Design and Disability

Teachers' Resource

Supports KS3–5 Art & Design
and Design & Technology
curricula and exam specifications

Contents

Author and Contributors
This resource has been written by V&A Learning staff with the support of Jessica Starns, the Adobe Creative Resident for Inclusive Design, and the V&A Teachers' Collective. Jess's residency forms part of the Adobe Creative Residency Programme at the V&A, a year-long programme that supports artists to develop their practice through researching the V&A collections and connecting with our audiences. We would like to thank everyone for providing their time and expertise to help develop this resource.

The Adobe Creative Residency is supported by The Adobe Foundation

Image caption: *high heels called Mari K #001*, photograph, probably made in 2022 © Victoria and Albert Museum, London

Introduction

The Victoria and Albert Museum (V&A) in London is the world's leading museum of art, design and performance. Its collection of 2.7 million objects spans over 5,000 years of human creativity. Each object in the museum has a different story to tell, and can spark different questions about our connection to design.

This resource focuses on design and disability. Featuring works by designers from around the world, from different time periods and specialisms, and from across different collections within the V&A and objects brought in for the Design and Disability exhibition, the resource delves into how design addresses environmental, cultural, social and political considerations around disability in the past, present and future.

About this resource

This Design and Disability resource aims to support secondary school teachers to engage their students, empowering young people to develop their own design practice while gaining critical, creative and collaborative-thinking skills. This resource is designed to support KS3–KS5 students, studying either Art & Design or Design & Technology.

Each object discussion card covers a different stage of the creative design process that a designer may follow, including material exploration, experimentation, gathering inspiration, learning techniques, design iteration, using tools, development and production.

To encourage object-based learning, each card leads with a focus on a different object from the V&A's collection. These are then complemented with activities for students to explore their own design practice, acting as a springboard for future work and consideration of the needs of a wide variety of users.

The resource is structured so activities are run over one or multiple lessons, allowing students the opportunity to build skills and confidence. We suggest carefully considering what can be achieved in each lesson based on considerations around students' learning approaches and needs; it may be possible to deliver more than one activity within an hour's lesson. You can choose to use these cards as independent activities, or as a tool to support your own teaching.

V&A objects – managing student discussion
You can carry out object discussion while visiting the V&A or to support object-based learning in the classroom. Before starting, please check the suitability of the content of the object description and questions for your students. Students can explore the objects individually, but we recommend they refer to them in small groups to encourage peer-to-peer discussion. In some cases, you may wish to facilitate the discussion. You can use the object cards as posters in your classroom after the activity.

Each card includes an object image, short object description written in Plain English, and visual descriptions (which can be used with a screen reader or for guided reading in class), and in specific cases links to audio descriptions. These are intended for Blind and low-vision students, or to help those who may need additional visual context and information. At the end are discussion questions followed by activity ideas. Encourage your students to take time looking at or drawing the details of the object before taking it in turn to read the description aloud and ask questions within their group. We suggest giving students about 5 – 10 minutes to work through the questions on each card.

We recommend voicing the following discussion guidelines before students start:

Allow everyone in the group to voice their opinion. Be kind, patient and respectful of other people's views and ideas.

Don't worry if you don't know what your opinion is yet. Ask further questions to your group or do more research to help you decide.

Remember that everyone's opinion is valid. If someone has a different opinion to you, listen to them and ask them to explain their reasoning – it might change your own viewpoint.

Further questions
As well as the discussion points on the cards, use the questions below to encourage further object-based discussion about design concepts with your students. Not all of them will apply to every object.

Aesthetic	What are its stylistic features?
Technical	What is it made from? How does it work?
Industrial	How and in what volume is it manufactured?
Cultural	What or who is it responding to?
Behavioural	How do you interact with it?
Economic	How does it financially impact the consumer and/or manufacturer?
Environmental	Is it sustainable? What is its lifespan?

Additionally, in conversations about disability and inclusive design, consider the 'social model of disability'. This is explained in more detail by Adobe Creative Resident: Inclusive Design, Jess Starns, here:

Social model of disability
The social model of disability is a tool (not a physical tool but a thinking tool) created by Disabled people. It helps us to think if there will be any barriers for Disabled people before they happen. It was developed over 40 years ago to help social workers better understand and support Disabled people. It doesn't focus on what Disabled people can't do due to their disability – instead, it recognises how it's society that creates barriers.

The social model can be traced back to activism in South Africa during apartheid, where the phrase 'nothing about us without us' was used to demand rights. This idea was later used by Disabled activists in the UK, who used it to highlight how most decisions were made without discussing it first with Disabled people. Both the social model of disability and 'nothing about us without us' helped Disabled activists to gain the Disability Discrimination Act 1995. Until then, Disabled people didn't have the same rights as non-Disabled people – having access to the internet is older than disability rights in the UK! Places like the V&A were not required by law to make sure they were accessible. In the 30 years since the Disability Discrimination Act was passed, there have been some changes to make the UK more accessible: for example, public spaces needing to have step-free access and accessible toilets, buses now having spaces for wheelchair users, and assistance dogs being legally allowed to be in museums and other public spaces.

Language around disability and inclusion is important. The social model of disability is also why we say 'Disabled people' instead of 'people with disabilities'. By saying 'Disabled people', we recognise that disabled people are disabled by society, not by their disability. It shifts the focus from trying to 'fix' individuals to fixing the environment and attitudes that exclude them. It's a political and powerful way to highlight the responsibility society has to become more inclusive.

How to hold and guide non-ableist conversations in the classroom:

Talk about the social model of disability

Challenge assumptions

Highlight microaggressions when you hear them. Microaggressions can be disability slurs that might have been meant as a 'joke' but do hurt as they are often based on stereotypes and can make Disabled people feel bad about themselves.

Allow space to reflect and ask questions

Use real-life examples of great access and inclusion, and share knowledge about the Equality Act 2010 and disability rights. bit.ly/EA10Guidance

Activity to support empathetic and inclusive discussion and language
Words we use to describe each other are important as words can hurt us. As a group think and write a list of words that you hear around you in social or other media to describe people: what they look like, how they act, how they learn, etc.

Can you sort these into 'positive' and 'negative'? How many words are positive and how many are negative – discuss why there may be more of one or the other.

What kind of impact do you think these have on people? How would you feel and respond if the negative words were used about you?

Think about which positive words you would use to describe yourself and why? You can share these with others and the reasons or stories behind them.

