Art & Design & ICT

Designing and communicating ideas

Keystage 2

2

Worksheet 1

About this unit of work

These sessions are designed to allow pupils access to an interactive website where they can engage in activities that introduce public transport and lead to the output of printed work that records their efforts. Pupils will produce a range of outcomes around the theme of public transport, including posters and marketing materials and 3D work that speculates on the future designs of public transport vehicles. As an introduction to the site pupils can utilize a limited number of options in designing a male or female figure that they can decide key features of (Make a me). Whilst the activities onscreen may prove sufficient for a number of short sessions the extension tasks suggest taking the ideas into other software and experimenting without the scaffolding that the website provides.

Context

The use of ICT in all subject areas is a current concern, so much so that there is a dedicated area at the NC in Action website at this address:

http://www.ncaction.org.uk

that seeks to promote the use of ICT in schoolwork. There are options to explore work for art or design & technology.

The national curriculum states that 'pupils should be given opportunities to apply and develop their ICT capability through the use of ICT tools to support their learning in all subjects'. For example the statutory requirements of the National Curriculum for design and technology (2000) include these statements:

Pupils should be given opportunities to apply and develop their ICT capability through the use of ICT tools to support their learning in all subjects. Pupils should be given opportunities to support their work by being taught to:

a. find things out from a variety of sources, selecting and synthesising the information to meet their needs and developing an ability to question its accuracy, bias and plausibility

b. develop their ideas using ICT tools to amend and refine their work and enhance its quality and accuracy

c. exchange and share information, both directly and through electronic media

d. review, modify and evaluate their work, reflecting critically on its quality, as it progresses.'

Similar statements exist for art & design. Work outline in this project can be seen as an overlap between the two areas utilizing ICT as a bridge.

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Worksheet 2

Lesson 1 introduction to the dingding website

Learning Objectives

Access and use online simulations and modelling

Consider their choices, justify design options

Resources needed

Access to computers and the internet

NOTE: Most new computer systems will have the 'flash' plug-in already within their internet browser but older systems without this should have it downloaded and installed: virtually all interactive sites today depend upon this software from macromedia. Teachers should try out these activities first on the machines the class will use as a way of testing the appropriate software is installed.

Colour printing facilities

Starter Activity

A game of 'consequences' where children take turns to draw the head, then torso, then legs of a figure.

Main Activities

Showing pupils how to access the www.dingding.org.uk website and demonstrate the opening activity of the 'make a me' figure.

Move on to the 'design a bus' activity, guiding pupils to the level one version. Here pupils can make design choices – some of them illogical but fun, others more practical.

The software facilitates printing out of the designs to your nominated printer.

Extension work for more able, gifted and talented

Additional sites that offer interactive colouring on a number of themes include the American site http://www.uptoten.com but children may need assistance in ignoring the online toyshop (!) and reaching the activity pages.

Plenary

Quickly blue-tacking up the printed designs, a discussion over the design choices pupils have made and a discussion aimed at identifying what would be suitable criteria for judging a bus design.

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Lesson 2 : Designing Bus

Learning Objectives

Manipulate and control a series of interactive elements in an online design task before tackling an original design work.

Resources needed

Access to computers and the internet

Colour printing facilities

Graphics software suitable for this age group.

Suggest oakdraw (http://www.dialsolutions.com/oakdraw.html) as an excellent solution to onscreen drawing in real measurements. This cheap but effective programme was developed from !Draw on the Acorn Archimedes platform for Windows users. Other drawing software offers higher complexity with increased options, such as Corel Draw: see http://www.shambles.net/pages/school/ImageM/ for an excellent list of software available.

