

## Home learning April-May 2020

# OBHS D&T

## Year 7

This booklet covers the first half of the summer term. You will complete the Science Museum project that you've already started and then practice some drawing, making and complete an investigation task. Do each task in the correct order and keep all your work together to show your teacher once we are all back at School.

Lesson	What you need to do	tick
Lesson 1	Use the net (outline of the lunchbox to draw out and make your design.	
Lesson 2	If you have the materials/ ingredients at home, you can make your toy or game and/or healthy packed lunch.	
Lesson 3	Ask people at home to evaluate your designs. What do they like about your designs? What would they change about them? Then consider their comments - can you make any improvements?	
Lesson 4	Practice your sketching by drawing the 3D shapes, do as many as you can and fill the page. Use a sharp pencil.	
Lesson 5	Complete the tasks on the page titled <i>Wider Issues: Impact On The Environment</i> .	
Lesson 6	Complete the shading exercises in your booklet, using pencil and coloured pencil and take your time.	
Lesson 7	Complete the One Point perspective task. If you need help with this there are excellent tutorials on <a href="http://www.technologystudent.com">www. technologystudent.com</a> .	
Lesson 8	Complete the Baby Bot, it will glue easier made from paper but you may wish to glue it on to thin card. You will need sharp scissors and a glue stick. You could try to and design and make your own!	

# SCIENCE MUSEUM BRIEF

Schools around the country regularly visit the Science Museum for school trips.

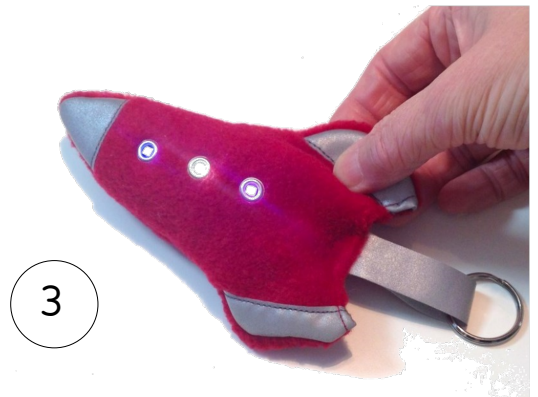
The museum would like you to design a product that the children visiting the museum would like and will help them learn more about science.

The product they would like you to design is a lunch pack with all its contents.

It must include the following:

1. A healthy and nutritional lunch that children will enjoy (with 5 lunch items)
2. A promotional toy or game
3. A textile (fabric) keyring with lights
4. A card box to hold all the items

This project is the equivalent of 6 lessons.



# TASKS

In order to complete this task, please complete the following steps:

## INVESTIGATE

- Research and investigate the task. Consider all the possible themes it could have, such as space, chemistry, nature, physics, inventors etc.
- Mind map the themes - consider all the designs that could be linked to your themes.
- Think about the products you need to design and look at toys and games you have at home to inspire you.

## LUNCHBOX:

- What does the lunchbox need to do - consider the user and the museum selling it?
- What information is needed on the outside?
- How will it promote the Science Museum?

## TOY/GAME:

- How will it promote the Science Museum?
- How will it work?
- How will it entertain the child?
- Consider the designs of the toy/game:
- Could it be something the child builds?
- Could it be something that they can play with straight away?
- What will it teach them about science?

## HEALTHY LUNCH

- Use your knowledge of 5 a day and the Eatwell plate to plan a healthy lunch

## DESIGN

- Come up with 3 designs for both the toy/game and keyring (on paper or try and make a model of it) and the lunchbox (see sheet)

## MAKE

- Use the net (outline of the lunchbox to draw out and make your design)

**+1 Challenge** If you have the materials/ ingredients at home, you can make your toy or game and/or healthy packed lunch.