Visiting the museum

V&A South Kensington is open to all. We strive to create an inclusive environment so everyone can enjoy the museum. Please note V&A displays and galleries change regularly. Please check before you visit to make sure the works you would like to see are on display and that you can use certain drawing materials in a gallery space.

Before a visit, or if you're not able to visit in person, you can watch this BSL-interpreted and subtitled welcome to the museum: bit.ly/V-AWelcomeFilm

You can also watch this introduction to the V&A for school groups: bit.ly/SCWelcomeFilm

You can find out more about getting to the V&A by public transport, Blue Badge parking, and support like accessible routes, mobility aids, access resources as well as events on our Access webpage www.vam.ac.uk/info/disability-access

Activity to support understanding of inclusion and access
Plan a potential V&A trip out of the classroom with your students: use the social model of disability as a tool to think about what barriers might happen during your trip and how can you support students and resolve them before they happen. Teachers and students could collaborate in writing a list, mind map or drawing plans or images.

Design and Disability exhibition
Design and Disability is a temporary exhibition on display at the V&A in South Kensington, London, from 7 June 2025 – 15 February 2026. It showcases the radical contributions of Disabled, Deaf, and Neurodivergent people to contemporary design and culture from the 1940s to now.

The exhibition shows how Disabled people have designed for every aspect of life through their own experience and expertise, tracing the political and social history of design and disability. 170 objects will be on display across three sections – Visibility, Tools and Living – spanning design, art, architecture, fashion, and photography. The exhibition also explores the rich history of Disabled designers challenging ableism in the design industry, as well as the practitioners working today to 'hack' pre-existing designs to make them more usable.

Encourage your students to find out more about the themes, designers and objects spotlit in the exhibition by reading this exhibition guide: bit.ly/DDExhibitionGuide

The exhibition has been designed with inclusion and access in mind, with exhibition guides in Large Print and Plain English formats, a sensory narrative map, and Braille options alongside specific objects. There are QR codes for selected objects with digital links to audio description and BSL that are screen reader-compatible. For d/Deaf and hard of hearing visitors there will also be ear cup and over ear provision for audio as well as hearing loop compatibility. There will also be tactile experiences such as a tactile map and location indicators, and touch objects. For wheelchair users using interactive elements, seating will be accompanying and not fixed, and the interactives will be at accessible heights and angles and will have knee recesses beneath. There will be seating throughout the exhibition, and signposting to museum quiet areas, as well as a sensory trolley with ear defenders and fidget toys available. Exhibition visitors are welcome to bring their own sensory toys and tools, and V&A Visitor Experience staff will be happy to help with any additional accommodations.

After the exhibition closure, school groups can still learn about and visit objects from the exhibition on display as part of the V&A's permanent collection. Encourage your students to find out more about some of the objects by visiting: vam.ac.uk/collections

Curriculum and exam specification links

The V&A Object Discussion Cards are designed to support the Art & Design and Design & Technology curriculum and allow students to develop their own ideas while exploring the work of others. As well as discussion activities, the cards also feature some suggested practical activities that provide students with opportunities to develop design knowledge, understanding and skills. The activities can be completed collaboratively or independently and can be used to help generate ideas for classroom projects. Links to the curriculum include:

Idea development
Developing ideas through investigations, demonstrating critical understanding of sources.

Practical skills
Refining work by exploring ideas, selecting, and experimenting with appropriate media, materials, techniques, and processes.

Responding to sources
Recording ideas, observations, and insights relevant to your intentions as work progresses.

Knowledge and understanding
Presenting a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

Student activities
Student activities have been designed so they can be delivered in the classroom with the support of teachers and educators, without access to specialist equipment, and using as much sustainable natural or waste materials as possible. We do however suggest teaming up with other departments in your school, local universities and nearby design industries to potentially share specialist equipment or gain further insight from local designers and craftspeople. We recommend using the student activities to kickstart extended inclusive design projects. You can adapt activities to tie in any design challenges or themes your class is currently working on. Also feel free to adapt activities and discussion questions to meet the needs and demographic of your group.

Inclusive design concepts featured in the cards include:

Designing/Design for One
Design for one is a way of designing in which a designer creates with just one person, or for themselves, to create a unique, bespoke design, often to respond to the needs of that particular user. It can be a good way to understand someone's personal experience with objects, and reveal new perspectives about design as a result.

Universal Design
Universal Design was a concept originally created by Disabled architect Ronald Mace, himself a wheelchair user, in 1997. He created a set of disability-first principles for design so that they would be the most useable for the most amount of people, including simplicity, low physical effort and equitable use.

Adaptive/Adapted Design
Adaptive design is a broad way of defining how a user or designer might change or modify aspects of a design to better suit their needs, for themselves or others, for example by changing the buttons on a jacket to Velcro to make it easier to dress, or adding an extra handle to a device so it is easier to hold.

Celebrating your students' work
Please share your students' design journey while using this resource. Please tag **@vamuseum** in your social media posts.

Consider using the students' discussions and creative activities as a starting point for participating in the V&A Innovate annual national design challenge for KS3. There are free design-thinking resources like films, PDF teacher and student packs and CPD webinars available to all schools – register interest and access resources here bit.ly/VAInnovate

Interview with Adobe Creative Resident: Inclusive Design, Jess Starns

How did you get started on your journey as an artist?
I've always been interested in art and visiting museums and galleries. My grandfather taught me from the age of four how to use a photographic darkroom and we would print black and white photographs and make photograms. I later went on to study photography at college and university, but learnt that I was more interested in storytelling than being in the darkroom and felt that photography was limiting. My friend and art mentor, Julie Henry (who was also an artist) used to take me to museums and art galleries during school holidays and helped me prepare for my college and university interviews.

What or who are your biggest inspirations?
There have been some strong organisations that have inspired me and were important along my journey of becoming an artist. I really loved my time studying for an MA in Inclusive Arts Practice and learning how to work together to create art. The Prince's Trust (now The King's Trust) was where I gained skills working with communities and received a qualification in youth work. The Girl Guides taught me how you can make positive changes. Also, the V&A was where I joined the Youth Collective and helped to plan festivals, went to Glastonbury Music Festival to deliver a drop-in workshop, met and heard from many artists, designers, V&A staff and went on trips. We visited Antony Gormley's studio where Gormley gave us a tour and we sat and discussed art in his kitchen!

