Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

About this Unit of Work

The main aim of this unit is to allow pupils to use ICT in the pursuit of a graphic solution to a brief set by a real outside agency. ICT is transforming the way in which pupils can collaborate and work in teams whilst offering opportunities to manipulate and create graphical and digitised imagery in ways previously unavailable at school level. ICT is central to contemporary design work in the workplace, where computer aided design/computer aided manufacture(CAD/CAM) is widely used. Furthermore, designers often share design work and utilise email and video-conferencing to share ideas. The use of a visiting designer to emphasise these points would assist in pupils' understanding of the world of design and manufacturing.

The central design and make (DMA) task is to design and manufacture prototype promotional products that serve as transport passes and tickets for the Greater Manchester Passenger Transport service. Extension work can include further promotional artefacts such as posters, T-shirts or planning a publicity campaign. Pupils should gain the knowledge, skills and understanding of how to utilize ICT to take this project forward through focused practical tasks (FPTs) that offer a secure grounding in the use of the graphics software available. Guides to major software are available from the DINGDING website and in this pack (PaintShopPro): further guidance is often available on from manufacturers' websites such as Adobe PhotoShop tutorials at http://studio.adobe.com/

Teachers should be aware of the requirement within KS3 to assist pupils in the development of 'ICT Capability' and not just software training: the production of quality artefacts that are suitable for purpose and are clearly aimed at a certain audience will fulfil expectations for the appropriate use of ICT across the curriculum.

Although there is an emphasis on the use of ICT in this unit the place of hand sketching, drawing, planning via diagrams/mind maps is fundamental: pupils should not tie up valuable computer time blindly experimenting but rather go to the PC with clear aims and ideas.

The unit offers opportunities to discuss the values around public transport including environmental issues and the role of public transport in communities (links with citizenship). Below is a model brief:

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

4

Worksheet 2

Model Brief

Manchester Passenger Transport Executive has a need for a new range of ticket and week pass designs that are attractive to young people. In addition, posters and advertising materials that publicize the value of public transport in terms of community and the value of public transport in helping the environment are asked for: these should be in the same graphic style as the tickets and week/month passes you create.

The expected outcome is

A series of high quality designs produced with the aid of the computer (CAD);
the production of quality prototypes via computer printer (CAM);

A school website page(s) showing successful design work/upload to online gallery;
an evaluation report that contains the reactions of individuals from the target group to the new designs.

Where this unit fits in

This unit should take 12-16 hours to complete. It builds upon the experiences pupils should have had in year 7 (using ICT to support researching) and is intended to offer a graphical compliment to work expected in year 8 on using ICT to support making. The QCA exemplary schemes of work already offers a unit in year 8 as a vehicle for ICT making in resistant materials, textiles and food.

Alternatively this unit could serve as a precursor for year 9 pupils who are electing to study GCSE D&T: Graphic Products in year 10.

With respect to the National Curriculum this unit offers the opportunity to deliver the following requirements:

Knowledge, skills and understanding

Developing, planning and communicating ideas

1) Pupils should be taught to:

a. identify relevant sources of information, using a range of resources including ICT

b. respond to design briefs and produce their own design specifications for products

c. develop criteria for their designs to guide their thinking and to form a basis for evaluation

d. generate design proposals that match the criteria

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

e. consider aesthetics and other issues that influence their planning [for example, the needs and values of intended users, function, reliability, cost]

f. suggest outline plans for designing and making, and change them if necessary

g. use graphic techniques and ICT, including computer-aided design (CAD), to explore, develop, model and communicate design proposals [for example, using CAD software or clip-art libraries, CD-ROM and internet-based resources, or scanners and digital cameras] .

Working with tools, equipment, materials and components to produce quality products

2) Pupils should be taught:

a. to select and use tools, equipment and processes, including computer-aided design and manufacture (CAD/CAM), to shape and form materials safely and accurately and finish them appropriately [for example, using CAM software linked to a cutter/plotter, lathe, milling machine or sewing machine]

b. to take account of the working characteristics and properties of materials and components when deciding how and when to use them

d. to make single products and products in quantity, using a range of techniques, including CAD/CAM to ensure consistency and accuracy

Evaluating processes and products

3) Pupils should be taught to:

a. evaluate their design ideas as these develop, and modify their proposals to ensure that their product meets the design specification

b. test how well their products work, then evaluate them

c. identify and use criteria to judge the quality of other people's products, including the extent to which they meet a clear need, their fitness for purpose, whether resources have been used appropriately, and their impact beyond the purpose for which they were designed [for example, the global, environmental impact of products and assessment for sustainability].