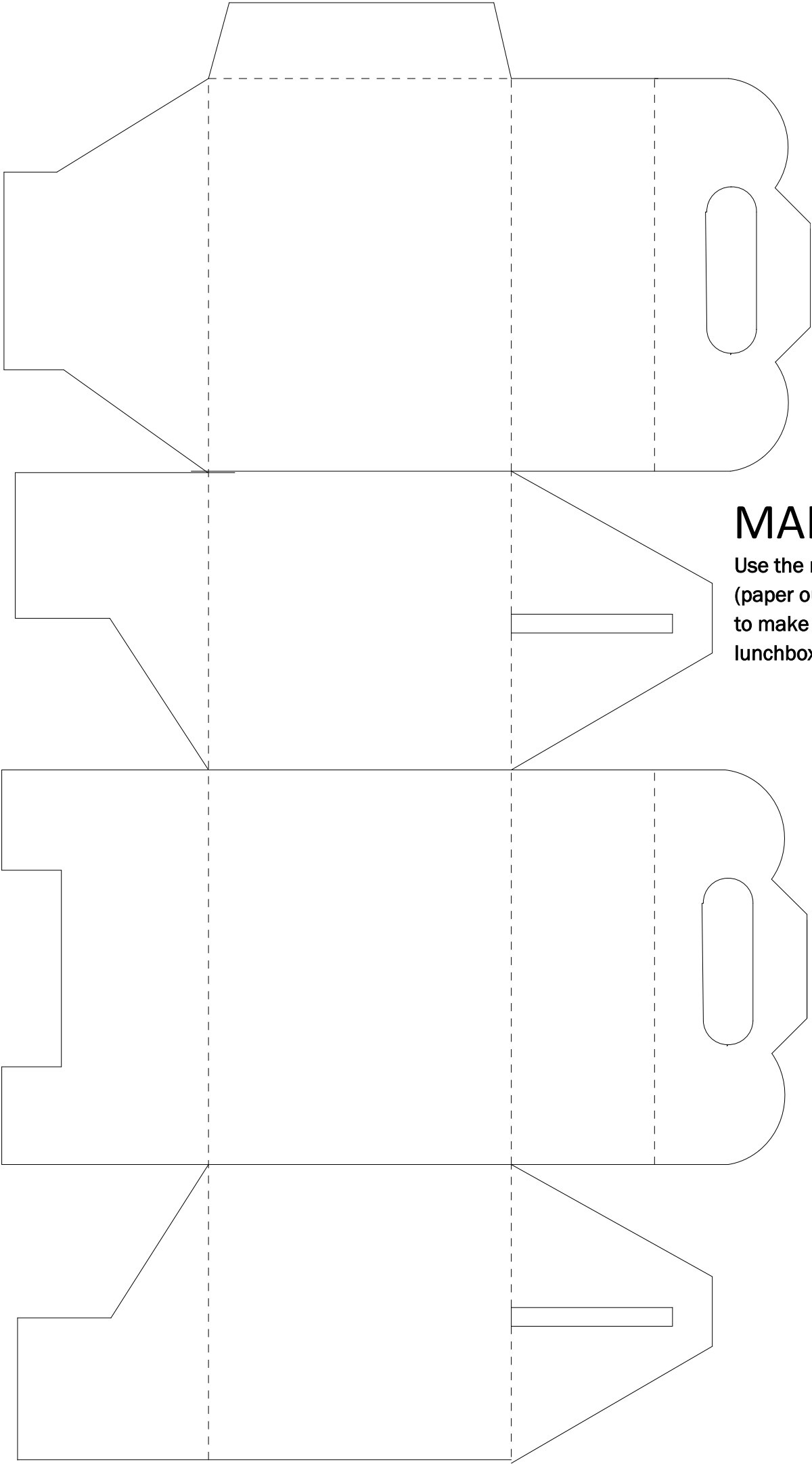
## EVALUATE

- Ask people at home to evaluate your designs.
- What do they like about your designs?
- What would they change about them?
- Then consider their comments - can you make any improvements?

