

Design and Technology

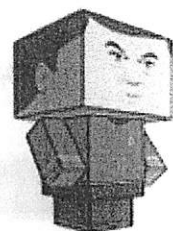
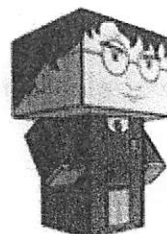
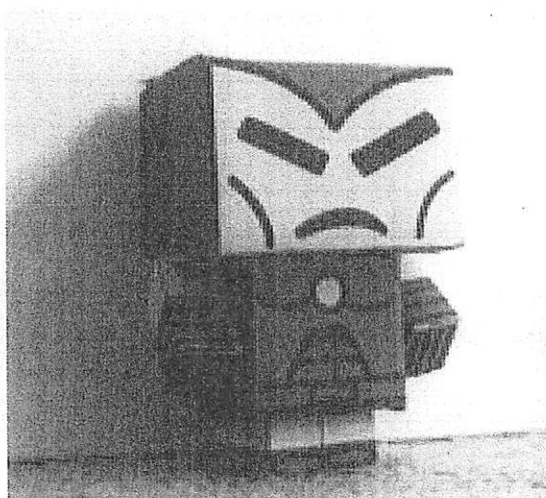
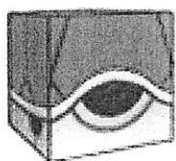
CUBEEECRAFT

Download → Print → Cut → Fold

Name -

Form -

Group -

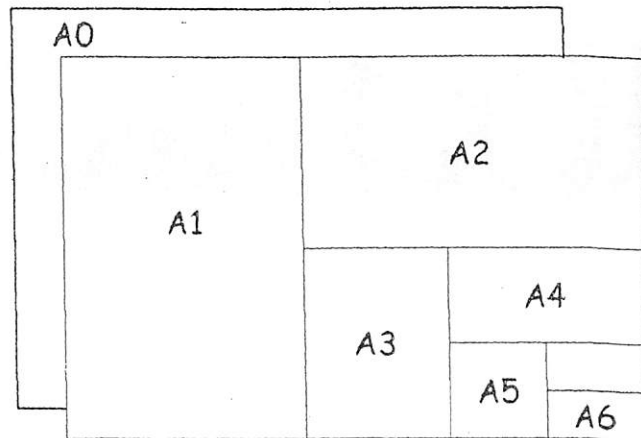


Materials and Equipment

Types of paper / card

There are various types and grades of paper and card.

These range from very expensive hand made paper to the cheaper more common papers such as newsprint. Paper varies in size and weight. A0 is the largest, with A6 being the smallest. A sheet of A3 is the same size as two sheets of A4 placed side by side.



Range of Pencils

These come in a range of hardness from 9H down to 6B or softer. HB is the most common type of pencil and is the best to use for general drawing and sketching.

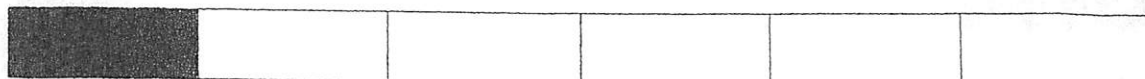
2H is a good pencil to use on tracing paper and for construction lines.

2B to 6B are best used for shade techniques.

Use a HB pencil to show different levels of shading, which can be achieved with one pencil.

Shade Black

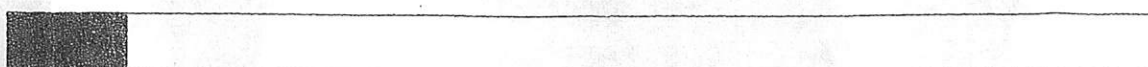
leave white



Now using different pencil do the same below, keep an even tone in each box.

Pencil type

In the box below shade the box from black to white.



Pencil Grades

Shade each of the boxes with the pencil grade shown.

2H	H	HB	B	2B

DRAWING CHALLENGE

Draw 10 different lines from light to dark using just 1 pencil.
Start by pressing lightly and getting firmer as you progress
through the lines,

1	lightest
2	
3	
4	
5	
6	
7	
8	
9	
10	Darkest

DRAWING CHALLENGE

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1	lightest
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9	
10	Darkest

SHAPE AND FORM

A shape is flat and two dimensional .