Knowledge and understanding of materials and components

4) Pupils should be taught:

c. that materials and components can be combined, processed and finished to create more useful properties and particular aesthetic effects

d. how multiple copies can be made of the same product.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

4

Worksheet 4

Breadth of study

5) During the key stage, pupils should be taught the Knowledge, skills and understanding through:

a. product analysis

b. focused practical tasks that develop a range of techniques, skills, processes and knowledge

c. design and make assignments in different contexts. The assignments should include compliant materials .

Expectations

At the end of this unit most pupils will: be aware of the benefits of ICT when making; discuss social, economic, ethical and moral issues as they are presented, with examples of how CAM is used in industry; produce a plan that outlines a method of progressing a design idea using ICT; review CAM processes, as well as outcomes and their use of information sources; work with CAM equipment and tools, showing that they understand their function. Some pupils will have progressed further and will evaluate the success of the techniques used to make their products. These pupils should be allowed to consider the scale and content of any possible marketing programme to promote the new/revised product.

Model Brief

Manchester Passenger Transport Executive has a need for a new range of ticket and week pass designs that are attractive to young people. In addition, posters and advertising materials that publicize the value of public transport in terms of community and the value of public transport in helping the environment are asked for: these should be in the same graphic style as the tickets and week passes you create.

The expected outcomes are:

- a series of high quality ticket or weekly pass designs produced with the aid of the computer (CAD);
- advertising materials to promote public transport;
- the production of quality prototypes via computer printer (CAM);
- an evaluation report that contains the reactions of individuals from the target group to the new designs.

Note that several of the pupils' designs may include digitised photographs of themselves or their peers, but designs for uploading to the DingDing website gallery should contain only anonymous faces, as found via google image search or other means.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Pupils should commence your research by exploring the interactive website www.dingding.org.uk and consider its style and content. What age group and target audience do you believe it has?

Pupils should draw up a specification over what information the ticket design has to include, and what size or shape would be most useful. Other features you should consider:

- The need for the bus driver to easily identify that the ticket is valid;
- Fraud protection- proving ownership;
- Hard wearing: how can the ticket/pass be protected?
- Attractiveness to the target audience;
- Communicating the environmental benefits of public transport.

Lesson Plans

The KS3 Strategy has introduced the concept of breaking lessons up into productive episodes with clear, shared aims; a starter activity, main working and plenary discussions over progress and quality. Teachers will need to devise appropriate timings that are suitable for their particular classes.

Within a secondary D&T department it is typical for pupils to rotate into a graphics module for a six week period. In some centres this means a double period a week: in others two single lessons a week. There are five model lesson plans presented here and teachers may need to split these as required, or extend the run of lessons as timetables require

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

4

Worksheet 6

Week/Lesson ONE: Introduction to the brief

Learning Objectives

Understand the requirements of the set brief;

Learn to use the public website, dingding.org.uk;

Demonstrate an understanding of specification within the context of a design activity.

Resources needed

Access to the internet – could be usefully shared, two to a computer.

Sketching paper, preferably A3

Visual aid of a mood board

Starter Activity

In pairs, list the different groups of people who use public transport.

Move on into small groups: share and complete lists

Whole class: create complete list on the board.

Main Activity 1

Distribution of the brief (as in teachers' notes, Marketing Brief provided as a part of this pack or adapted by the department)

Pupils chosen at random read publicly the different stages of the brief.

Teacher to check pupils' understanding of the brief.

Key vocabulary to discuss – the meaning of 'specification'.

Pupils should be able to articulate and record the core expectations of this project.

Main Activity 2

Moving to the computers, class to log on to www.dingding.org.uk and directed to the ticket to ride KS1 online design activity. Making it clear that this is a junior activity pupils quickly generate a series of designs for travel passes. They are asked to explore different parts of the site, designing buses and trialling the same: seeking information they could use in their projects.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Week/Lesson ONE: Introduction to the brief (continued)

Extension work for more able, gifted and talented

In many centres teachers will know from their school co-ordinator the names of pupils on the register who are identified as G&T: these pupils should be encouraged to seek out additional information over public transport and the environmental debate. Others could be asked to generate a mind-map or diagram of how many places public transport gives them and other user groups access to.

