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Design and Technology Overview

Keystage 1

1

Lesson Plan

Aims: this lesson introduces pupils to different vehicles and focuses on wheels and axles

- As a class pupils discuss the different types of vehicles and their purposes
- Pupils play 'Build A Bus' and look at the effect of different components
- Pupils label a printout of a bus
- Using a template pupils build a model of a bus and attach suitable wheels and axles
- Pupils decorate their models

Overview:

In this unit pupils use ICT to help them learn about vehicles and to design a vehicle of their own. 'Build A Bus' allows pupils to change component parts and look at the effect on the overall vehicle.

A simple printout of a bus can be coloured and labelled. A template for a model bus can be used as a basis for individual designs and as a control to measure the effectiveness of different types of wheels and axles.

Links: Geography, Numeracy, Literacy

Design and Technology Overview – Build a Bus

Keystage 1

1

Teachers Notes

Investigative, disassembly and evaluate activities

Learning Objectives Children should learn	• That there are many types of vehicles • That vehicles have different purposes • That vehicles are made up of different parts • That ideas for their own designs can be obtained by looking at familiar products • To make simple drawings and label parts
Tasks	• Use 'Build A Bus' to introduce pupils to the different components of a bus. Why are some components not suitable? What effect do they have on the vehicle? • Printouts of a bus can be labelled and coloured by pupils • Use findings as a basis for making the model bus
Teaching Activities	• Provide opportunities for children to examine vehicles • Discuss with the children the different features of the vehicles • Ask the children to identify the different parts of a vehicle • Children label parts appropriately
Learning Outcomes At the end of this module children should be able to:	• Give examples of how different vehicles are used for different purposes • Name the main parts of a vehicle • Draw on their investigation of vehicles to inform their own design ideas • Label a simple drawing

A template for a 3 dimensional bus accompanies this work scheme.

Design and Technology – Build a Bus

Keystage 1

1

Teachers Notes

Focused Practical Tasks

Learning Objectives Children should learn	• To use wheels and axles, understanding that wheels and axles can be assembled in two different ways • To apply rules which will control risk when using materials, tools and equipment • To use hand tools safely and appropriately • To chose and use appropriate finishing techniques
Tasks	• Use template to construct a bus — try different types of wheels and axles on the same template. (You may have to print your print-out on card) • Use 'Build a Bus' to help make decisions about the types of passengers that different buses might carry
Teaching Activities	• Ask the pupils to practice joining wheels and axles to allow movement • Pupils try different ways of making axle holders • Pupils try different finishing techniques • Ask pupils to describe their bus and the person who would drive it – Where would the bus be driven and who would the passengers be? – Pupils could design a bus for a specific group of passengers
Learning Outcomes At the end of this module children should be able to:	• Join wheels and axles effectively and explain how they work • Use a range of finishing technique

A template for a 3 dimensional bus accompanies this work scheme.

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Design and Technology – Build a Bus

Keystage 1

1

Teachers Notes

Design and Make Assignment

Learning Objectives Children should learn	• To identify a purpose for what they intend to design and make • To develop their design ideas through discussion, observation and drawing • To measure and cut accurately • To assemble, join and combine materials in order to make a vehicle • To evaluate against their design criteria
Tasks	• Use the template to give individual pupils a basis for their model - pupils can decide on the most appropriate axles and wheels, colour for the bus and design a logo to fit in the advertising space • Pupils should consider passengers' needs and where the bus will be used
Teaching Activities	• Discuss what the vehicle is designed for • Encourage the pupils to consider type and size of vehicle, size and number of wheels, how it might be finished, what extras to add • Ask the pupils to decide what their bus will include – set the design criteria and record them • Provide opportunities to create labels or logos for their bus (use the advertising space) • Discuss the order in which the pupils will do things • Encourage the pupils to evaluate against their design criteria
Learning Outcomes	• Apply what they have learned to their designing and making • Develop their ideas for making a model vehicle which has a purpose and which reflects their original idea • Construct a vehicle which functions • Finish the vehicle with a label or logo • Evaluate their finished vehicle