I like art with a story and a social purpose. I regularly research museum collections. I am also interested in artists' thought processes and how they made their work. Some of my favourite creatives are Lee Miller, the Brighton School and cinematographers such as George Albert Smith, Corita Kent, Suzanne Lacy, Gaudi and Mary Watts. I also love going to the theatre and museums, looking at tiles, mosaics, stained glass, textiles and clothing. I enjoy learning about new digital technologies and learning new skills.

What V&A objects have had an impact on you, and why?
I am looking for objects in the collection that show adapted design, especially objects adapted by Disabled people. Like the playing cards from around 1860 that belonged to Henry Fawcett. When he lost his sight, he wanted to carry on playing cards and got his cards embossed.

There are also sketchbooks belonging to the artist Nerys Johnson. Nerys was Disabled and you can see how she adapted her creative practice in her works. Her style changed depending on how she was feeling and how much movement she had and the adapted tools she used. She also used to hire facilitators and art students to support her with her practice and setting up her studio.

There is a series of prints from the South Bronx art collective 'Kids of Survival'. This was an art studio for dyslexic teenagers set up by artist Tim Rollins in the 1980s, where they would collectively draw or print on the pages of books. I'm really inspired by this, and during my residency I'll also be setting up a design studio for young people.

What's a challenge that you have encountered in your work as an artist, and how did you overcome it?
Finding, applying and gaining funding as well as being able to forecast budgets and putting my ideas on paper has been a challenge. I learned that most funders can pay for a support worker to help you apply for funding (money) and the government programme 'Access to Work' can support you to stay in work as an artist. In your funding applications you can ask for funding to pay for others to support you with your practice. You can pay people to help you create your work or support you to learn a new creative skill. I keep my ideas to hand with a digital note on my phone that lists all the creative projects I would like to make happen, and then I look for funding to apply for that best fits the project.

What are you most looking forward to as part of your Adobe Creative Residency at the V&A?
I am looking forward to creating work with others and creating a Design studio for young people who are not currently attending or regularly attending school. I am excited to see what we are going to make.

What advice would you give to Disabled and neurodivergent young people looking to start a career in art and design?
I would say join an art collective where you would meet other artists and have opportunities to learn about art and to make art. There are resources available to support you: you can get help to pay for support workers to help you write your application, so you can apply for funding to make your art. When you are earning money as an artist, the government programme 'Access to Work' can provide you with equipment and other support. Art is the idea, and if you are unable to physically create it yourself, you can ask other people with the right skill set to help you make your art.

See Jess in her studio and sharing object inspirations in the V&A in this film:

bit.ly/VAAdobeResidentJessStarns


LIFT

Assistive fork and spoon, Liftware, designed in 2013 by Anupam Pathak, manufactured in 2015 by Lift Labs, USA

Liftware is an eating utensil designed for people who experience tremors, or for people whose hands shake, making it sometimes very difficult to eat without spilling food. Liftware helps people with tremors to eat more easily by using technology and algorithms. There are different attachments including a fork and a spoon. The handle is also designed to be thicker than usual. This makes it easier to hold and grip onto. It has a smart handle that can tell the difference between tremor movements and the way someone would like to move. When it feels the shaking, it moves the utensil the other way to help with the tremors and keep the utensil steady. Inside the handle, there's a computer, two motors and a motion sensor that can feel the tremors. It tells the two motors to move the utensil in the opposite direction of the tremor. This makes it easier to keep steady and eat without spilling the food. The handle turns on by itself when you add the fork or spoon attachment. When you put the Liftware down, it goes to sleep until you are ready to pick it to be used again.

Liftware was designed by Anupam Pathak, an engineer. Anupam had money from the US National Institute of Health start-up grant to design and make utensils for people who have tremors.

Visual Description
A photograph of Liftware cutlery against a black background. The plastic handle of the spoon is white and round with a USB charging connection at the bottom of the base of the handle. The word 'Lift' is written in capital letters and a thin, grey font is in the upper middle of the handle. Connected to the handle is a metal teaspoon head. To the right are two more metal utensil heads, a spoon and a fork. These are designed to attach to the same white handle. The spoon and fork heads have short, white connectors where the handle would click in.

Discuss
Think about a usual day for you. Are there any objects, systems or designs that frustrate you? What tools or adaptations could you use to improve them?

At different points, this utensil has cost up to £400. Is there a cheaper way to make this? What could you design that would use waste or inexpensive materials to help those with tremors to eat more easily?

Find out more
Object info online at: vam.ac.uk/collections

See other assistive technology for people with tremors here: bit.ly/qLLdji3

Student activity
Try out the idea behind the technology in the Liftware's smart handle. Use a ruler balanced on your upturned finger with pieces of BluTac on each side. Once you've made both sides even, try sticking on other small objects, like paperclips or pen tops, to test how the sensors react to the movement of tremors.

Image caption: Assistive fork and spoon, Liftware, designed in 2013 by Anupam Pathak, manufactured in 2015 by Lift Labs, USA

Engineering at Home – Cable Tie, designers; Cindy Wack Garni, Sara Hendren and Caitrin Lynch, 2016

The Engineering at Home project and this design ask us to rethink what counts as engineering, and who is considered a designer. Engineering at Home was created by Cindy Wack Garni. Cindy had an amputation of parts of four of her limbs. She learnt that she needed to make changes in her home by making small adaptations and hacks to objects she owns. Designing for 'everyday engineering', she used items including wall hooks and cable ties to help with opening and closing objects and furniture. She designed affordable changes rather than making or buying expensive new objects.

Cindy worked with artist and designer Sara Hendren and anthropologist Caitrin Lynch (an anthropologist is a person who studies people, their cultures, and how they live). Together they had conversations about design and wrote a manifesto (a list of ideas and goals). These design adaptations are known as 'design for one', as they were made for Cindy and might not work for someone else. Engineering at Home also shows the problems in how everyday objects are normally designed and to think about design from a disability perspective. The V&A has six reproductions of Cindy's design adaptations in the collection. They are reproductions that Cindy created, as she still uses the original ones.

Visual Description
A small shiny bright red purse photographed against a black background. The red vinyl purse is positioned at an angular shape– wider at the top and tapering down toward the bottom. At the top of the purse is a gold zip and hanging from the zipper is a black cable tie closed in a circle.

Discuss
Do you use 'hacks' at home when you interact with furniture or objects? Share what and how if you do, if you don't, how could you change how you use an everyday object?

Would you consider your 'hacks' engineering? Why or why not?