Plenary

Bring pupils away from all distractions (the PC and its peripherals) and return to the lesson aims – Understand the requirements of the set brief; Learn to use the public website, dingding.org.uk; Demonstrate an understanding of specification within the context of a design activity.

The teacher led discussion should seek to address, with the pupils, if all these points have been met.

Homework: Collecting materials for a mood board.

Share with the class the idea of a mood board whilst showing at least one as an example. Such boards are used by professional designers when researching projects and pupils should quickly brainstorm the kind of images that might assist them over their new project. Alongside collecting tickets, guides, passes bus routes, travel posters etc stress that fashionable items – clothes, pop stars, gadgets – as well as colours, patterns and typefaces that they like, and other target audiences might like could be included.

NC connections: Art; ICT

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Week/Lesson TWO: Mood boards and initial design ideas

Learning Objectives

Understand the value of mood boards to a professional designer;

Learn to share and shape each others' initial ideas.

Resources needed

Sketching paper, preferably A3 or larger

A1 or similar card for mood boards

Visual aid of a mood board

Sheet: What does your ticket pay for? (from Dingding resources)

Templates and typefaces sheet (from Dingding resources)

Starter Activity

Use the sheet 'What does your ticket pay for?' explore with the class all the costs and overheads that a public transport service has to meet. As an extension, consider what advantages of using public transport in an area (Manchester) where 72% of people use 'other means' to travel to work? Impact on the environment could be discussed.

End on the hope that they will find new or better ways to communicate the advantages to the general public through their work.

Main Activity 1

Creation of mood boards. The emphasis here is on casting a wide net over the possible interests and images associated with a number of target audiences: some pupils will need assistance to 'put themselves in others shoes' whereas some pupils will often aspire to creating a number of mood boards, one for each possible target group.

It is critical that pupils do not rush into designing tickets, passes, advertising materials here or all they will do is rehearse the visual vocabulary they currently posses. The idea of the mood boards is to create fresh thoughts and feelings about the different audiences.

Creating an opportunity to consider, as a group, those boards that show particular promise can offer focus and inspiration to other pupils. Displaying the mood boards and creating an environment for the project is crucial to the success of the next stage.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Week/Lesson TWO: Mood boards and initial design ideas (continued)

Main Activity 2

Introduce the templates and typefaces sheet from DingDing resources. Working at a very large scale – 2 or 4 times the size of any proposed weekly pass or publicity leaflet proposed – pupils to sketch out ideas for the project in short, time limited sets. They should reference ideas, colour schemes, typefaces and concepts from the mood boards around them. After this they move their papers on and change to small groups who have to take the best of the sheets in front of them and synthesise possible solutions.

Moving back into individual work pupils should devise the solutions they wish to follow.

Extension work for more able, gifted and talented

In many centres teachers will know from their school co-ordinator the names of pupils on the register who are identified as G&T: these pupils should be encouraged to create solutions appropriate for different target groups – i.e. working parents; sports obsessed teenagers; heavy rock fans; elderly travellers; environmental warriors (GreenPeace supporters?); fashion victims; techies etc.
These need not all be serious!

Plenary

Consider with the pupils if all the requirements for the lesson have been met: Understanding the value of mood boards to a professional designer; and learning to share and shape each others' initial ideas. This is an opportunity to highlight some of the groups' best progress as a guide to others' work.

Homework: Complete design work – by hand – of at least one design for one target audience. Emphasise if pupils have achieved this in the lesson – some will – then the production of a 'sister' design that incorporates some 'family' elements but is aimed at a different audience would be appropriate.

NC connections: Art; ICT

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

4

Worksheet 8

Week/Lesson THREE: designing using ICT

Learning Objectives

Understand how ICT can be used to produce quality outcomes;

Learn to manipulate software to pre-determined designs;

Demonstrate sensitivity to different target audiences.



Resources needed

Access to computers running graphical software*.

Space next to computers to lay out handworked designs.

Digital cameras (optional) or/and flatbed scanners.

Visual Aid: An example of an awful design using WordArt, stretched and pixelated images, a mix of poor fonts and garish colours.