**Bring in what you have made once we are back at School.**

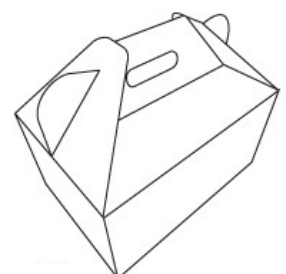
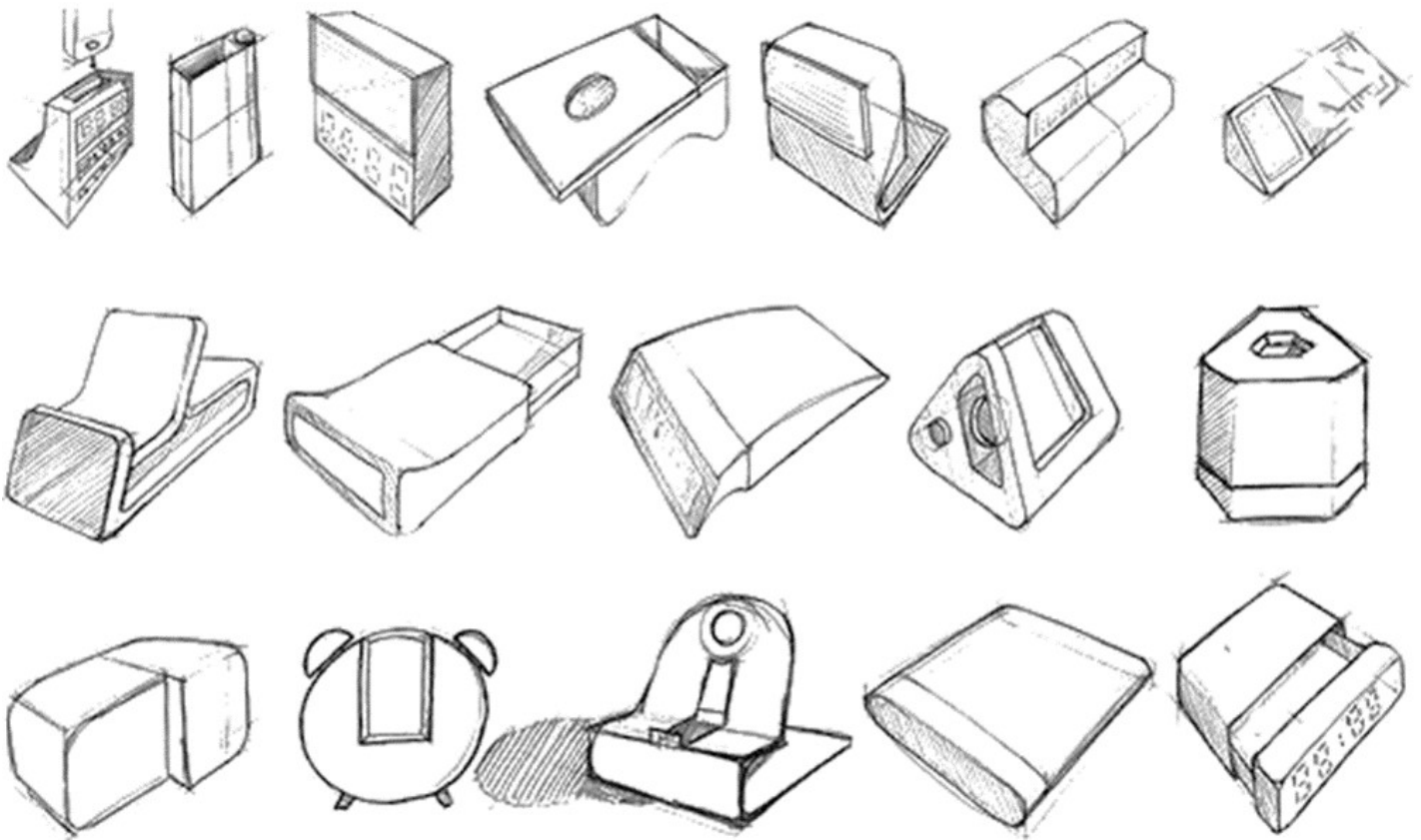
**MAKE**

Use the net  
(paper outline)  
to make your  
lunchbox





**Drawing Skills** Have a go at sketching these 3D shapes –fill the page. This will help you build confidence in drawing your own design ideas.



# Wider issues- Impact on the Environment

Single use products are devastating for the environment, We are shifting towards removing them from our society, but it won't be a quick fix.

## Quicksketches

Draw 5 to 10 products that you consider to be a single use product. (maybe consider food packaging, medicines and home cleaning)

## Top tips for a better future

- Use materials that are locally sourced
- Design products to be easily disassembled
- Make products easy to repair
- Select materials from non-finite sources
- Make products as inclusive as possible
- Go biodegradable
- Avoid single use



As consumers, we need to be aware of our impact on the environment.