Links: http://www.dingding.org.uk/games/manchester/buildabus/ks1.html

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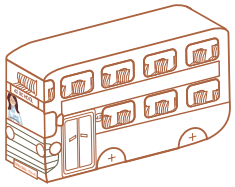
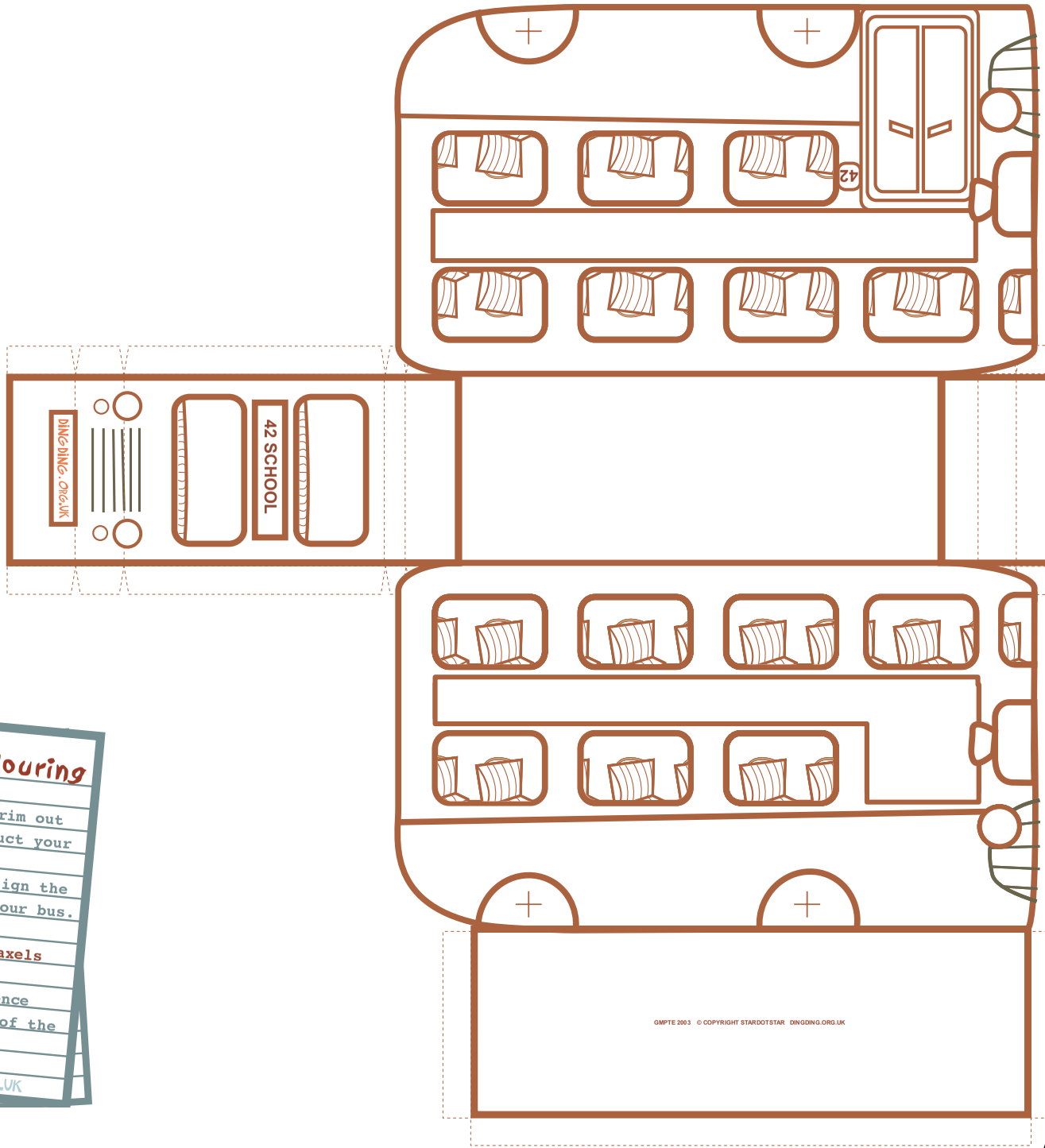
Create your Bus

FOR KEY STAGE 1

1 Funsheet





Get colouring

Carefuly trim out and construct your 3D bus.

