3D PRINTING

Ideas, strategies, and resources for your classroom

The 3D printer

Entry level 3D printers can be affordable for schools...

The concept of a 3D printer and its implementation can be hard to envision, but the concept is as simple as melting plastic in a pile. The printer's arms and jets are very methodical and some print jobs take hours to complete. Projects on kickstarter.com are geared towards meeting the demands of the everyday consumer, which in turn benefits education through innovative and affordable new products!

1

MAKERBOT

The most popular model with schools. Affordable and reliable.

2

CUBE 3D

Plug-and-play with simple interface, but the filament is slightly more expensive.
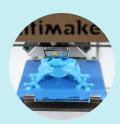
3

3DOODLER PEN

Very affordable, but more difficult to use with early learners.

PreK

Build manipulatives
Objects from books
Classroom rewards

K-2

Invent new things
Hands-on designs
Authentic items

3-4

Print a slice of heart
Create solutions
Re-engineer "stuff"

Our favorite 3D printer resources:

Lesson plans for 3D printing projects are still sparse, but the possibilities are endless...

Kathy Shrock's 3D Printing Guide:
http://goo.gl/HoxQUz

Edutopia article w/ tips on 3D printing:
http://goo.gl/CjxhZj

Go mobile:
123D Design Apps (iTunes store)
TinkerCAD (Web-based)
MakerBot companion apps (mobile)

Apply for a 3D printer "bundle" through the Makerbot Academy and DonorsChoose:
http://goo.gl/IWNNQl

Speak the language: A broad variety of file types are used with digital designs. Just as the .doc and .xls extensions are well-known, with 3D printing, .OBJ, .STL, and .VRML are common filetypes that you'll see for 3D objects.

"Be prepared to troubleshoot"

As with any new technology, there are issues that you'll need to work through: build plates need to be levelled, prints won't stick to the build plate, extruders get clogged, filament gets tangled...assign a student team to become the experts for the school and they will keep you in business!

You may also consider an extended warranty or base your 3D printer decision on the type of warranty offered from the manufacturer. In the blossoming field of 3D printers, it is wise to add that extended warranty on your device!

3D PRINTER "MUST-HAVES"

thingiverse.com is a treasure trove for 3D files of all sorts. Monitor students closely, however, because there are some files that are slightly more mature than you may want!

Google Sketchup is a free download that gives students the ability to edit and design their own creations or modify other's handiwork.

MakerBot desktop (comes with printer) gives you all you need to get started and may suffice for a basic classroom setup.