**Complete the WWF survey.** How did you compare to the average?- use the tips to improve your carbon footprint further!



**Label** the diagram below (you may need to do a quick internet search if you are unsure of the 6 R's).



If you were to **redesign** the common biro to be more environmentally friendly, what changes would you make (label/sketch your changes)



### Equipment list

- Sharp pencil(s) HB, 2-4B and 2-4H
- Rubber
- Sharpener
- Sharp coloured pencils

### Shading – Pencil Only

Shade the box from dark to light using the flat edge of your sharp pencil



### Shading – Pencil Only

Shade the box dark, light to dark using the flat edge of your sharp pencil



### Rendering – Colour Pencil Only

As before use your shading technique to render with one colour from light to dark

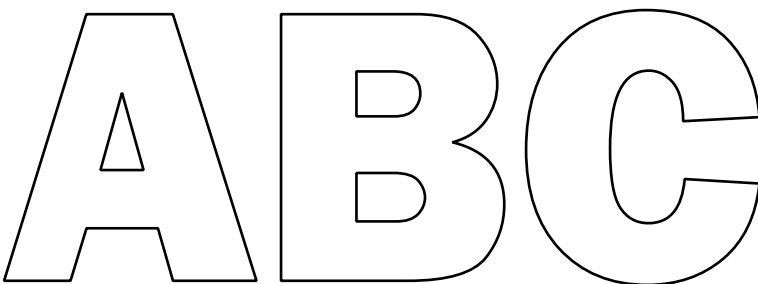
1. Select 2 colours and blend those 2 colours from 1 to another (Blue from the left, shading 6 squares right. Green from the left, shading 6 squares left)
2. Blend 2 or more colours smoothly
3. Sketch your initials as block capital letters and show off your new rendering and shading skills

1

2

3

4



# Shading, Rendering and Texture

## Texture – Pencils and Colour Only

A texture is how an object feels. How can we translate something we feel into something we see?

The material and surface dictate how much light is reflected.

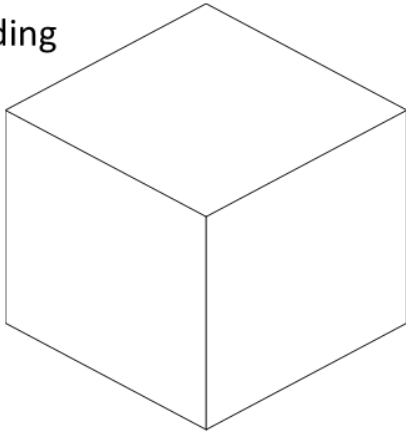
**Hard Surfaces** like metal and glass are reflective so use sharp crisp edges with strong contrast.

**Soft Surfaces** like woods do not reflect much light so use soft shading and blending.

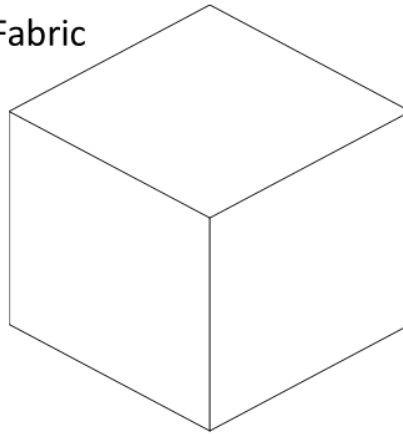
**Rough Surfaces** like fabrics will have mixed light reflection and so a mixture of sharp contrast with soft blending should be used.



