

Reading beyond the classroom

Product Design, Years 7 – 11.

BYRCHALL
HIGH SCHOOL

While in Years 7, 8, 9, 10 and 11 students should try and read a wide variety of books and glean information from the internet. Being able to design the world in which we live has got to be one of the most challenging, yet interesting, jobs there is. Without designers seeing problems and finding creative solutions to them, making our lives easier and more enjoyable, we would live in a very different world. These books look at a range of different designs and designers from around the world.

There are a number of high-quality websites available:

<https://www.gcsepod.com/> (Login and go to Design Technology AQA)

http://www.technologystudent.com/despro_flash/NEW_GCSE3.html

<https://www.bbc.co.uk/bitesize/examspecs/zby2bdm> (upper school)

<https://www.bbc.co.uk/bitesize/topics/zhv8q6f/resources/1> (lower school)

In addition to this, our recommendations follow below. These texts do not form part of our schemes of work so reading them will not spoil students' enjoyment of future lessons. They will most likely complement the work we do.



Lower School

Christiane Dorian

How We Make Stuff

What are rubber ducks really made of? Where do burgers come from? Does chocolate really grow on trees? How do we turn trees into paper? What's the link between gorillas and mobile phones? If you are a parent, your child often bombards you with the most fascinating questions—questions that probably make you stop and think, too. In *How We Make Stuff*, writer Christiane Dorian provides answers to some of the burning questions of childhood—at least a few of which remained unanswered from her own youth.

This large, highly interactive book uses colourful diagrams and flowcharts, along with a variety of fun booklets, flaps, tabs and pop-ups that describe how we design, produce and dispose of everyday products such as clothing, mobile phones and several common food items. It also explains the history and environmental impacts of human technology.

John Farndon and Rob Beattie

Stuff You Should Know

Stuff you should know! is the fascinating story behind the daily activities we take for granted. What exactly happens when you turn on the tap, send a message on the Internet, or telephone a friend? Have you wondered where garbage goes once you've throw it out? Or where the gas that heats your home comes from? Find the answers to these questions-and many more-as you turn the

pages of this book. Special fold-out pages tell what happens when you phone for a pizza or post a letter to the other side of the world.

Charlotte Foltz Jones

Mistakes That Worked

This book looks at 40 inventions that began as mistakes, such as silly putty, sandwiches, and even potato chips! A great reminder not to sweat mistakes, and to constantly pay attention. With hilarious anecdotes and quotations from famous inventors. At 96 pages, this is appropriate for more advanced readers to read together over a period of time.

Catherine Thimmesh

Girls Thinking of Everything

In kitchens and living rooms, in garages and labs and basements, even in converted chicken coops, women and girls have invented ingenious innovations that have made our lives simpler and better. What inspired these girls, and just how did they turn their ideas into realities?

James Dyson

James Dyson's History of Great Inventions

This compelling journey through the history of invention, under the guidance of inventor and manufacturer extraordinaire James Dyson, reveals the myriad stories of inventions and inventors that have shaped civilisation. Packed with colour illustrations, the book examines a host of lesser known as well as more famous discoveries, ranging from early Persian ice cream to the invention of the microchip and the extraordinary advances in animal cloning. Discover how: * Roman dentists developed rope-powered drills * Women's corsets led to the invention of the modern umbrella * The hovercraft emerged from an empty cat-food tin * And how the internet really came about with unique insights into the processes of invention and additional expert contributions, Dyson's History of Great Inventions is certain to fascinate and inspire in equal measure.

Emily Bone and Leonie Pratt

Recycling Things to Make and Do

Includes activities such as a castle desk tidy, robot collage and dragon puppets, all made from things found around the home. In this title, each activity is clearly and vividly illustrated in an appealing and colourful style, with easy-to-follow step-by-step instructions.

Kevin McGuire

The All-New Woodworking for Kids

This is an already popular book and gives it more: more projects children will love and more information in an expanded introductory section on tools, materials, techniques, and safety. Plus, this invaluable guide--one of the rare woodworking volumes created especially for kids--has been completely redesigned with thoroughly contemporary photographs. Of the nearly 40 projects included, 15 are brand-new and 25 have been redesigned. So now it's even easier and more fun for kids to handmake a bench for their own workshop, create a DVD storage cube that spins, build a doggie diner, or craft adjustable stilts, a box with a secret drawer, and many other long-lasting items.