Find out more
Object info online at: vam.ac.uk/collections

Look at the Engineering at Home website and manifesto: bit.ly/4dbtSDR

Student activity
How could you change how you use an everyday object in your home or classroom? Observe a few people opening the same thing and record how they do it. Do they all do it the same way? How are their ways of using the object different? Can you ask them to explain why this works for them?

Image caption: Engineering at Home – Cable Tie, designers: Cindy Wack Garni, Sara Hendren and Caitrin Lynch, 2016


me of hea
afraid of
paranc
traum

Pair of orthopaedic shoes and wedding dress, United Kingdom, 1967 (made and worn)

The wearer of this dress and shoes, Janet Powell, was born on 29 February 1944. When Janet was a child, she liked to ride her bike and passed her driving test on her first go. She enjoyed swimming and won awards as well as earning a lifesaving certificate. Janet and her husband also enjoyed ballroom dancing and were awarded badges for their accomplishments. Janet had a dislocated hip joint and a missing hip joint, which meant she had one leg shorter than her other leg. Janet wore orthopaedic shoes made just for her feet. Janet's orthopaedic shoes had a platform on her left shoe and no platform on her right shoe so that her legs, in shoes, were the same height.

Janet married John Jones on 16 September 1967. For her wedding, Janet asked a seamstress to adjust the hem of an already-made wedding dress to hang straight on Janet's body. In the 1960s, the only two colours of orthopaedic shoes you could buy were black or brown. For her wedding, Janet painted this pair of her own orthopaedic shoes white to match her wedding dress.

Visual Description
A mannequin wearing a floor-length cream wedding dress with long sleeves. The figure also wears a pair of leather shoes painted in a glossy off-white. The shoe colour has faded with age, with slightly yellowing shoelaces. As they are orthopaedic, the left shoe has a slightly higher back and side to support the foot than the shoe on the right, which is the height of an average shoe.

Discuss
If you could look under these shoes, you would see paper confetti stuck to the soles. What does this add to the story of the shoes and wedding dress?

How do you make sure your clothes fit you, what would you like to change? What details do you think about what you wear when you have an important event coming up?

Find out more
Object info online at: vam.ac.uk/collections

Student activity
How do you make clothes you own fit you? What could you change to make them fit you better? Draw an item of clothing you own and make adjustments in a different colour to make it fit your body perfectly. Can you make more changes to your adapted clothing design to make the item suitable for a completely different occasion?

Image caption: Pair of orthopaedic shoes and wedding dress, United Kingdom, 1967 (made and worn)


FM1

high heels called Mari K #001, photograph, probably made in 2022

Mari Katayama is a Japanese artist who lives in Gunma, a region in Japan. She is a multimedia artist, which means she creates art using lots of different materials and art mediums. She usually creates hand-sewn objects which she photographs and are shown in her installation work, or art displays. Her work explores what society sees as 'normal' and how we see other people and ourselves. In 2011, she started the High Heel Project to ask questions including 'is fashion a luxury item?' and 'how can we give freedom of choice for everyone?'

Mari worked with other creative people to design high-heeled shoes that fit her prosthetic legs (artificial limbs). The High Heel Project challenges the idea that prosthetics should only be plain and practical and explores ideas of what is 'feminine' and what is fashionable.

Visual Description
A large photograph, a full-length portrait of Mari Katayama, a young Japanese woman, staring straight into the camera. Mari Katayama is standing in the middle of a factory surrounded by bright, industrial lights, silver metal pipes, and rows of empty machinery that stretch into the distance. She is wearing a short black dress and has her left prosthetic leg on the edge of a plastic crate. She is holding on to a part of the machinery with her left arm. Her right prosthetic leg is placed firmly on the ground. Both prosthetics have skin-coloured legs with tattoos, and with black high heels with laces.

Discuss
Discuss Mari Katayama's questions: is fashion a luxury item? And 'how can we give freedom of choice for everyone?' with clothes and accessories?

What do you think people should know about you that is harder to see on the surface? What do you think are your best skills and qualities?

Find out more
Object info online at: vam.ac.uk/collections

Watch this film (in Japanese with English subtitles) about Mari's work: bit.ly/3GXt60Z

Student activity
Create your own self portrait – this could be made using collage, photography, sewing or drawing to reflect Mari's different art media and your interests and skills. What do you think your portrait says about what you value the most about yourself? What are your hopes and fears?

Image caption: *high heels called Mari K #001*, photograph, probably made in 2022

Nerys Johnson, sketchbook, United Kingdom, painted December 1997 to February 1998

Nerys Johnson was a Welsh artist who painted and drew flowers and other subjects. Before Nerys was an artist, she was Keeper of Fine Art at the Laing Art Gallery in Newcastle upon Tyne and later Keeper in Charge of the Durham Light Infantry Museum and Art Centre.

Nerys had rheumatoid arthritis, which meant sometimes she had less body movement. You can see how she adapted her creative practice in her works. She used watercolour and gouache paint, long, tall paint brushes, sometimes tissue paper as well as large bowls for water and paint. Sometimes she painted larger works and sometimes works on small pieces of paper. Nerys' style of work depended on how she was feeling that day and how much movement she had.

Nerys worked with students at the Durham University Engineering Department to design her art studio chair. The chair had a high back and mechanisms which allowed Nerys to work from different angles. Nerys painted the chair with flowers. She also hired facilitators and art students to support her with her practice and setting up her studio. Sometimes Nerys painted portraits of her facilitators and art studios with the flowers.

Visual Description
The photograph is of two paintings from one of Nerys Johnson's sketchbooks. Both images are painted across two pages of the sketchbook. The top left image is a portrait of a woman, one of Johnson's artist facilitators. She looks calm with her face looking down. She has been painted in a classical style similar to a bust of an ancient Greek goddess, with wavy blonde hair. Next to the portrait on the right-hand side of the page are three purple iris flowers with green stems. The background is painted a sky-blue colour. The next painting has a bright red background and spreads across two pages of the sketchbook. There are black and white lines of twisting plants and seed pods. This painting is freer and more abstract in style.

Discuss
Nerys Johnson said that her painting 'takes every ounce of energy I've got, every atom of concentration' when she was asked if her painting was relaxing. Do you find art making relaxing? What helps you concentrate? What helps you feel calm?

What are some materials and tools that have been used in the art you know? What are materials and tools around you in your home or school that could be used instead to make those types of artworks?

