



Kirsten Mason

BSc. Product Design
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Craft Knife



Age: 48
Interests: crafts, gardening and baking
Occupation: Artist



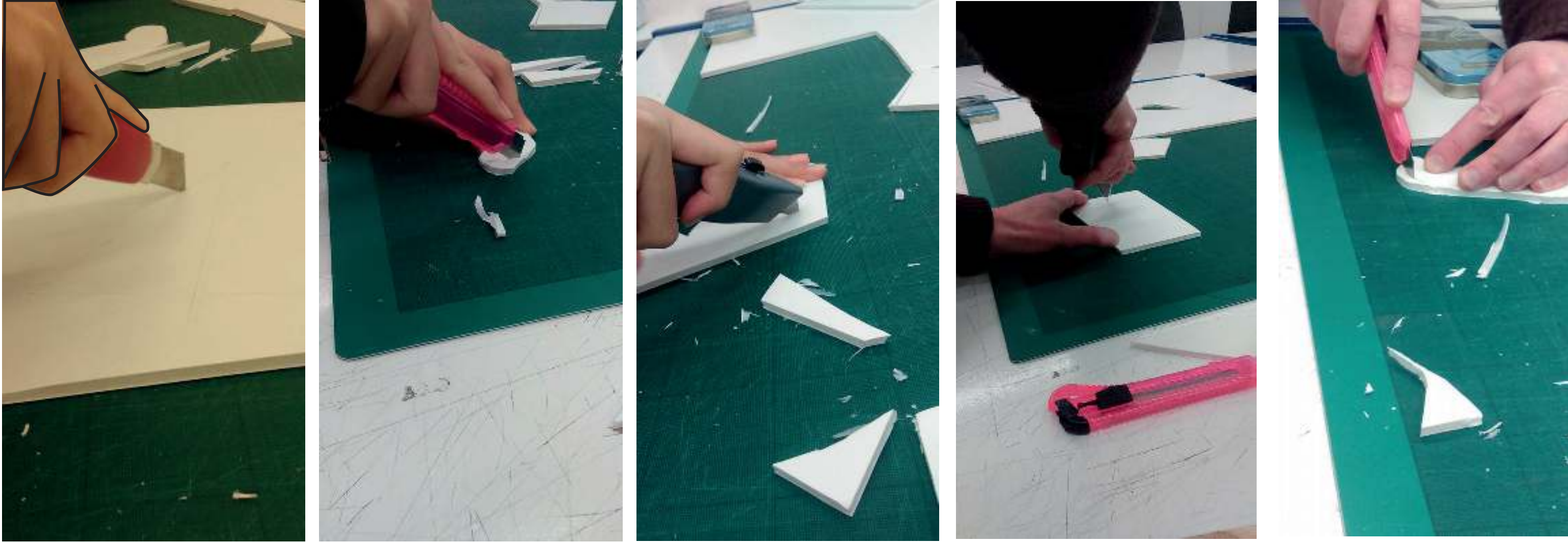
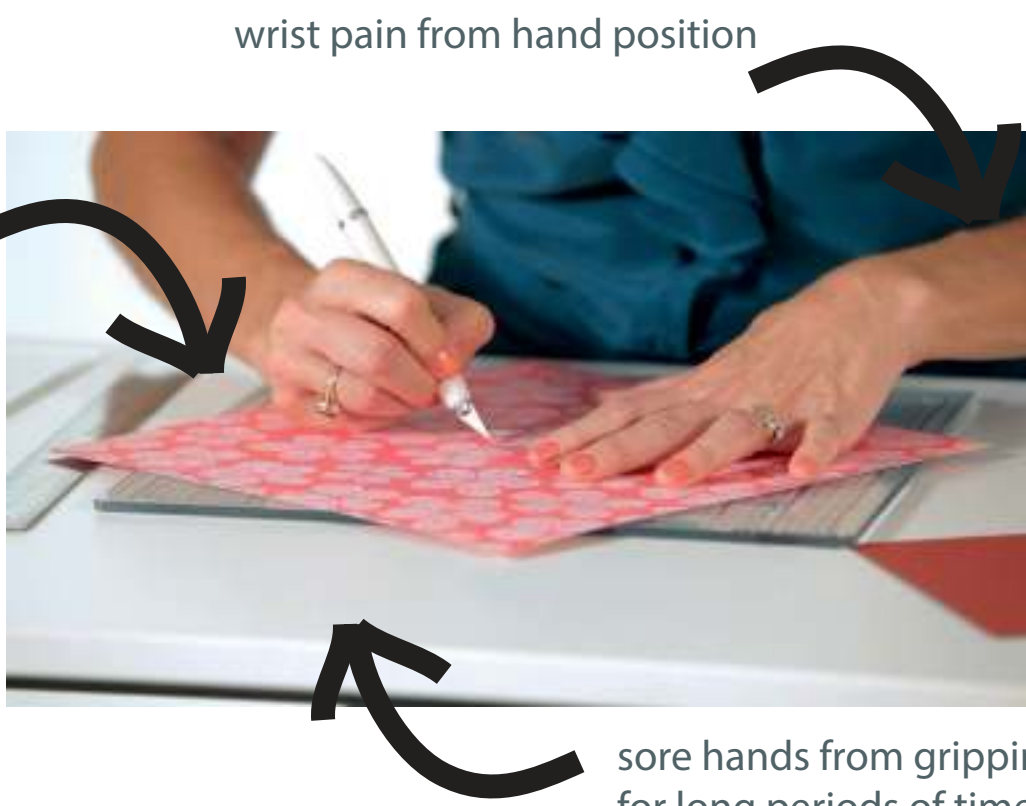
requirements