DK Children

3D Printing Projects

Over 20 exciting 3D printing projects for kids to design and print their own toys, gadgets, models, and ornaments.

Using freely available 3D modelling software and without the need for your own 3D printer, *3D Printing Projects* has inspiration and instructions for a wide range of thrilling projects, from simple models you can print and assemble at home to more elaborate builds you can design on screen and then order online. Taking children 9 years old+ through how a 3D printer works and what type of 3D printers there are to 3D scanning and preparing files, this is the perfect introduction to this exciting and ever-expanding technology.

Upper School

Koos Eissen and Roselien Steur

Sketching: Drawing Techniques for Product Designers

Sketching is an incredibly broad and practical survey of sketching techniques for product designers. It goes without saying that the book is suited for the classroom, but every design studio will also find this manual an asset, because in spite of the ascendancy of the computer, hand-drawn sketches are still a very much used.

Dick Powell

Presentation Techniques

The importance of presenting design ideas with the maximum clarity and precision is the central theme of this manual, which describes the principles of perspective drawing and colouring techniques, with chapters on marker, airbrush and coloured paper rendering and special finishes. All types of line and descriptive drawing are explored, including cutaways and exploded views; and step-by-step drawings show how to build up a product visual, following the entire sequence to the finished drawings.

Janine M. Benyus

Biomimicry: Innovation Inspired by Nature

Biomimicry is rapidly transforming life on earth. Biomimics study nature's most successful ideas over the past 3.5 million years, and adapt them for human use. The results are revolutionizing how materials are invented and how we compute, heal ourselves, repair the environment, and feed the world.

Chris Lefteri

Materials for Design

The information provided in the book allows professional designers and students from a range of disciplines – but focusing on product design – to understand in simple, exciting, thought-provoking, visual terms different qualities and features of materials. The subject is presented from the perspective of design, and relevant case studies are used to inspire designers into new ways of thinking about materials. As well as standard and widely available materials, the book also contains emerging materials such as smart materials and self-healing plastics, offering a comprehensive guide to material selection for designers.

William Kamkwamba

The Boy Who Harnessed the Wind

This book is based on a true story. When William Kamkwamba was just 14 years old, his family told him that he must leave school and come home to work on the farm – they could no longer afford his fees. This is his story of how he found a way to make a difference, how he brought light to his family and village, and hope to his nation. Inspiring read.

DK

Design: The Definitive Visual History

Design: The Definitive Visual History is a gorgeous visual celebration of design across the decades. Find out all about the major design movements of the last 150 years from Arts and Crafts to Bauhaus and browse through the beautiful image catalogues of everything from glassware to posters and typography to chairs. Students need to know in detail about at least two famous designers for their CGSE.

James Dyson

Against the Odds: An Autobiography

This is a rags to riches story of an inventor whose unswerving optimism and self-belief brought him spectacular success. It is a story of personal and business triumph, and will be an inspiration for inventors, entrepreneurs or anyone who wants to know what it takes to succeed against massive odds.

Catherine Ince

The World of Charles and Ray Eames

Charles (1907 1978) and Ray (1912 1988) Eames are among the most important designers of the 20th century, and the story of the Eames Office is that of visual and material culture in the post-war, modern period. *The World of Charles and Ray Eames* charts the history of their inspiring and prolific world and brings together key works and ideas explored at the Eames Office throughout its extraordinary history.

Arne Jacobsen

Arne Jacobsen: Objects and Furniture Design

A natural candidate for Poligrafia's Design by Architects series, Arne Jacobsen (1902-1971) was concerned with every detail of the environments he designed, from the basic structure right down to the door handles. When he designed St Catherine's College for Oxford University in 1960, even the height of the cedar trees he planted and the varieties of fish he installed in the ponds were of urgent concern; there was no place, in Jacobsen's thinking, where architecture left off and design took over, and today he is equally famed for his achievements in both domains. In the realm of furniture

design, such creations as the Egg, Series 7, Ant and Swan chairs have become icons of Danish design.

Gadi Amit

New Deal Design

Equal parts technological compendium, folktale and designer's scratchpad, this book explores how the devices that are integral to our lives come to be as you dive into the creative chaos that makes one of the most winning technology design firms in America tick. White moments, swarms, dark horses, wisdom instead of smarts & a decidedly old-school sketch and model first approach ensure that all that comes through the shop's doors is helping people live, work and play to their best.

*'Design is not just what it looks like and feels like,
Design is how it works'*

Steve Jobs (Apple CEO)