3D printing materials are called filaments. The range of filaments available for use with 3D printers is continually expanding. The most common filaments used by schools are polyactic acid (PLA) and acrylonitrile butadiene styrene (ABS).

Variations

**ABS:** An oil-based filament that's the same material as Lego. It is durable and an electric and thermal insulator.

**PLA:** A biodegradable, brittle filament made from corn starch or sugar cane. This filament is suited to fast prototyping, when models do not need to last longer than six to 12 months.

**Multi-coloured:** A translucent multi-coloured filament that creates layers of colours.

**Glow in the dark:** A filament that glows after exposure to light.

**UV reactive/Sunburnt Chameleon ABS:** A filament that changes colour when exposed to the sun or UV light. The colour change happens almost immediately.

**Nylon:** An extremely durable, rubberised filament resistant to chemicals. This filament is suitable for models that require some flexibility and give.

**Timber:** A filament containing wood fibres; the wood fibres solidify when printed. This filament is suitable for sculptures and fixtures: it can be finished using traditional techniques such as varnishing and polishing.

Loading filament

The way to loading filament varies with each 3D printer. The following is a generalised guide. Please read your printer’s specific instructions.

1. Place the filament onto the printer spool. Feed the filament through the printer's plastic guide and into the print head.
2. Using the associated printer software, command the printer to extrude the filament. The nozzle will begin to heat.
3. When the nozzle has reached the desired temperature, gently push the filament until the extruder motor grabs it and starts pulling it.
4. The filament will begin to extrude through the nozzle.
5. Using the associated printer software, command the printer to stop the extrusion process.
6. Remove the extruded plastic from the nozzle.

Helpful links

- 3D Printing edStudio
- Access Key S713169554

Information privacy policy: Students are not required to provide personal information to use 3D printing filament out-of-the-box.

Purchasing and procurement: Purchasing guidelines can be found on OnePortal. See your Principal or relevant Finance Delegation Holder for more information.

Please note: The Department of Education and Training does not endorse the use of any product or supplier. Before making any decision to purchase, ensure you have assessed, at a minimum, the product’s educational benefits, value for money, risk, and warranty options.

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