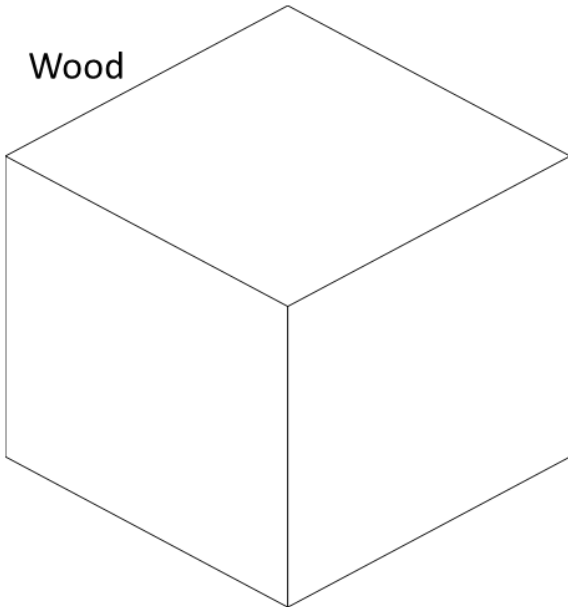
Shading



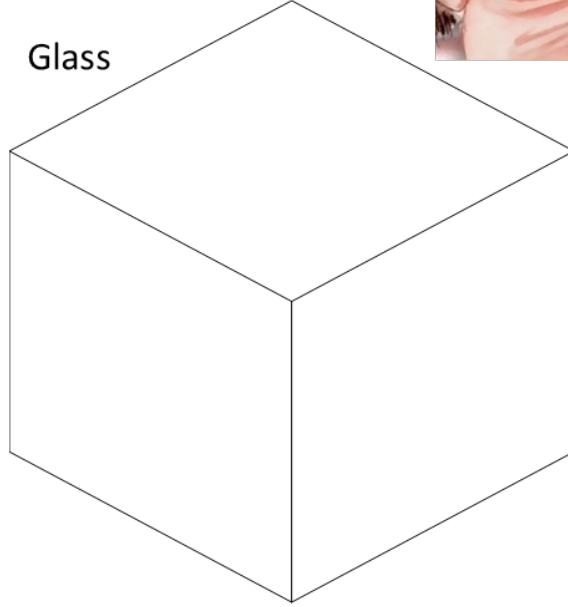
Fabric



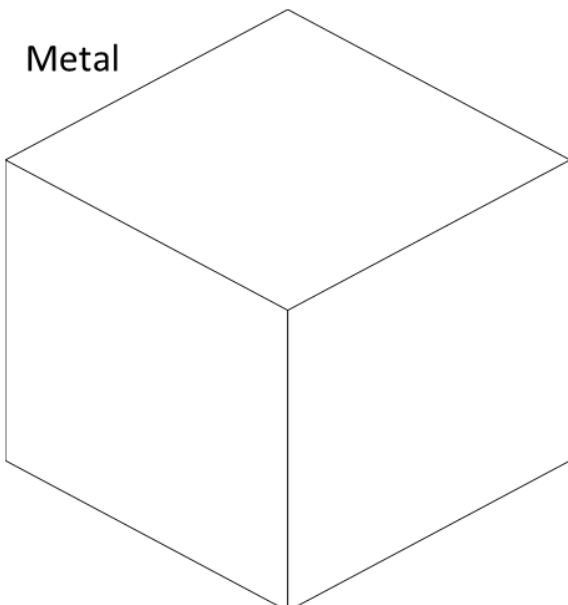
Wood



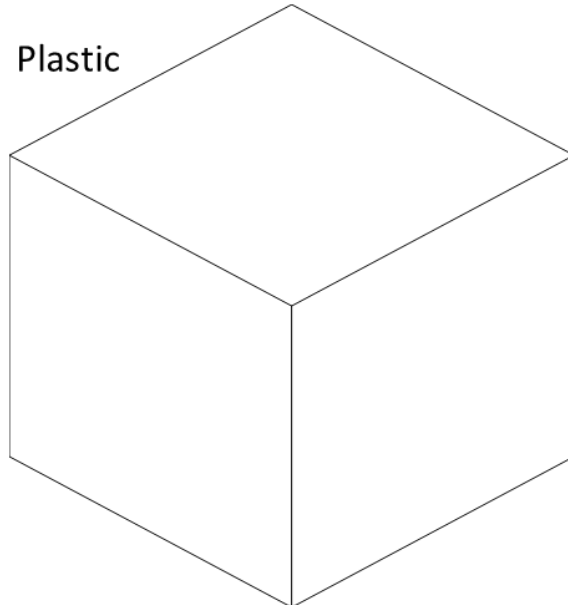
Glass



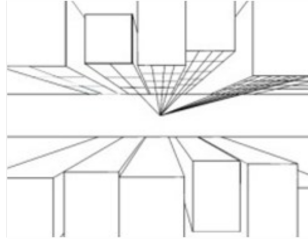
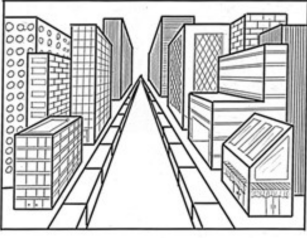
Metal