Draw below the following 2D shapes

Square	Rectangle	Triangle	Circle

A shape can be changed into a 3 dimensional form

Draw below the following 3D forms

Cube	Oblong	Pyramid	Sphere

FREE HAND SKETCHING

Sketching is not an excuse to produce drawings that are rushed and shoddily drawn. To sketch well involves an economy of effort rather than no apparent effort at all! To improve your sketching techniques you need to practise drawings curved lines, straight lines and lines that are parallel and at right angles to one another.

Points to remember - lines should be thin, continuous lines and NOT look hairy! Once you have practised on plain paper then try filling this page with neat lines.

Horizontal and parallel

Vertical and parallel

Lines that are at 45 degrees to one another and parallel

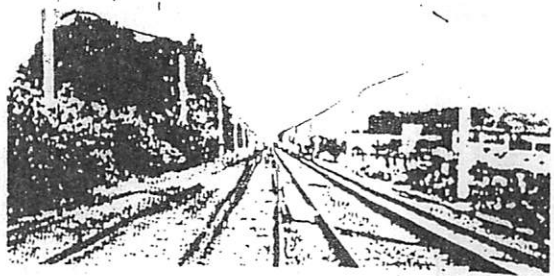
Now sketch all of the above onto the space below and see if you can recreate grid paper. Try and make your diagonal (45 degree) lines go through the corner of each square. This is difficult but with practise it can be achieved.

Perspective drawings

Have you ever noticed that the further away something is from us, the smaller it appears to be?

You may also have noticed that railway lines, which we know are parallel and could never meet (for obvious reasons to the train!), seem to meet in the distance.

A perspective drawing recreates the illusion of objects getting smaller and parallel lines converging as they get further away.

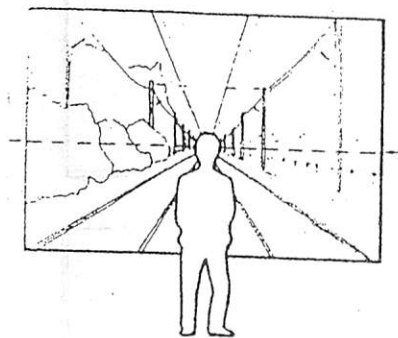


Perspective drawings therefore are very realistic to the way in which we actually see them. There are three types of perspective drawing

- Single or one point perspective - e.g. train tracks.
- Two point perspective, which is used the most - e.g. building
- Three point perspective, which is used to convey height - e.g. tall skyscraper.

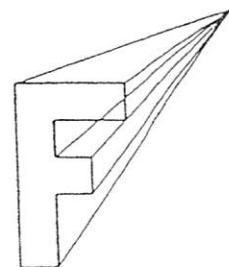
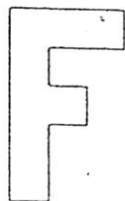
We are only going to study 1 and 2 point perspective.

Single Point Perspective

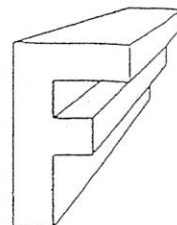
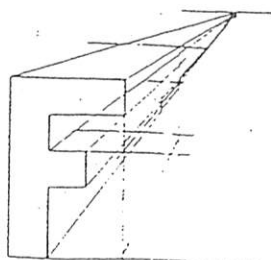


Here the railway has been simplified. The tracks appear to meet at the *vanishing point*. This is situated on the *horizon line*, which runs across the drawing. The horizon line always matches the height of the viewer's eyes, and is sometimes called the *eye level*.

1. Draw the front view in a normal position.
2. Establish the vanishing point and draw lines from all relevant corners to the vanishing point.

