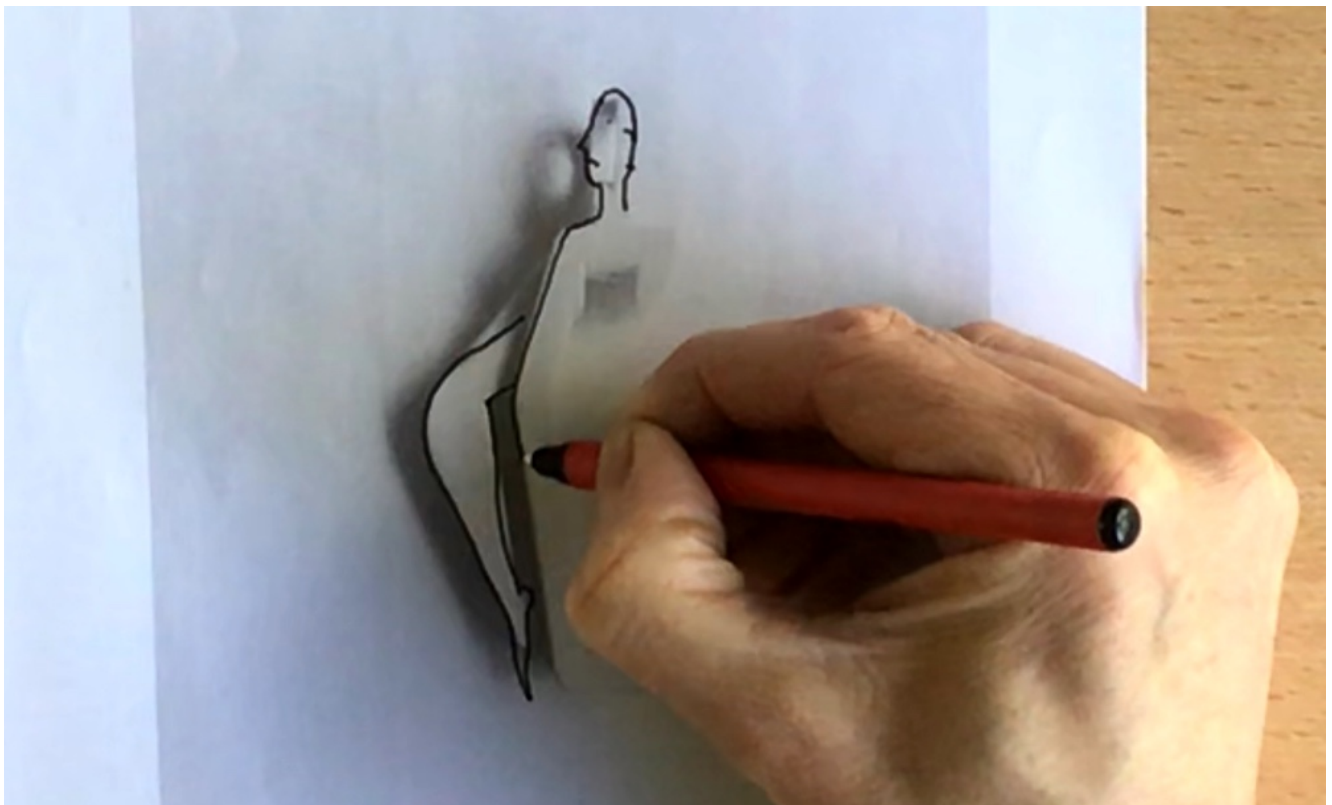


Adaptation Drawing

This is the fourth of six resources in the series: [‘Drawing for Science, Invention & Discovery Even If You Can’t Draw’](#) by Paul Carney, educational consultant and author. The projects enable teachers of both art and science to approach drawing from a new perspective. You can see all of the resources [here](#).

[By Paul Carney](#)

Introduction: This session is designed to explain the cognitive approach used by scientists to utilise the properties of one material for another, quite different purpose. It will also assist in developing pupil’s ability to cognitively imagine and invent.



Notes for Teachers

• Learning Objectives

- To explain the scientific principle of extracting and adapting the properties of materials for other purposes.
- To develop the ability to imagine and invent creatively.

• Age Range

Suitable for 7-16 years.

• Time Required

The activity takes approximately one hour.

• National Curriculum Targets: Art & Design

A high-quality art and design education should engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, invent and create their own works of art, craft and design.

• National Curriculum Targets: Science

The national curriculum for science aims to ensure that all pupils develop scientific conceptual understanding and also develop understanding of the nature, processes and methods of science.

