Overview
Providing students with access to 3D printing technology has many benefits including:

- Increasing students interest and engagement across multiple subject disciplines.
- Providing practical applications for mathematics, science, computing and design technology.
- Adding value to STEM activities.
- Developing life skills such as critical thinking, problem solving, creativity, innovation and perseverance.
- Developing students practical design skills and preparing them for careers in multiple disciplines that utilise additive manufacturing technology.

Although many schools may recognise the benefits of 3D printing technology, there are many barriers to introducing and implementing the technology in schools. The main aim of the CREATE Education Project is to help and support schools in overcoming these barriers by providing resources, help, support, professional development and access to our education community. We even provide a FREE 3D Printer Loan Scheme that allows schools and students to experience the technology. However the one barrier we can’t help schools with is the budget barrier. Although the cost of 3D Printing technology has dropped significantly in recent years, school budgets are being increasingly squeezed and many schools simply just do not have the spare budget to be able to invest in purchasing a 3D Printer.

With this in mind, we have put together some ideas to help schools explore ways to raise or access the funds required to purchase a 3D Printer.
Education Grants & Awards

There are a plethora of grants and awards available for schools from a variety of industry associations, charitable organisations and trusts. However these often prove difficult to access, most grants and awards have a bidding process so you would require time and effort in order to apply. Many of the grants are available to fund specific projects, so you may need to plan a project or activity that addresses the requirements of the bid in order to be considered eligible. Many of the grants are dependent on how many people it will impact and the impact the project will have on the recipients. When developing a project and putting together your bid, think about how the project and 3D Printer specifically can benefit more people, perhaps you could provide training, workshops or activities to teachers or students in other schools or to the local community.

Another barrier to accessing grants is knowing what is available. The CREATE Education project will publish news of any grants that we become aware of on our funding resource page at www.createeducation.com/resource/3d-printer-funding/ However we do not have information of everything that is out there.

1. FundEd have a large searchable database of educational grants programmes worth over £4m that you can access along with guidance notes and bid-writing advice for completing grant applications. However to access these resources you need to be a registered member of FundEd which has a small annual subscription fee.

Learn more at: www.funded.org.uk

2. Grants4Schools also provide a comprehensive funding information service that is updated several times a week. A free 28 day trial is available, then schools can subscribe for a small subscription fee with the option to subscribe for different timescales (from 1 month). They also provide funding guide books including one specifically for STEM grants.

Learn more at: www.grants4schools.info
Business Enterprise Programs

Why not make a 3D Printer pay for itself by using the technology with the students to run a business enterprise program?

Follow the steps below to run your enterprise activity.

1. First apply to the CREATE Education Project FREE loan scheme which will allow you to borrow a 3D Printer for up to 4 weeks.

2. Set each year group a challenge to design a small item that can be 3D printed and sold. The smaller the model is, the less it will cost and the quicker it will be to print. Start by brainstorming some ideas, initial ideas could include bookmarks, key rings or pendants. Personalised items would require more effort but could potentially raise more funds.

3. Split the students into teams with different students undertaking different roles for example project manager, design team/manager, production team/manager, accountant, sales team and marketing team.

4. Each team should select and idea for a small 3D printable product and a suggested sale price. Team members (role dependent) should then design the item, calculate the production cost and profit per item, produce a production schedule and make the items for sale, prepare marketing materials, promote the products and organise the product sales.

5. Once the 3D printer Item arrives, for the duration of the loan, products can be produced to order or produced in bulk prior to a sales event.

6. Following sales of the products students can calculate final profits, which can be contributed towards your 3D printer purchase fund.

Visit the CREATE Education blog to learn how Kennoway Primary School ran a successful 3D printing Enterprise program:
www.createeducation.com/blog/kennoway-primary-school/
Local Business Sponsorship

Businesses are often keen to support their local communities and most larger companies have dedicated CSR (corporate social responsibility) budgets available to support community projects.

Small-medium sized business may not have established CSR budgets, however they will still have a marketing budget. You may be able to access these marketing budgets by offering some sort of sponsorship, promotional or PR opportunity for them in return for a donation, especially if parents and the wider school community are their potential customers.

In particular you may want to research and target local engineering and technology businesses, they often have a vested interest in improving the technical skills of students to address their recruitment concerns.

In order to gain support from local businesses they need to be aware of your cause. Why not challenge students to raise business sponsorship for your 3D printer? First they could research and identify prospective local businesses, then as a persuasive writing activity students can write letters or emails to individual businesses. Letters should include details of what the sponsorship would be used for (eg a 3D printer to run a specific project), benefits to the students and what promotional activity they will do to promote the business and publicise the sponsorship.

