

Calculating percentages

To find	1%	➔	Divide by 100
	10%	➔	Divide by 10
	25%	➔	Divide by 100
	50%	➔	Divide by 100

What is 4% of 9?

You can do 0.04×9 or $(9/100) \times 4$

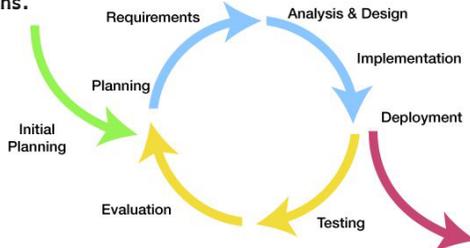
Design strategies

Collaboration

Working with others is an excellent way of gaining different ideas and feedback. Many companies use teams of designers with different tastes, ideas and specialties to allow a diverse range of opinions.

Iterative design

One of the most effective ways to solve a problem is to use a cyclical approach. Models and prototypes are created and then tested and analysed. This is then improved upon by further research/remodeling and feedback. Designs will go through many iterations.



User-centred design is a different style of designing from iterative design, as it bases the design of a product around the needs of the target market rather than continual iterations. The user is questioned and consulted throughout the whole process. This could be done by questionnaires, videos, behavior analysis and so on.

Systems approach to designing

Designing certain products like electrical devices often requires planning in a logical and ordered method. This approach is particularly useful in electronics where there is an input, process and output, as each stage has to perform a specific function before moving on to the next step.

Surface treatments and finishes

Done to improve the material functions or properties as well as the aesthetics.



Metal
Metal lacquer
Polishing and brushing

Polymer
Vinyl decals
Engraving
Heat transfer
Hydro-graphic
Rubberising spray

Timber
Varnish
Oil
Stain
Wax is unsuitable as it is not fit for food consumption products

Founded by Giovanni Alessi in 1921

ALESSI

the company started producing a range of metal tableware. Over the years their range has increased to many other household items. From 1955 they began collaborating with designers from outside of the company. They are recognizable products by using stainless steel mixed with bright blocks of colour, fun characterful designs and chrome finishes.



Aldo Rossi

Ettore Sottsass



Philippe Starck



Famous designers they have collaborated with

Inclusive design



It is important for any new product to try to be inclusive. A designer should maximize the number of people a product will appeal to whilst being mindful of who it could exclude



Thermoforming: (thermoplastics) Generally more flexible when heated. Polymer chains are loosely entangled with very few cross links. They can be formed into complex shapes and reformed multiple times. Commonly used in vacuum forming, injection moulding and blow moulding processes. Easier to recycle.

Thermosetting: (thermosets) Generally more rigid. Once formed or they cannot be reset. More cross links in the polymer chains which stops the molecular chains from moving. Generally harder and more brittle. Excellent electrical insulators and good resistance to heat and chemicals. Tend to burn when heated rather than melt-making it difficult to recycle.

Physical properties

Consider the different properties when selecting your material

Absorbency

The tendency to attract or take on an element-usually liquid

Density

The mass of material per unit of volume-how compact the material is

Fusibility

Ability to be converted through heat into a liquid state and combined with another material before cooling as one

Thermal conductivity

Can conduct heat

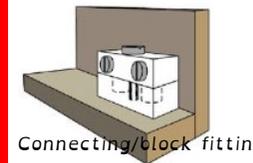
Electrical conductivity

Can conduct electricity?

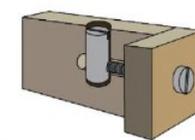
Standard timber components

Knock down fittings (KDF)

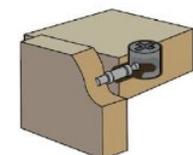
Used for self assembly furniture and kitchen units



Connecting/block fitting



Cross dowel fitting



Cam lock fitting

Screws and nails

Can come in lots of forms such as slotted, phillips, pozidrive, allen and torx (screws). Round wire, panel pin, clout nail, oval wire, task and lost head (nails)

Dowel rods

Circular sections of timber which is pre-cut and ridged, used in joints

Hinges

Used to attach doors, windows and other openings.

Most commonly made from metal. Can come in a variety of forms including butt hinges, flush, butterfly, piano, concealed and tea

PIZZA CUTTER