• Things You'll Need

Photo resources of objects, or small junk objects to draw. Pencils and/or fineliner pens.

▪ **Extending The Lesson**

You should relate this lesson to further investigations into how scientists use adaptation to innovate. A good example of this is Biobricks, blocks of DNA that are used to design and assemble larger, synthetic biological circuits. See <https://biobricks.org/>

▪ **Supporting The Lesson**

Show how Japanese scientists solved the problem of sonic boom on their high-speed trains by looking at the beak of a kingfisher. <https://www.bbc.co.uk/news/av/science-environment-47673287/how-a-kingfisher-helped-reshape-japan-s-bullet-train>

▪ **Assessment Guidance**

Look for originality in execution of ideas rather than skill in execution. Ideas based on the face, the human form, animals or birds are common.

▪ **Artist Links**

Look at the artwork of David Mach or Christoph Niemann and how they adapt materials or forms to suit imaginative solutions.

<https://www.davidmach.com/>

<https://www.christophniemann.com/>

▪ **Cross-Curricular**

How might we use knowledge we gain in one subject for another, quite different purpose? E.g. can history help us predict the future? Can we use art skills in science or maths? Might learning a language help us become better at sport?

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Trial and Error Drawing

Methodical Drawing

Rowan: Clay Coiling Techniques to Make Penguins, Tweety Pie and a Dalek too!

Artist led facilitation in a setting for adults with learning disabilities; Abi, Sarah and students show how they made clay birds using clay coiling techniques and with a plaster mould for the birds' bases.

Perseverance, Determination and Inventiveness: Building Nests

Year 4 pupils from Comberton Village College and Cambourne Village College feeder schools met for a Gifted and Talented Sculpture Masterclass led by AccessArt at Bourn Primary Academy. The session centred around an exploration of the materials and construction methods we might use to build inventive, sculptural nests.

Playing with tape, projectors, Wicky Sticks and so much more!

Accessible approaches for collaborative drawing with visually impaired students with Sara Dudman and Debbie Locke at the Thelma Hulbert Gallery in Devon

Astronaut Paper Body Casts by Gillian Adair McFarland

A non messy, big impact project in a day on the theme of space exploration to fit with Tim Peake going to the International Space Station.

Rowan: Making a Clay Bird from a Mould

Abi Moore and students show how they made a collection of ceramic birds, from robins and dotterels to ducks using a plaster mould and coloured slip glazes to create individual and unique pieces.

Water and Rock: Teenagers explore building drawings with graphite and modroc

Teenagers look at pieces of chalk and flint and explore the physicality of rocks and geological processes with graphite and plaster.

Barbie & Ken Transformation

This adaptable resource shares how we transformed Barbie dolls using paper, fabric, modroc and paint. We had great fun researching and designing costumes and exploring appropriate materials. By Paula Briggs

Year 3 & 4 Making Club: Animal Parade – Week Three

This was the third and final session in a series of 'Animal Parade' workshops for children at Making Club at Milton Road Primary School where children painted their finished masks

Year 3 & 4 Making Club: Animal Parade – Week Two

This was the second session in a series of three ‘Animal Parade’ workshops, where children at Making Club at Milton Road Primary School, made 3D animal masks.

After having chosen their animals and created unique designs based on their Carnival Mask Templates in week one, children now attempted to cut and staple their creations to make them three dimensional.

Teachers Start the New Year with Sketchbooks

AccessArt introduces teachers from English Martyrs Catholic Primary School in Worthing, whistle stop introduction to drawing and sketchbooks as tools for recording and thinking.

Year 3 & 4 Making Club: Animal Parade – Week One

To use our Carnival Mask Template to create animal masks for an Animal Parade at the end of this half term.

Drawing Flames

Teenagers are led on several guided drawing exercises exploring mark making to the rhythm of a burning flame.

How To Clay Play

Long Legged Animals by Years 3 & 4 Making Club

Year three and four pupils explore making their own sculptures and to take on sculptural challenges like how to construct with a variety of materials, including Modroc, and (most importantly) how to make their creations stand.

Life Drawing: Drawing Hands and Feet with Hester Berry

Shipwrecked! A Shadow Puppet Play by Children Aged 10

As the winter nights draw in and it was dark outside and cosy inside, Friday Club students, turn the summerhouse into a theatre and make a shadow puppet play.

Paperback Figures: Collaged, Relief Sculptures

You May Also Like....

Visual Arts Planning Collections:
Cardboard and paper



Book art with Primary children



Making 2d & 3d Fashion Designs with Painted and Decorated Paper