If the students manage to raise local business sponsorship, they should ensure they follow up with the business in order to acknowledge and maintain the relationship as this may lead to further goodwill towards the school, for example:

- Students could write to thanking the business privately for their sponsorship or donation.
- The school could thank the business publicly for their support for example through the school newsletter, website and social media channels in order to publicise the business involvement.
- Once you have received your 3D printer, invite representatives from the business into school to see the printer in operation. This would also provide an opportunity for the local press to visit the school and promote the partnership/donation, benefitting both the school and the business.
- When students are using the printer for new project, they could also provide updates and photographs to the business on its use and benefits.

PTA Support

Many schools have active Parent Teacher (or Friends) fundraising organisations that actively raise money for the school to help enrich the school experience for the students. As 3D printers are not standard school equipment, perhaps the PTA would consider funding or part funding the purchase of one?

Why not ask the students to write a “funding application” to the PTA? In their application they can describe what they want, how much it will cost, what they will use it for and how it will benefit themselves, future students and the school community in general.
Fundraising Events

If all else fails, why not consider organising some specific fundraising events, to raise money for the 3D printer. Perhaps a group of students can be tasked with this or you could enlist the support of the PTA in arranging a specific fund raiser.

One of the CREATE Secondary School Education Hubs have been able to buy a new 3D printer each year for the last 3 years by organising an annual “Race Night” event for parents, which takes place out of school hours at a local venue.

Match Funding

Many large companies offer match funding to support their employees fundraising efforts. It is always worthwhile asking parents to enquire with their employees if they offer such schemes. If any parents can access this funding, see if they would volunteer to help with your fundraising efforts. For example if they support students in their business enterprise project in some way, match funding from their employer would double the amount raised.

Alternatively the school PTA may be able to assist with organising or identifying an event or fundraising activity that could be match funded if one of the PTA volunteers can access match funding.

You can learn more about match funding and download a template letter to parents at: http://www.pta.co.uk/funding/faqs-match-funding.aspx
Crowdfunding is a relatively new method of raising funds for a specific project, it works by posting a project on an online crowdfunding platform and promoting it in order to engage and ask a large amount of people for a small amount amount of money.

With crowdfunding, in return for “pledges” you can offer an incentive or reward. You could for example offer 3D printed incentives in return for donations - set a minimum donation to receive each item. Small items eg keyrings for small donations (eg £5-10 or more) and a more desirable or personalised items for larger donations. However remember that whatever you agree to provide, you must print and send to donors at the end of the campaign if it successful.

In order to launch a crowdfund campaign there are a number of considerations:

- **What is the project?**
  Rather than just to raise money for a 3D printer, why not tailor the campaign to a specific project e.g. A 3D printer to run X project in order for students to benefit in Y way.

- **What is the benefit of this project to the school, the students and/or the wider community?**
  Having clear and defined benefits can encourage donations, especially from your direct and local networks.

- **What is the duration of the crowdfunding campaign?**
  Campaigns often get the most donations at the beginning and towards the end of the campaign, long campaigns can lose momentum, so it may be better to have a shorter more intense campaign. When students are using the printer for new project, they could also provide updates and photographs to the business on its use and benefits.

- **How will you promote your crowdfunding campaign?**
  The success of your campaign will depend on how well you promote it, first you need to encourage parents and your wider school community to donate to the campaign but then you need to encourage them to spread the word to their friends and connections in order to get more donations, remember the key to success is getting lots of small value donations. Use the school’s social media channels, newsletter and even the local press to publicise the campaign.

- **What crowdfunding model do you want?**
  Depending on which crowdfunding platform you use, you may have to reach your target in order

- **Which crowdfunding platform will you use?**
  Take your time to research the different platforms, some charge higher commissions than others, some have different models for accessing the funds, some are more well known so may attract more outside interest. Kickstarter is one of the most well known platforms, but may not be the best option, Nesta have a useful directory of crowdfunding platforms to help you to decide which one is best for you at [http://www.crowdingin.com/](http://www.crowdingin.com/)

If you are thinking about crowdfunding, Nesta have also produced some handy tips to help you: [http://www.nesta.org.uk/news/crowdfunding-tips](http://www.nesta.org.uk/news/crowdfunding-tips)

The FAQ’s on the Nesta CrowdingIn website are also very useful source of further information [http://www.crowdingin.com/faqs](http://www.crowdingin.com/faqs)
More Ideas

We hope that this guide will provide you with some ideas for how you could fund a 3D printer purchase. Don’t forget to keep visiting our funding page to see what grants are available that the CREATE Education Project are aware of. We don’t know everything, so if you know of any potential funding sources or have any other funding ideas or tips, please let us know so that we can share them with the community.

We also want to hear about your success stories, did you use any of the ideas in this guide? How did you raise money to purchase a 3D printer?

If you know of any relevant grants or have any funding ideas, stories or tips to share please contact:

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