Find out more
Object info online at: vam.ac.uk/collections

Student activity
Explore Nery's Johnson's mark-making in Adobe Creative Resident Jess Starns' film: bit.ly/VAAdobeResidentJessStarns

Can you try different materials to paint and to make marks? Have a go at painting with tissue paper or with other materials. Try painting small and big. How does using different art materials and sizes change the style of your work?

Image caption: Nerys Johnson, sketchbook, painted December 1997 to February 1998 © Victoria and Albert Museum, London


XBOX

Xbox adaptive game console controller, Microsoft, 2014

The Microsoft Xbox Adaptive Controller was released on 4 September 2018 with the slogan 'When everybody plays, we all win'. This controller allows users to make the controller fit their body. You could control the game with your feet or chin. You can also connect more than one device, like special switches and joysticks, to it. Microsoft made the controller to look like other Xbox products so the adapted controller does not look different. The packaging for the Xbox Adaptive Controller is accessible. Designed by Mark Weiser, the packaging can be opened without using your hands by cloth tabs and large plastic loops.

The Xbox Adaptive Controller costs £74.99 and is the first adaptive controller designed and manufactured by a big tech company. The designers included Bryce Johnson, Inclusive Lead at Microsoft, and Chris Kujawski, Principal Designer at Microsoft and the Microsoft Device Design team. Microsoft worked with charities, patients in a hospital and other nonprofit organisations to test and to create the prototype before the controller was manufactured and sold. It also shows how companies can think about design, as well as price, to make things more accessible to everyone.

Visual Description
The Xbox Adaptive controller has a rectangular shape with a white body and dark grey buttons. It is roughly the size of a computer keyboard. It includes two large, dark grey pressure-sensitive pads that can be set up in different ways to suit the user's needs. There's also a dark grey d-pad and a long line of inputs all along the back of the controller to plug in extra devices like buttons, joysticks, or switches. This means people can play on Xbox and Windows 10 PCs. The controller connects via Bluetooth and has 19 input jacks and two USB ports for other devices. It also has a built-in battery, so it can be used without being plugged in. Plus, the controller can quickly switch between different setups for different users.

Discuss
Today's technology makes a lot of assumptions about people who use it. Would a bigger button make you better at playing your favourite video game? Would a handle attached to your phone make it easier for you, or a friend, to hold? How can you change or add things to what you own to make it better for you?

Can you think of other play or leisure activities that could be made more accessible with technology?

Find out more
Object info online at: vam.ac.uk/collections

Read here about SpecialEffect, a charity that designs adaptive technology to help people play games other than with their hands, for example using their eyes, feet, or with their chin: bit.ly/3RUtq3a

Student activity
Find an object around your classroom or home – this could be a TV remote, your phone or a game controller, or another object. Use moulding clay or Play-Doh to add to/change the shape of the object to suit you and how you would use it. Afterwards, work with a partner to talk about what works for them and to adapt it to their way of using it.

Image caption: Xbox adaptive game console controller, Microsoft, 2014 © Victoria and Albert Museum, London


MABAR
THE DESIGN CENTRE

Yard-arm Pick-up Stick, designed by D.A. Morton for Mabar Manufacturing Company, Sheffield, UK, 1966

This grabber tool was made to help Disabled people reach for and lift objects. It is very light at under six ounces - about the weight of six pencils - but strong enough to lift something that weighs four pounds – the weight of a small laptop. It can help the user reach about two extra feet. It was designed in 1963 by Derek Morton, an engineer who worked at an orthopaedic hospital, as well as engineers Thomas Bates and John Rooker. At that time most other pick-up sticks were made of wood with string pulleys. This design was made of steel and aluminium metal to give the pick-up stick strength, and a rubber handle for better grip. On the top of the handle there is a magnet to help the user pick up metal objects such as coins. The pick-up stick cost £1 12s 6d (around £32 in today's money). The Yard-arm Pick-up Stick won the Design Council Award for 1965. It was also important because it was affordable for everyday use in normal homes.

Visual Description
A photograph of a silver pick-up stick. The pick-up stick is roughly the length of an adult's arm and is made from aluminium except for the very end of the handle, which is made from rubber. At one end is a metal claw grabber with black rubber tips. At the other end the handle is coated in black, slightly dull rubber and has a thin steel trigger underneath which allows for a user to squeeze to operate the grabber. Near the handle, on the length of aluminium is the company logo 'MABAR' in yellow capital letters against a black background in an oval.

Discuss
The main designer, Derek Morton, worked for years as an engineer in hospitals, which gave him a good foundation of observing the needs of the user. What do you think first-hand, or lived, experience can bring to a design?