You can design the livery of your bus.

Looking at axels and wheels. What difference do the size of the wheels make?

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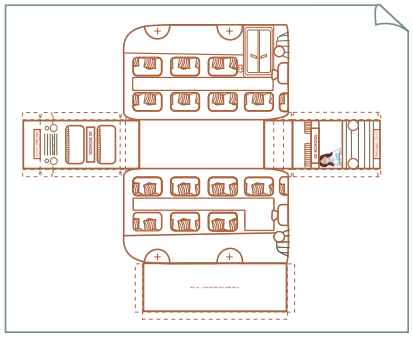
Create your Bus

FOR KEY STAGE 1

2 Funsheet



Glue your bus template onto some light stiff card.

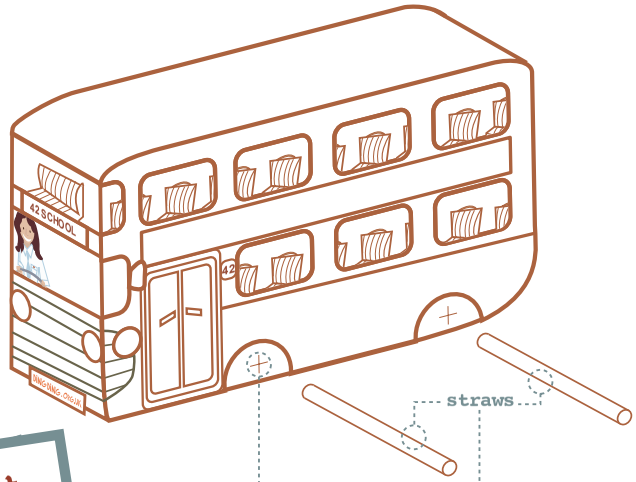
Decorate your bus.
What colour will your bus be? How many people are on your bus?
What will you advertise on the sides of your bus?

Carefully cut around the dotted lines.

And glue the flaps in position.

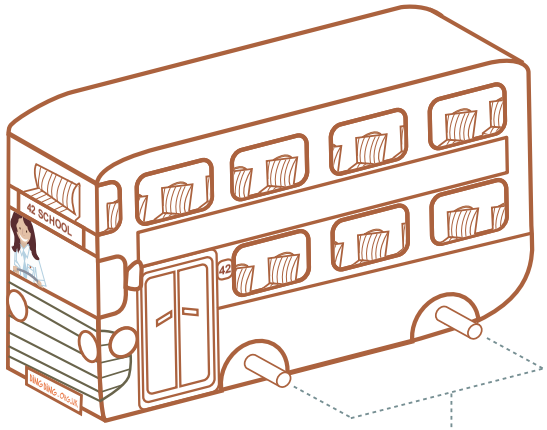
You will need...

Funsheet 1
1 sheet of light stiff card
Glue
Paint or crayons
Scissors
2 straws
A selection of different size 'wheels' 4 of each
Blu-tac

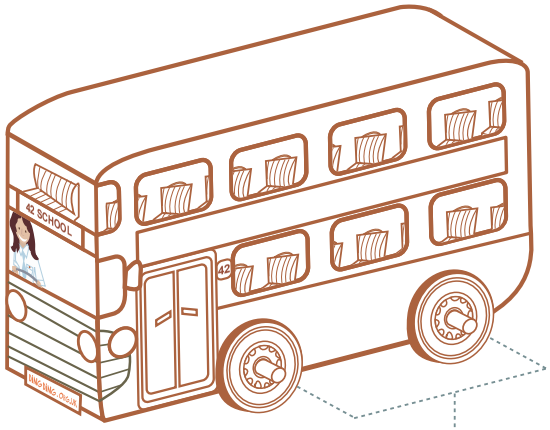


make a hole where indicated by the crosses in the wheel arches

make sure that your straws are at least 2cm wider than your bus on both sides



push your straws through the holes in your wheel arches leaving 2cm at each side



push your wheels onto the straws, you might need a bit of blu-tac on the end of each straw to secure your wheel

TRY YOUR BUS OUT!!!

try a selection of different sized wheels
you could use cotton reels, cartons, big buttons...