Plastic



# One Point Perspective



## Equipment list

- Sharp pencil
- Sharpener
- Rubber
- Ruler
- Sharp coloured pencils

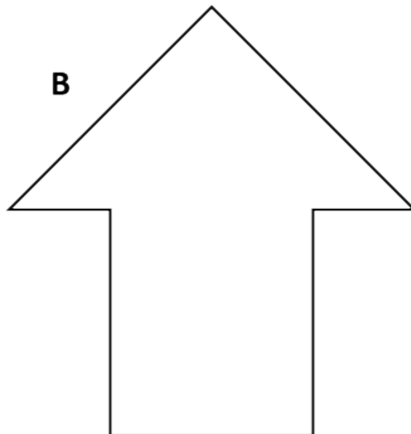
Vanishing  
point



A



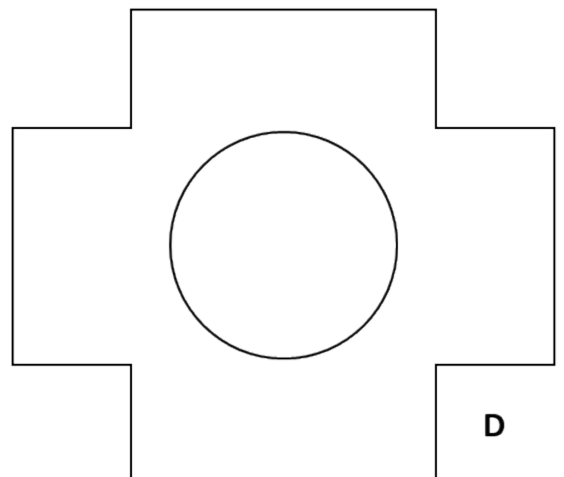
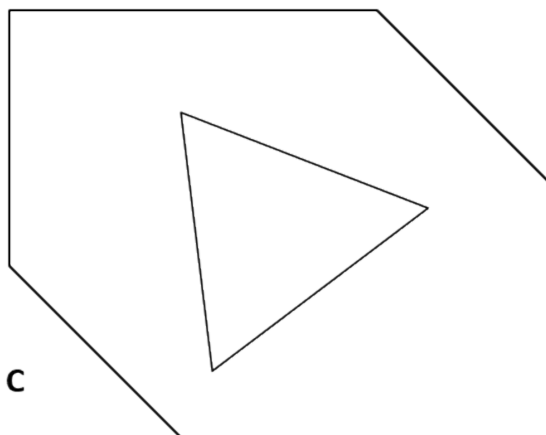
B



**One Point Perspective** is a really effective way to add depth and perspective to an 2D drawing. The trick is to keep all horizontal and vertical lines parallel to each other and draw the depth lines exactly to the vanishing point.

1. Using a ruler and a sharp pencil, lightly draw straight lines from each corner on shape A and B
2. Select the depth you want your perspective shapes to be and draw the respective parallel lines
3. Use a pencil to go over the line you want to keep
4. Rub out the remaining construction lines to complete your perspective drawing
5. Complete the same for shape C and D. The inside shapes should be considered empty or hollow.

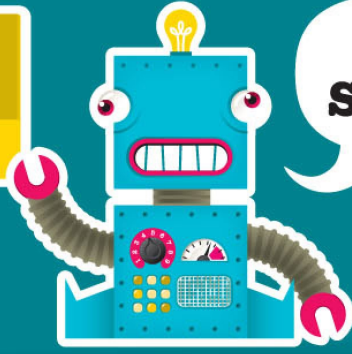
**Challenge:** Have a go at creating a single point perspective street.





PAPERCRAFT

# ROBOT



01

awe  
some!

as seen at  
Lou's shop

visit Lou's Shop at  
[www.echslectir.com](http://www.echslectir.com)