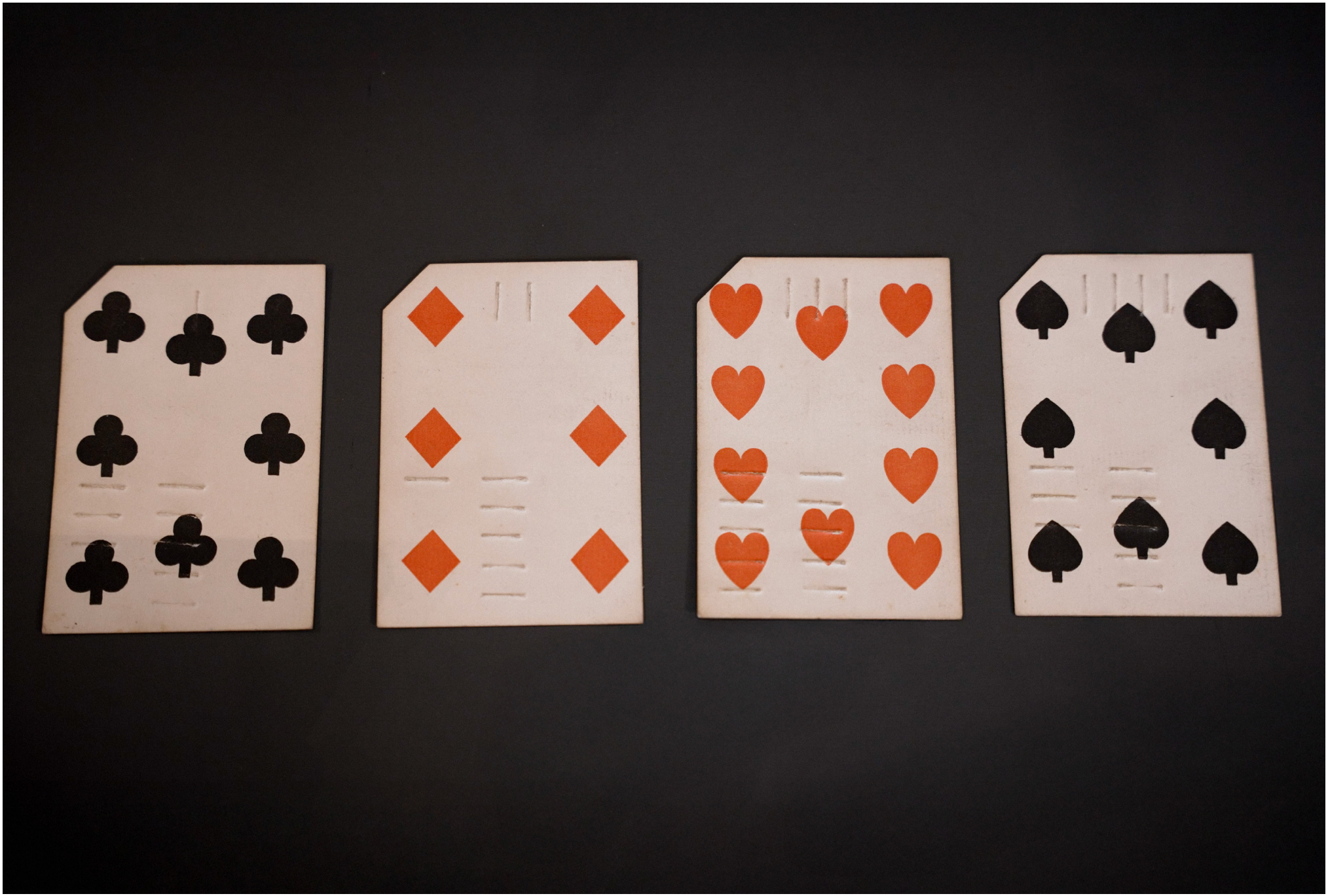
Have you seen this or a version of this grabber before? What have you seen it used for, and who used it?

Find out more
Object info online at: vam.ac.uk/collections

Student activity
Do some internet research and find current versions of this grabber. What is different about them now: materials, function, aesthetics, use, anything else? Why do you think these have changed in the past 60 years? Draw or print out an image of a newer version and sketch and annotate it with new design adaptations.

Find a problem from a classmate about a problem they have with an object or activity they use or do every day, ask them five questions and then design them a quick solution. Use annotations, or notes, to explain what each part of the design does.

Image caption: Yard-arm Pick-up Stick, designed by D.A. Morton for Mabar Manufacturing Company, Sheffield, UK, 1966



Playing cards from playing card pack, designed by Henry Fawcett, London, UK, around 1860

These playing cards belonged to Henry Fawcett (1833–84). He was the Postmaster General from around 1860 as well as an MP for Brighton and Hackney. Fawcett enjoyed playing games like horse-riding, fishing, skating, cards and hunting. He lost his sight in an accident at age 25, but he wanted to carry on playing cards. Fawcett worked with a playing card maker and had them create custom embossed cards, which means shapes were pressed into the card. The pack of cards has different adaptations. The top left corner of every card is cut so he would know what way up the card was. Each suit or symbol has its own code at the top of the card: for example, the clubs is one embossed line, diamond is two embossed lines, heart is three embossed lines and spade is four embossed lines. At the bottom of the card, the lines show the number of the card; for example, three lines for the three of hearts. A king doesn't have any extra lines, the queen has an embossed 'O' and the jack a 'V'.

Visual Description
A close-up photograph of Henry Fawcett's embossed playing cards against a black background. The playing card on the left has a white background and displays the Eight of Clubs, which is eight black clover shaped icons spread over the card. It has been adapted for Henry's needs to feel what the card is, so has been embossed with eight small rectangular horizontal dents at the lower left corner. The next cards to the right are also white, but display the Six of Diamonds, Ten of Hearts and Eight of Spades. All of the cards have embossed vertical dents at the lower left for the numbers, and indicate their symbol or suit with embossed vertical dents at the top centre of the cards: the clubs with one dent, the diamonds with two, the hearts with three and the spades with four. The top left of both cards has been cut off to indicate which way up the user should hold the card.

Discuss
Could users without a vision impairment still use these cards the same as any other playing cards? Do you think this is an example of design-for-one or inclusive design, and why?

Can you think of adaptations that could be made to playing cards to suit other types of sensory, cognitive or physical access?