*Virtually all school computers will offer access to MicroSoft Office software: Pupils may be more confident of combining visual aspects – photographs, designs, text and background colours in the environment of PowerPoint. However the limitations of that software mean that a software graphical tool – PaintShop Pro; PhotoShop Elements; Serif or Logotron's Revelation- should be utilised to prepare content.
If the school uses Internet Explorer there is a free image organiser and editor from Google – Picasa2 (http://www.picasa.com/index.php) that is free – this programme allows simple crop, edit, red-eye removal and simple filter effects before the final image is exported.

Starter Activity

Ask pupils in pairs to consider the deliberately awful visual aid. Lead a short discussion identifying the positive or negative aspects of the design. Some pupils may appreciate some features contrary to accepted taste and will need guidance to consider target audience.

Main Activity 1

Working on creating their designs within the digital domain. Teacher support focused upon ensuring that pupils work diligently to ensure the computer is used to articulate their designs.

Main Activity 2

Continued working on the designs as above. All should complete one design: most will complete one design and will extend the design to publicity material: some will address a number of target audiences.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Week/Lesson THREE: designing using ICT (continued)

Extension work for more able, gifted and talented

Some more able pupils, in terms of using ICT may prove to have considerable expertise. As such they should be stretched to consider point of sale advertising for the product; covers for information packs; improving designs to incorporate anti-fraud measures.

Plenary

Sharing of good designs in progress, highlighting quality outcomes.

Homework: design record

As their work has progressed on the computer pupils will have adapted and changed their designs, or now have other ideas over how to best complete the production of the artefact(s). Pupils to complete a sheet detailing how their design has changed, and how their work should now be completed.

NC connections: Art; ICT

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Week/Lesson FOUR: Design(s) completion: Work completion and presentation

Learning Objectives

Bringing the practical work to completion

Presenting work

Resources needed

Access to computers running graphical software.

Space next to computers to lay out handworked designs.

Digital cameras (optional) or/and flatbed scanners.

Colour print facilities

Starter Activity

Recap on the project expectations: praise for the best of the ticket/pass designs or associated graphics produced by pupils.

Main Activity

Design work to be completed, mounted and suitable for presentation to target audience. These should include the ticket/pass design printouts, poster designs or other advertising materials the group has collected.

The presented work should include ideas sheets and ideas that may not have been completely worked out but represent effort and thinking time the pupils have spent immersed in the project.

Plenary

Group could rehearse the market research work, taking themselves as the audience and devising suitable feedback forms.

Homework: researching target audience reactions to the designs presented.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Week/Lesson FIVE: uploading to DINGDING online gallery/creating a school gallery for the school intranet

Learning Objectives

Raise awareness that designers utilise the internet for the fast transfer of files

Provide an introduction to FTP

Understand how ICT can offer a means to communicate to different audiences.

Resources needed

PCs; Access to upload (this may need to be checked with your network manager, as there may be a school or county firewall in place that disrupts uploading).

Website creation software. All schools will have this, and pupils will already have had experience of using the same from their ICT lessons.

Pre-arranged storage space on the school intranet;

Shared folder of the pupils' work available on the school intranet.

What are the strengths and weaknesses of these two styles of presentation?

Main Activity 1

Creation of a gallery space to show off the design work. Groups of pupils may prefer to work on different ideas for such a gallery space, and a shared pool of the design work will be needed here. The best of these works could be incorporated into the school's own intranet.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com

Art & Technology – Graphics

Designing transport passes and tickets

Keystage 3 (year 8 or 9)

Week/Lesson FIVE: uploading to DINGDING online gallery/creating a school gallery for the school intranet (continued)

Main Activity 2

Uploading the individual works to the DingDing Gallery. There will be a link on the gallery site to affect this. Note that the gallery is a refereed site and work will not appear to the public immediately.

Note that for this lesson, teachers should be aware that BECTA guidelines suggest no pupil photographs with identifying names should be placed in the public domain. Therefore any work put up to the DingDing gallery will have to observe this requirement. Individual schools will have a policy over this and the public parts of the school website.

Plenary

A critical discussion over the quality of the web design work, identifying to pupils which individual or group have tackled the brief best.

Homework: Completion of the evaluation report that contains target audience reactions previously researched.

All rights reserved / Copyright © Stardotstar Ltd / Tel: 0161 236 9740 / www.stardotstar.com