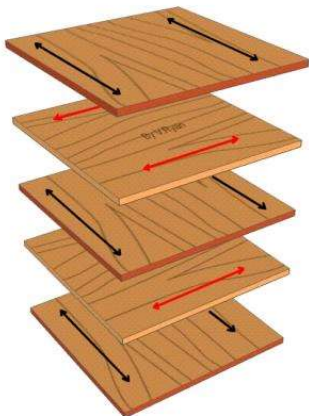# What is a passive amp?

A passive amplifier **amplifies sound** by passive means. In other words, it does so without the use of external electrical power or additional energy of any sort.

Passive (Adjective) - (of a circuit or device) containing no source of electromotive force.

Iterative design process

Iterative design is a circular design process that models, evaluates and improves designs based on the results of testing.

The design process in more detail

- **Brief** – Outlines your client's problem and what they would like you to do.
- **Research** – This can consist of several things such as a Product analysis, Market research, Target audience research, materials research, etc.
- **Specification** – A list of criteria that your designs must have, this information is based on the results of your research.
- **Design ideas** – It's always best to produce a range of ideas to maximise options for your client.
- **Development/modelling** – Taking the best parts of your designs and producing a model – Depending on the results of this modelling you may need to go back to research.
- **Final design** – This is where you work out the final dimension, materials and processes.
- **Evaluating/Testing** – Based on the results of this you may need to go to research and designs.

Iteration in the Engineering Design Process - YouTube

Plywood

Each individual piece of wood is called a **veneer** – Veneers are thin sheets of wood. The direction of the grain alternates.
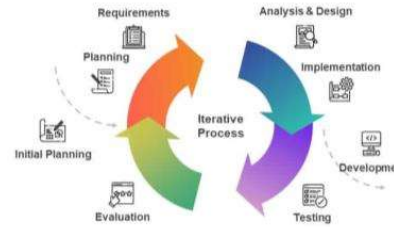
Plywood comes in many thicknesses; however, they will ALWAYS have an **odd** number of veneers. This provides strength and ensures the wood doesn't warp.

Veneer

Veneer sheets are also used to cover man-made woods to give the appearance they are natural. They can also be used as a decorative technique.

Templates, jigs and patterns

Tools can be used by manufacturers to ensure identical products are produced efficiently and to a high quality. These include:

Templates
Patterns
Jigs

Templates
A template is a tool used to mark out shapes repeatedly. For example, if 100 acrylic keyrings are all to be shaped so they are the same, a template could be made to draw around for speed and consistency.

Patterns
A pattern is a collection of shapes (similar to a template) that are attached to the surface of the material to aid shaping it. For example, a tailor making a garment could use a pattern to mark the required shapes for the garment onto a piece of fabric to then be cut out and assembled.

Tailors using a pattern

Tools used to make the Amp

Coping saw – Used to cut wood and plastic. The thin blade means this saw can easily cut curves.

Hand files – They come in a range of shapes and sizes. Used to smooth wood, plastic and metal.

Centre punch – Used to make an indent in wood/metal before drilling a hole. This ensures the hole is drilled in an accurate place.

Cordless drill – Comes with many different attachments. Can be used to drill holes and tighten screws.

Jigs
A jig is device used to hold a piece of material and guide cutting tools and they are used to ensure the process can be repeated accurately and to a high quality. For example, a carpenter making a hole of a specific alignment and depth may use a jig to aid accuracy.
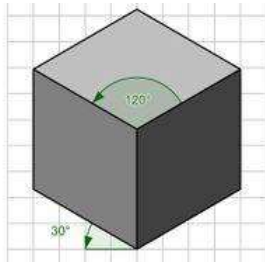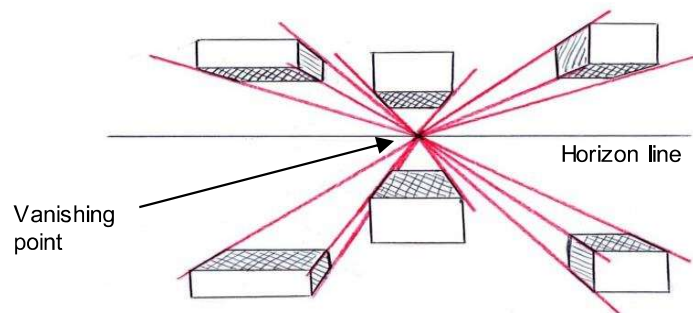
Drawing styles

Isometric drawing

Isometric drawing is a method of drawing 3D that does not contain perspective. This means that the object does not get smaller the further away it is.

Isometric drawings are a good way to show measurements and how components fit together, and is used in technical drawing, often by engineers and architects.
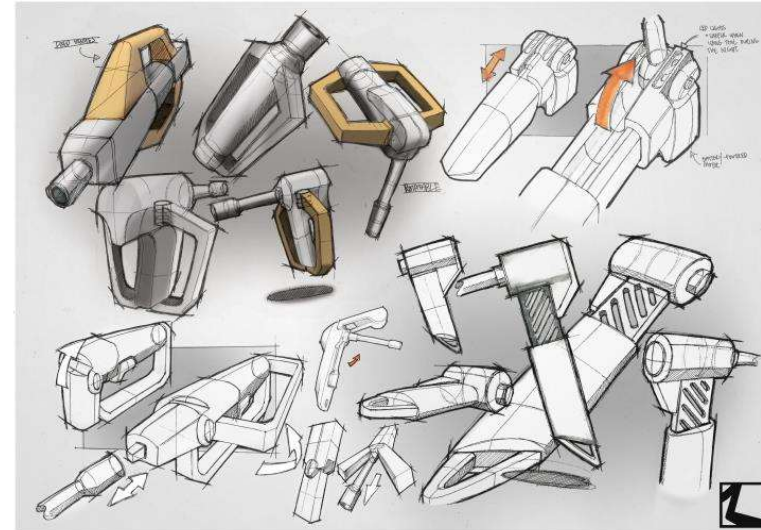

One-Point Perspective

One point perspective is a drawing method that shows how things appear to get smaller as they get further away, converging towards a single 'vanishing point' on the horizon line. It is a way of drawing objects upon a flat piece of paper (or other drawing surface) so that they look three-dimensional and realistic.

Rendering

Rendering is when colour is added to a design. You can render using Pencil, pen or paint.

Two-Point Perspective

Two-point perspective is a 3D drawing in which two vanishing points are used. This method is commonly applied to draw buildings or objects viewed from a corner, displaying two sides of the object instead of just one.