- comfortable
- can be used for long periods of time
- easy to grip

Susanna, along with many other people, suffers from arthritis but doesn't want this to get in the way of what she loves to do. Therefore she wants a craft knife that is comfortable and easy to grip so she can continue doing crafts.

improving grip

- texture encourages a light-pressure grip
- large surface area
- synthetic rubber
- contour grips



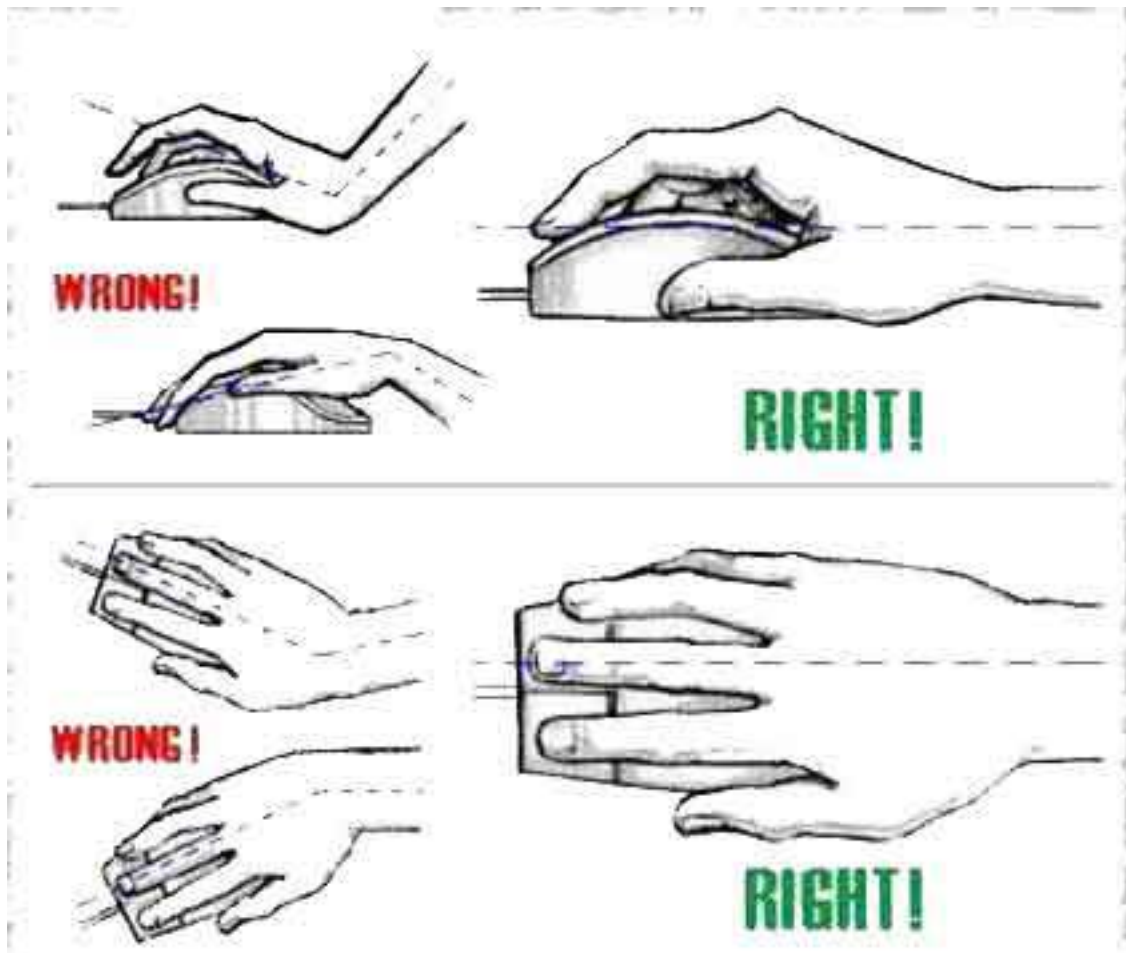
From looking at people using different craft knives, I have gained information that can influence my design. Asking a variety of people what are the most important aspects to consider they said that the knife is easy to hold and comfortable.



considerations

- people hold craft knives differently- needs to be clear how to hold it safely
- grooves, colour and different textures are used to indicate grip areas
- a good grip is required as not to slip with the blade
- many knives are retractable not only for interaction but safety reasons
- textured surfaces help people grip and add aesthetic appearances
- some knives are not as easy for left handed people to use because of retracting blade
- if parts come apart needs to be safe joining method so parts don't come apart when not intended

Looking at the correct way that people hold a computer mouse is also influential to my design. From this the way the hands are placed on the mouse can influence my design heavily and give me ideas on the shape I can use.



