How To Fix Three Of The Most Common 3D Printer Problems

When your 3D printer gives up, you don't have time to wait for the experts. Here are the answers to three of the most common problems that occur with today's 3D printers and how to fix them.

You were all set to go and then the worst happened, your printer decided not to attach properly to the surface it was printing onto. This is probably the most common of all issues faced by 3D printer users.
This first layer is, of course, what binds the rest of the printing process so once this fails the whole job will not print to the specifications you set and most probably warp. This is why it's so important to figure out the problem and correct it as soon as possible.

There might be a number of reasons for this failure but the most likely is that your printer is not level calibrated properly. This can cause initial problems with adhesion but also cause your print to warp later down the line. Get it right now and save yourself a lot of trouble later into your print.

Start by adjusting your bed temperature and keeping it at a sufficiently high temperature to prevent the plastic from cooling down and curling, as it tends to do when contracting. If this first layer still curls upwards, set the temperature a little higher until you are happy with the results.

Secondly, check that your vertical axis, or your Z-axis, is at the correct height somewhere between 0.10mm and 0.25mm. This height should allow the printer to create the right amount of pressure between nozzle and bed as it prints that vital first layer.

Lastly, check your printing bed is clean and free of grease or anything that might prevent it from sticking properly.

Another potential and all too common problem is stringing, or to put it another way, when strands of plastic look like cobwebs spread across the object you're printing. This can occur when the nozzle leaks out filament that then gets caught on to the object. It's not easy to remove these 'cobwebs' and often results in the object having to go through a re-print. Before you waste precious resources, there are a couple of options you can try to prevent stringing.

Try lowering the heating temperature slightly to minimise stringing, experiment with a little at a time. Then try looking at the retraction settings on your printer. These values help pull extra plastic back up and away from the object being printed and may solve your stringing problem. If the retractor is set too high it can leave bobbles on your printed object and too low will contribute to the stringy appearance. Refer to your manufacturer's ideal settings and adjust a little at a time until the problem is eliminated.

If these options don't work consider adjusting the travel speed of the printer and reducing or increasing it where necessary.

Lastly, we take a look at the problem of overheating; an issue that can quickly become a disaster with 3D printers. Objects can become warped and misshapen when this occurs and it usually happens as the working layer decreases in size, as in printing a tower for example.

The best way to combat this problem is to cool each layer down. Your printer is probably equipped with some kind of fan already but there's no harm in investing in another one to make this cooling process quicker and more effective.

Other alternatives include lowering the temperature, although it can be tricky to balance quality of print with the correct temperature. This should really only be used as a last resort. Otherwise try reducing the overall speed of the printing process. Slowing the whole thing down should give each of your layers time to cool adequately before another layer is added.

While 3D machines are certainly the technology of the future, their delicately balanced operational parts can cause real issues. Hobby printers will find these problems are all too common but these tips will go some way in helping you to address the most common problems that arise when printing. If nothing works, then it's time to call in the experts.