Find out more
Object info online at: vam.ac.uk/collections

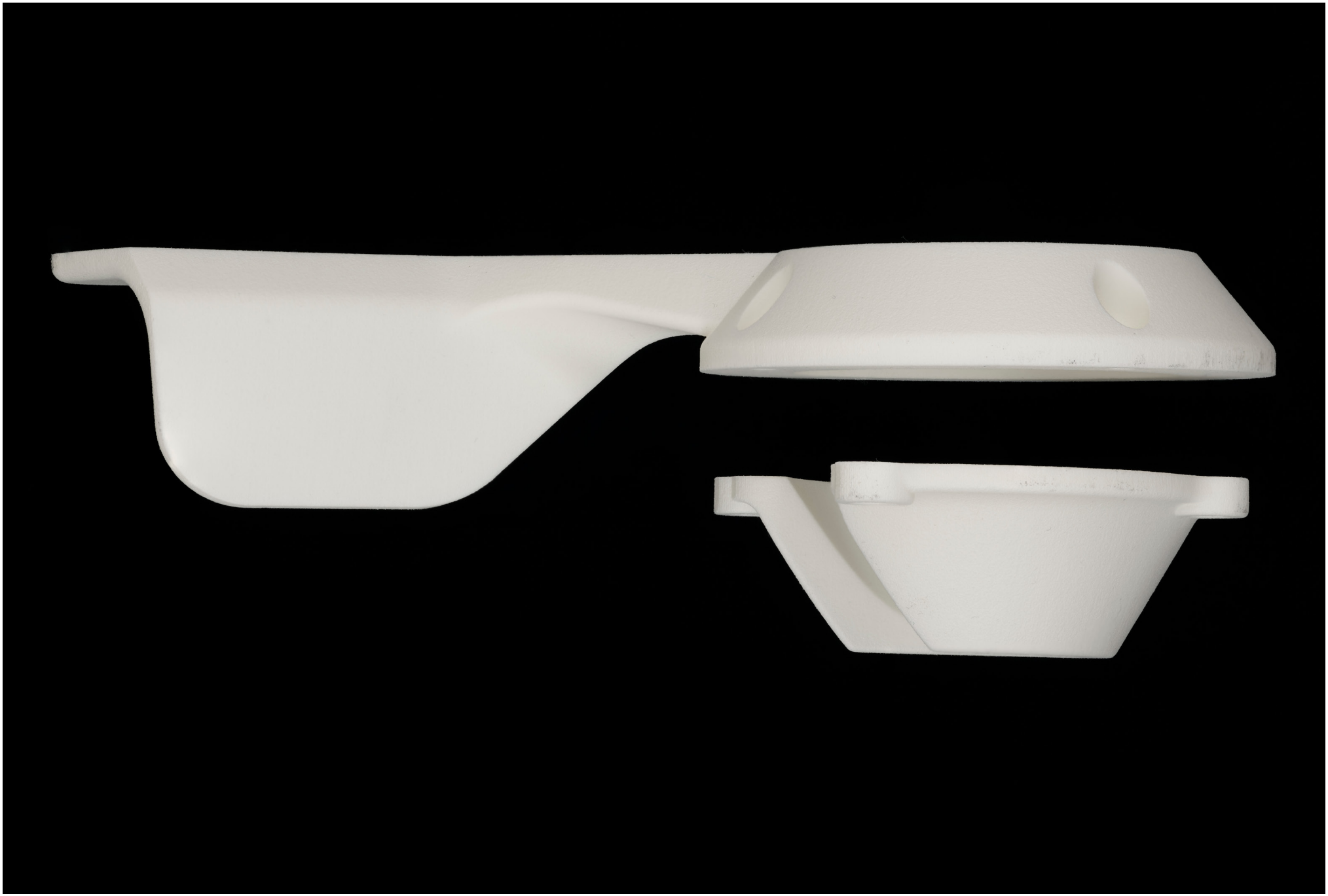
Hear more from Adobe Creative Resident: Inclusive Design, Jess Starns, about these cards in her film: bit.ly/VAAdobeResidentJessStarns

Read more about Henry Fawcett and hear about why the Inclusion Advisory Group at Salisbury Museum, Wessex Museums has highlighted another version of this object: bit.ly/4jO8Z4B

Student activity
How can you introduce a different sense into an existing design? How can you add touch, sound, taste, visuals or another sense into your design to give it another layer?

Create your own playing cards that suit you and your interests. Can you discuss with a classmate and design for them, too?

Image caption: Playing cards from playing card pack, designed by Henry Fawcett, London, UK, around 1860



3D-printed door handle, designed by Materialise, Belgium, 2021

These are 3D-printed tools, designed to let people open doors without using their hands. These openers fit to existing door handles, and are made from a material that resists chemicals and moisture, and can be wiped clean. They were created as a solution to a new problem that came up during the COVID-19 pandemic. At that time, people understood that germs could easily spread from touching surfaces. You can use this handle by pushing or pulling with your elbow or arm, instead of using hands. These door openers also show that the way many doors inside buildings and in workplaces are designed isn't always easy for everyone to use. Because these tools let people open doors without touching them, they can also help other people, like Disabled people, who might need doors to be changed to work better for them. This shows how a design that wasn't first made for Disabled people can still be used and adapted to meet their needs and make things more accessible for even more people.

Visual Description
A photograph of two parts of a 3D printed door handle, viewed side-on. Both pieces are white, and made from 3D printed plastic. The left side of the handle, where you place your hand to open the door, is flat and shaped almost like the fin of a fish. On the right, which attaches to the door, is a circle laid flat. The second piece, underneath, is a shallow cone with a section cut from the left side. There are holes for screws where it attaches to the first part through a door.

Discuss
The designers created one of the first online services that allowed people to get their designs 3D printed even if they didn't own a good 3D printer themselves. They also made a site where people could upload their own designs, sell them, get them printed, and share them with others. What about this makes this system accessible and inclusive? How can this be improved?

What are other changes to everyday designs, objects or ways of living that started in response to the COVID pandemic or awareness of other mental and physical health concerns? Who were these originally intended for and why? How are they used by others, and how can they be adapted again to help even more people?

Find out more
Object info online at: vam.ac.uk/collections

Read an article by curator Natalie Kane about different pandemic objects in the V&A collection here: bit.ly/43b7fuN

Watch this film about how V&A curators decide on what objects to include in their Rapid Response collection here: bit.ly/4jFo2Nm

Student activity
Can you think of a design that was meant for one purpose but is now used by many for a different purpose? Identify ten objects around you that could be redesigned or repurposed to be more useful for more people.

Image caption: 3D-printed door handle, designed by Materialise, Belgium, 2021

Cup and saucer, designed and manufactured by the Du Paquier porcelain factory, Vienna, Austria, 1735–40

This cup and saucer are made of porcelain, a fragile ceramic material. People would have used this cup and saucer to drink hot chocolate. They would have belonged to someone wealthy, as porcelain and hot chocolate were expensive luxuries. This cup and saucer were designed to stop the cup and hot drink from falling off the saucer and onto the ground or person using it. They were designed to support Disabled or ill people with tremors, whose hands shake, to drink more easily. The saucer has a tall rim built onto it to make the cup more stable.

Visual Description
A photograph of a decorative teacup. It is small and the ornate handle is turned to the right. This porcelain teacup is mainly white, but has a pattern of orange and purple flowers across the cup and saucer. Along the rim of the cup and saucer is a thin line of gold. The bottom of the cup is surrounded at the bottom by a ring of porcelain, with supports shaped like butterflies, which stop the cup from tipping or falling from the saucer.

Discuss
These are objects that would be used in a home, alone or with family or friends. Are there objects in your home that could be made a little bit better with one adjustment? Can they be used without anyone else's support?

This cup and saucer were made from expensive materials and to hold an expensive drink. Chocolate in the 1700s was not affordable for people who were not wealthy. How do you think what things cost means for how accessible they are?

