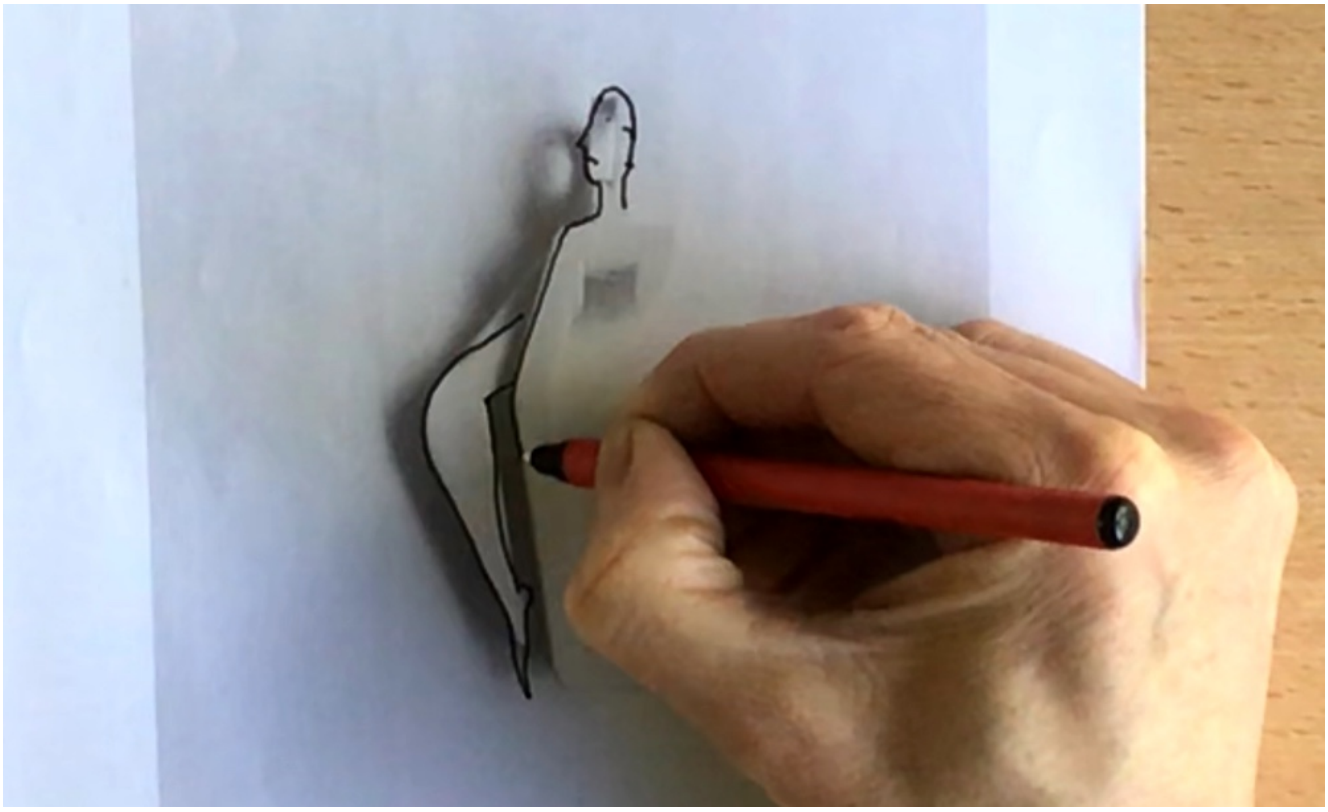
Adaptation Drawing

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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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

Drawing Flames

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

Paperback Figures: Collaged, Relief Sculptures

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3D Drawing with Paper: Texture – Surface – Structure

Artist Andrea Butler sets teenagers the challenge to create 3D forms from sheets of paper experimenting with structure and texture using manipulation techniques.

Bold Autumn Still Life

Teenagers engaged in creating bold still life drawings

Introduction to Life Drawing with Hester Berry

Paper Pigeon Project

Teenagers Improvise a Shadow Puppet Play

Enjoy following how the saga of a lion., a dog, a goat, a stegosaurus, and an ‘animal fairy’, told by Sophia and improvised by this creative ‘Experimental Drawing’ team

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Cantus Arcticus (Concerto for Birds and Orchestra) Op.61: Images Inspired by Music

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How to Make a Simple Origami Bird by Melanie Johns

Melanie Johns suggests using origami to transform old artwork. It’s an exciting way of using less successful drawings or paintings on paper to produce a new creative outcome, in the form of a personalised paper sculpture.

‘Birds in the Trees’ by Pupils at Battyeford Primary School

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Articulated and Animated Drawings by Teenagers at AccessArt's Experimental Drawing Class

A simple project to teach how to make an articulated drawing with only very basic materials.

Illustrating 'The Jabberwocky'

In this resource, AccessArt contributor Eleanor Somerset, illustrates how she worked with a group of 7-10 year old

pupils and another of 10-15 year old budding artists, at the Little Art Studio in Sheffield, on a series of workshops to illustrate Lewis Caroll’s The Jabberwocky.