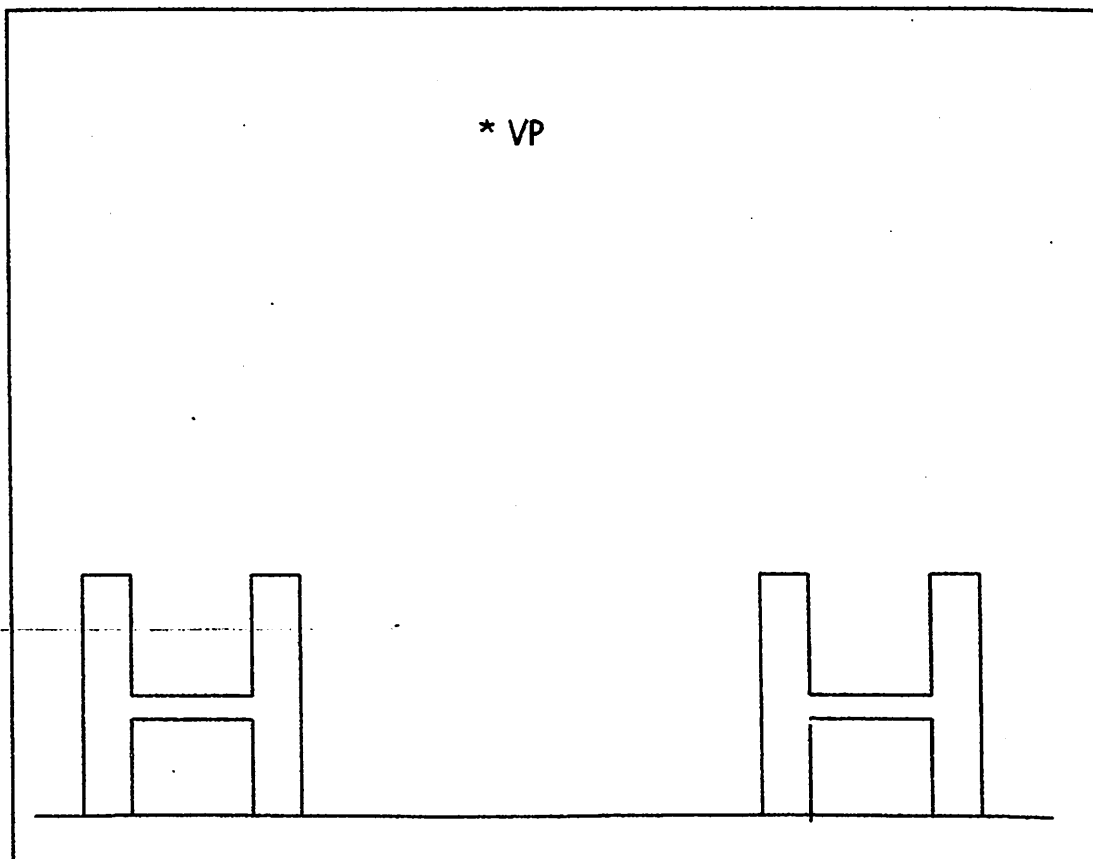
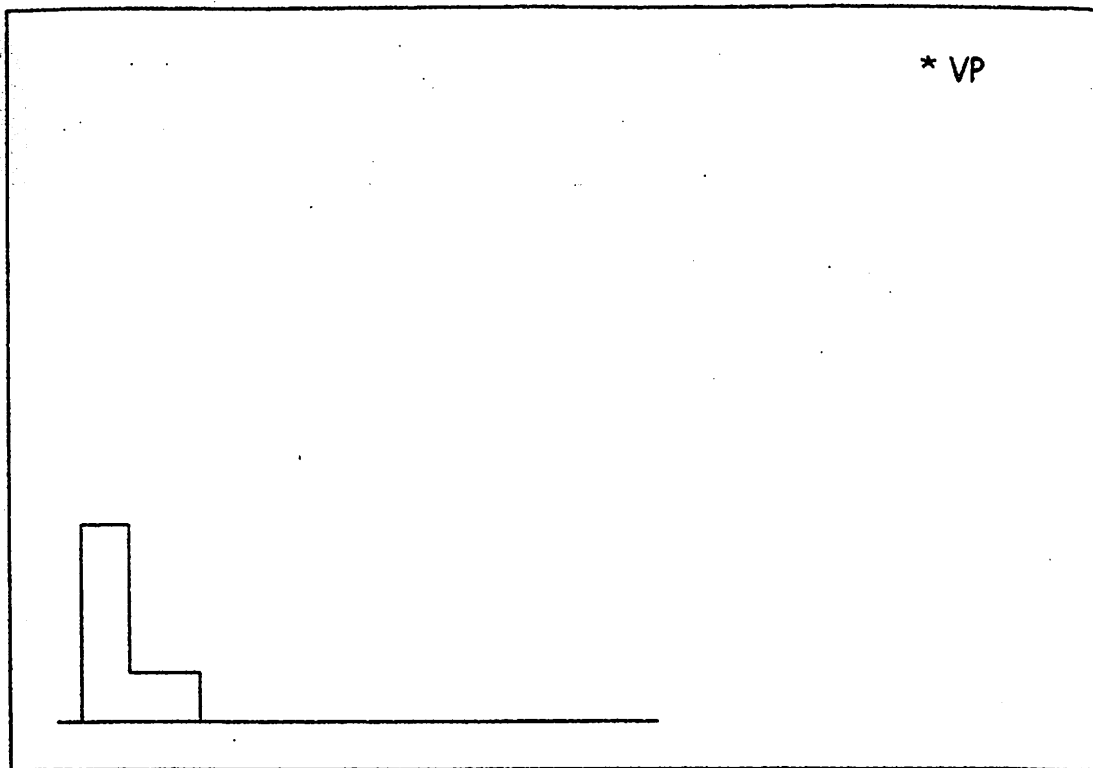