Find out more
Object info online at: vam.ac.uk/collections

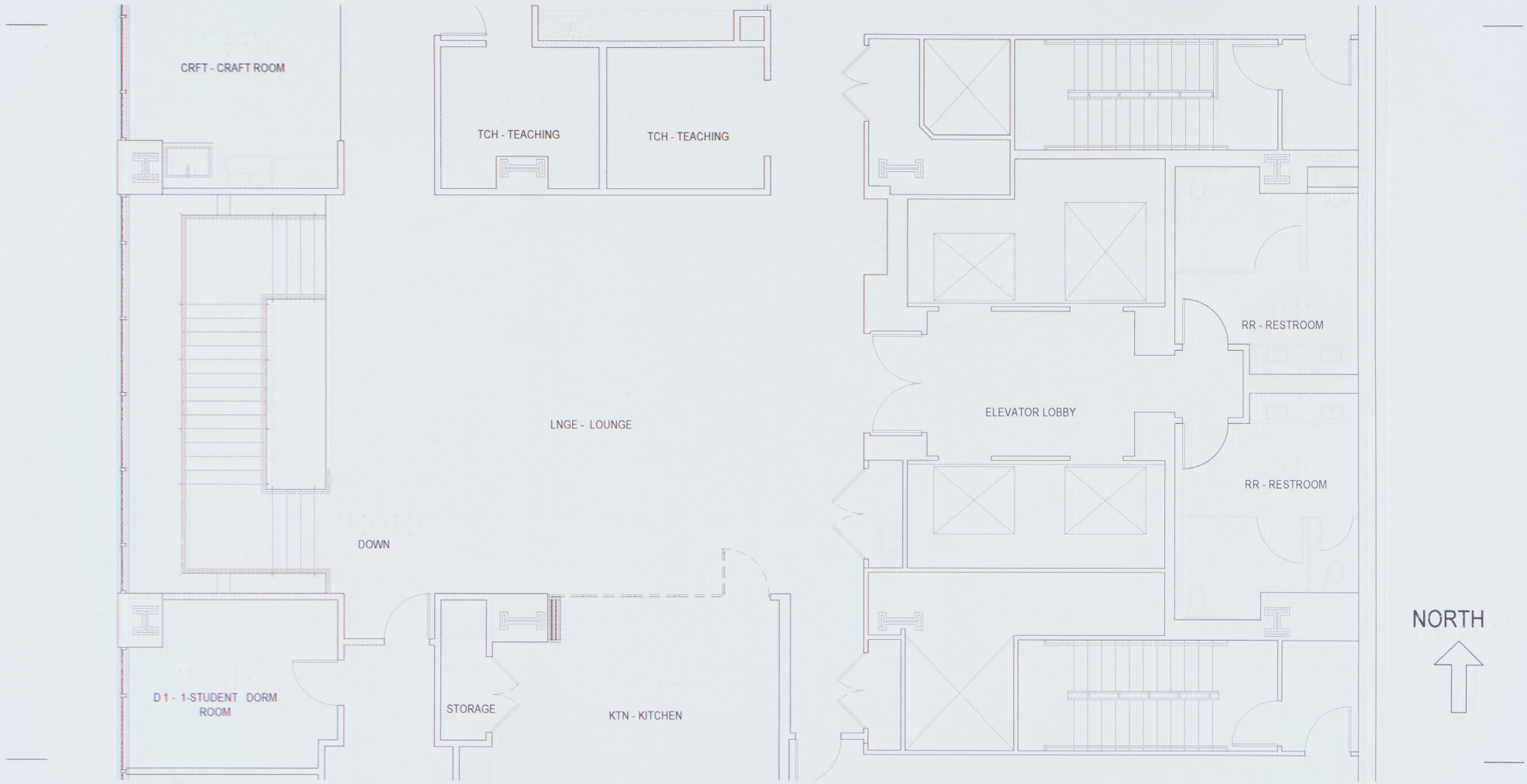
Learn about the V&A's Ceramics collection here: bit.ly/3Lk2RBz

Watch this film about the history of porcelain here: bit.ly/VAEdmunddeWaal

Read our Exploring Ceramics Teachers' Resource here: bit.ly/VAExploringCeramics

Student activity
Think about the user journey, from making the hot chocolate to drinking it using the trembleuse set. What other steps could be adapted to support the needs of a user? Fold a sheet of paper in half three times and use the squares to draw or collage the different steps to making and drinking the chocolate, and write notes on them with ideas.

Image caption: Cup and saucer, designed and manufactured by the Du Paquier porcelain factory, Vienna, Austria, 1735–40



LightHouse

FEBRUARY 6, 2015

MARK CAVAGNERO ASSOCIATES ARCHITECTS

5 10 20

FLOOR 11
MIDDLE SECTION

Design for the LightHouse headquarters, designed by Mark Cavagnero Associates and Chris Downey, San Francisco, California, USA, 2015

These are braille (a raised writing system using touch to access reading and writing), tactile embossed and printed architectural plans for the LightHouse. LightHouse is a charity for blind or visually impaired people. An architecture group, Mark Cavagnero Associates, worked with a blind architect called Chris Downey to make these plans. They were used to consult with people using the charity's services so they could share what they liked and wanted changed about the building design.

These plans show 'universal design', which tries to make objects and spaces more accessible and usable for everyone. The LightHouse has three floors in a high-rise building in San Francisco, USA. The architectural plans include rooms for teaching about braille and adaptive technologies, a training kitchen, rooms for recording and editing audio and film and 11 bedrooms for people doing their training programmes. Different types of flooring in the building help people know where they are. The hallways are concrete, the stairs are wooden, placed where people meet, like the reception area, are carpeted. Each surface looks, feels, and sounds different when someone walks on it or uses their cane, which helps people find their way around.

Visual Description
An image of a tactile plan of a building. This clean and orderly plan shows many rooms outlined in black surrounding a central lounge, with an elevator and lobby marked to the right of centre with a staircase either side. Another staircase is illustrated on the other side of the drawing to the left of centre. At the bottom, a room marked 'kitchen' is shown. At the top, there are two rooms, side by side, marked for 'teaching'. There is an arrow on the right marking north and the text 'Lighthouse, February 8, 2015, Mark Cavagnero Associates' at the bottom left.

Discuss
Talk to five different people about their experience of your school, what do they find easy or difficult - is it the same as you? Have you found a problem that stops people getting around easily and what can you do about it?

Can you think of somewhere in your community that could be made more accessible than it currently is? What would you change and why?

Find out more
Object info online at: vam.ac.uk/collections

Student activity
Create an architectural plan from your discussions about a space in your community where thinking about others' needs wasn't part of the design process. Can you highlight where architectural changes can be made in your plan?

Image caption: Design for the LightHouse headquarters, designed by Mark Cavagnero Associates and Chris Downey, San Francisco, California, USA, 2015 © Victoria and Albert Museum, London