Starter Activity

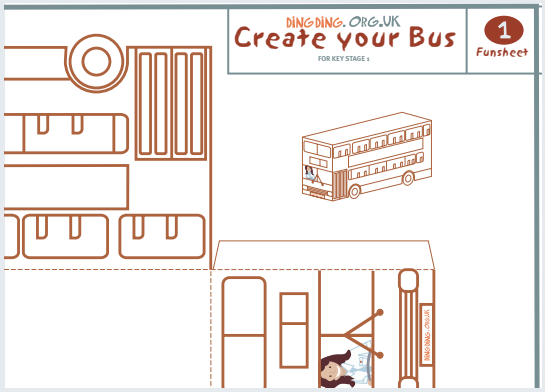
Class discussion on the reasons why we have buses: refer back to the printouts of the last lesson's bus designs and query the 'environmental friendliness' of their efforts.

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Lesson 2 : Designing Bus (continued)

Main Activity

Return to the dingding site and the 'design a bus' activity, but this time tackle the level 3 option. On the bottom options bar choose the 'print a worksheet' option, then the colour in bus option that pops up. This creates a new page that is a 'net' (strictly this should be known as a 'development' but most pupils will understand net) for printing out (onto light card or heavy paper) and colouring in if required.



Cut out and assemble these nets.

Extension work for more able, gifted and talented

Rather than simply colouring in the bus cutout these pupils could be invited to consider the new developments in advertising that often colour most of a bus' surface with advertising material or related colour schemes. An example visual aid image is below from http://www.adbus.co.uk/gallery.htm



Plenary

Assembling the work in a suitable display offers the opportunity to praise pupils' work.

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Lesson 3 : Future Bus 1

Learning Objectives

Consider future transportation needs for their own and other communities;

Designing for a purpose;

Learning to create 3D objects from nets.

Resources needed

Access to computers and drawing software such as Oakdraw

Sketching paper

Visual aids – buses, trains, trams: past and present examples.

It may well be that pupils are unaware that the original omnibus was a horse-drawn vehicle, and that trams are enjoying a modern renaissance in Manchester.

Colour printing facility

A basic net for a rectangular box – card template.

Starter Activity

A discussion that starts with a reminder of last lesson's work then a discussion over the types of buses that used to exist and moving on to the possible shape of future modes of public transport.

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Lesson 3 : Future Bus 1 (continued)

Main Activity

Sketching out ideas for future bus – pupils will need to design the side, front and back. At a suitable point introduce the card template and make sure pupils understand that they can change the dimensions or use the outline 'as is' in order to create their designs.

Before the end of the session introduce oakdraw (or other software you wish to use) and demonstrate drawing a net onscreen. It could be useful to have created an onscreen basic net that pupils could again use as a template.

Extension work for the more able, gifted and talented

Some capable pupils will find repeating the basic rectangular box to be less of a challenge, and should be offered licence to change the parameters of the rectangular box. In addition these pupils may carry through their advertising design ideas from the last session.

Plenary

Very much a reminder of where they are and it is likely that pupils will only have started the computer version of their work.

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Worksheet 5

Lesson 3 : Future Bus 2

Learning Objectives

Designing for a purpose

Learning to create 3D objects from nets.

Resources needed

Access to computers and drawing software such as Oakdraw

Colour printing facility

A basic net for a rectangular box – onscreen template.

Glue – Pritt stick or similar.

Starter Activity

A discussion that starts with a reminder of last lesson's work then a discussion over the types of buses that used to exist and moving on to the possible shape of future modes of public transport.

Main Activity

Continuing last lesson's work in transferring the future bus design features from pupils' sketches into the chosen software. Printout should be onto light card for assembly.

There is an issue of depth here in that pupils could spend several weeks working on the computers extending, refining and improving their designs. The point of using the computer is as an introduction to computer-aided manufacturing (CAM) which should allow pupils to work at a quality level that few of their hand produced examples could aspire to, but care should be given to curtailing the activity before the point where some pupils lose interest and drift from their work.

Extension work for more able, gifted and talented

The flexibility to offer additional challenges will have been picked up in the last lesson and will be carried through here: the addition of advertising and colour schemes, changes to the design of the future bus from the basic net supplied- all these should offer considerable scope for developments.

Plenary

End of this short project: a display of the work (a fleet of 3D designs!) and an appreciation of which works are judged the best and why.

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