific printers are unique and appear to be designed as a control technique, whereas others appear to be a design of convenience. To ensure safety for staff and students, **3D printers must only be purchased from the approved for use list** provided by Technology Services. These models have been approved because they meet the following criteria:
  - a) To protect against physical hazards, select a model of 3D printer that is enclosed or guarded from moving parts, pinch points and the heating plate.
  - b) To control emission hazards, select a model of 3D printer that is fully enclosed, has a good seal and is outfitted with a lock mechanism that prevents opening during use.
  - c) The power supply AND the printer assembly must be UL (Underwriters Laboratory) Standards for safety.
3. Where a unique or new 3D printer model is on the market but not yet or where a school is to receive a donated 3D printer, the model should be reviewed in consultation with Technology Services. If an older model is currently in use and is not enclosed, contact the Technology Services Department for assessment and recommendations for safe use.
4. If more than (2) 3D printers are being ordered for a classroom, additional M&O approval will be required prior to purchase to review electrical capacity and ventilation requirements.
5. All 3D printers must be purchased through a Purchase Order.

### **General:**

1. A malfunctioning 3D printer poses a fire hazard. Therefore, projects that require an extended run time (beyond the school day) must be printed in a room that complies with Fire Code requirements (fixed-temperature-rate-of-rise heat detector or smoke detector).
2. Follow manufacturer's instruction for the unit and review the CUSD 3D printer safety and instructional video.

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3. Students using 3D printers must receive instruction on the safe use of the specific model of 3D printer they will be using prior to use. Included in these instructions should be general hazards associated with 3D printing.

### **Feedstock:**

1. Use vendor approved feedstock that is obtained from Technology Services approved suppliers (refer to the Standard Supply List).
2. Only PLA feedstock is to be used in elementary schools.
3. Use of other filament feedstock must be approved by Technology Services.

### **Ventilation:**

1. Printers should be installed in a designated 3D printer work area with adequate space.
2. As recommended for elementary sites, printers shall be installed where students do not have direct access. Limit access to students.
3. The room where the 3D printer will be located must have general ventilation.