ABS (Acrylonitrile-Butadiene-Styrene)

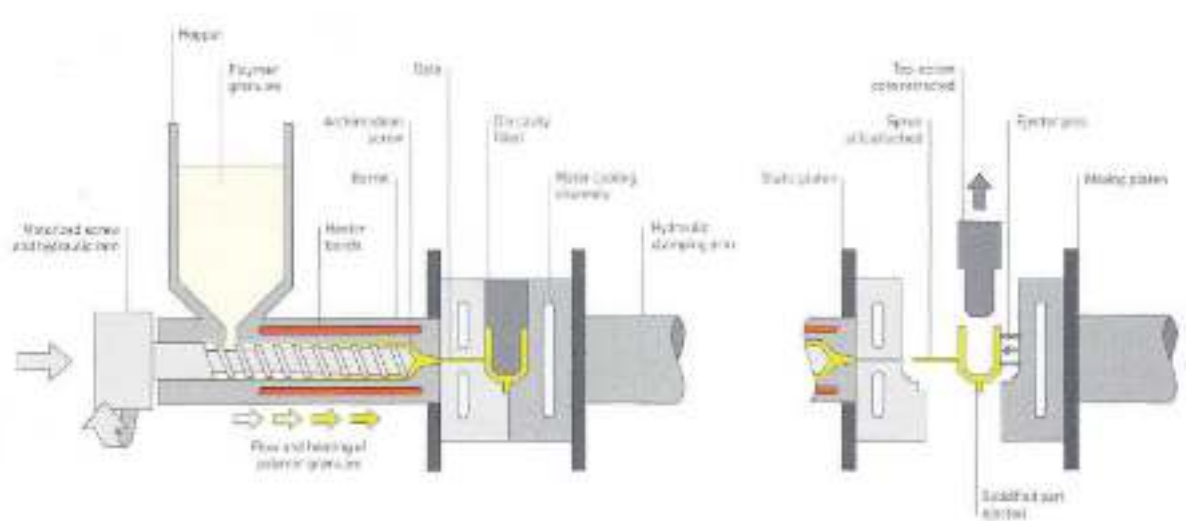
- an opaque thermoplastic polymer
- its outstanding material properties make it a popular plastic because it:
- has the strength and rigidity of acrylonitrile/styrene polymers
- toughness of butadiene rubber
- has excellent surface quality- styrene gives a shiny appearance
- range of colours available when colours pigments are added
- attractive feel
- dimensionally stable
- is impact resistant because of the butadiene
- chemical resistant
- can be processed by injection moulding or extrusion
- lightweight



Injection moulding

Costs	Typical Applications	Suitability
<ul style="list-style-type: none">• Very high tooling costs but depends on complexity and number of cavities• Very low unit costs	<ul style="list-style-type: none">• Automotive• Consumer electronics and appliances• Industrial and household products	<ul style="list-style-type: none">• High volume mass production
Quality	Related Processes	Speed
<ul style="list-style-type: none">• Very high surface finish• Highly repeatable process	<ul style="list-style-type: none">• Reaction injection moulding• Thermoforming• Vacuum casting	<ul style="list-style-type: none">• Injection cycle time is generally between 30 and 60 seconds

The polymer granules are dried and fed into the hopper, where any pigments can be added. The material is then fed into the barrel where it is heated, mixed and forced towards the mould by the rotating screw. While the pressure builds the material is kept in the barrel and then is injected into the die cavity.



- ideal for high volume production of identical products with high tolerances
- high pressures are essential for excellent surface finishes and details
- will allow me to overmould a different material for grip
- the cycle is rapid

brief

The aim of the project is to re-design a familiar object and tool required by product designers, the craft knife. There are many existing products but I intend to develop my own which will be innovative. Looking at what a craft knife is I have redefined it as a starting point for my design:

Craft knife- a form that is comfortable and ergonomic to hold which encases a blade

I have decided to design a craft knife not like existing ones because I find them uncomfortable and so I will use a computer mouse form because they are ergonomic and comfortable. I am also going to look at materials which have been recycled to make it better for the environment.

my craft knife needs to:

- be ergonomic to hold
- have a non-retractable blade
- take a mouse shape form
- comfortable to hold for long periods of time
- internal storage for blades for safety reasons
- relatively inexpensive
- be aesthetically pleasing
- be easy to grip
- have a joining method that makes it easy to separate
- be made of recycled materials



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