

Title: PrinterForm

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Abstract:

3D printing and CAD modeling have become widely used in engineering and design practices. Fundamental to STE(A)M and design education are the skills required to convert abstract computer models into tangible prototypes. However, most schools lack the funding or resources necessary to maintain makerspaces or even a single 3D printer. PrinterForm helps the user convert any conventional laser or inkjet printer into a 3D printer. All it takes to make an approximate 3D model is to upload an STL CAD file and fold it following the fold lines generated by PrinterForm. Printerform is faster and more accessible than traditional 3D printing, but it is not intended to replace traditional 3D printed components in PLA or ABS. PrinterForm can be utilized to introduce 3D printing and basic CAD modeling (such as TinkerCAD for kids) in educational settings where these tools would not otherwise be available.

To create a prototype, create or choose a model you want to use using any 3D modeling program or online 3D print gallery. Export the selected portion into an STL file format. Next, submit your STL file to PrinterForm. Follow the instructions on the website and choose the arrangement that most closely matches your object after you've submitted your file. After choosing the layout, you may adjust your selection using the sliders and drop-down tools to the right of your file preview. Once your selection and file layout are finalized, examine and confirm your print preview and choose to download as a PDF file format. Save your file so that it can be easily accessed and printed. Print your saved PDF file on 8.5" x 11" paper using a regular inkjet or laser printer. After printing your file, fold the sheet into your 3D shape according to the indicated fold dots and lines. The layout style you choose, together with the size and form of your file, will affect where the fold lines and dots are located. PrinterForm can be accessed here:

<https://printerform.com/>