3. Establish the depth of the object on the top edge and draw vertical and horizontal lines from the point to establish depths at other points.
4. Draw in the outline of the object and clean up the rest of the drawing.

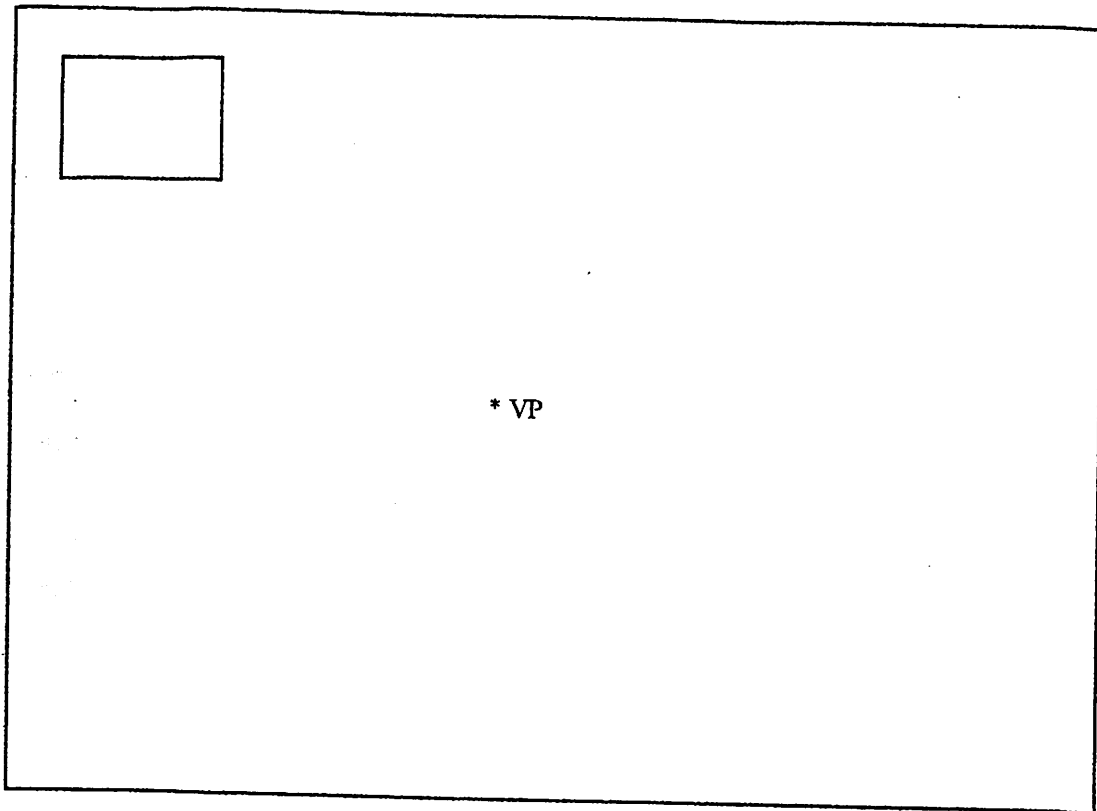


LETTERING

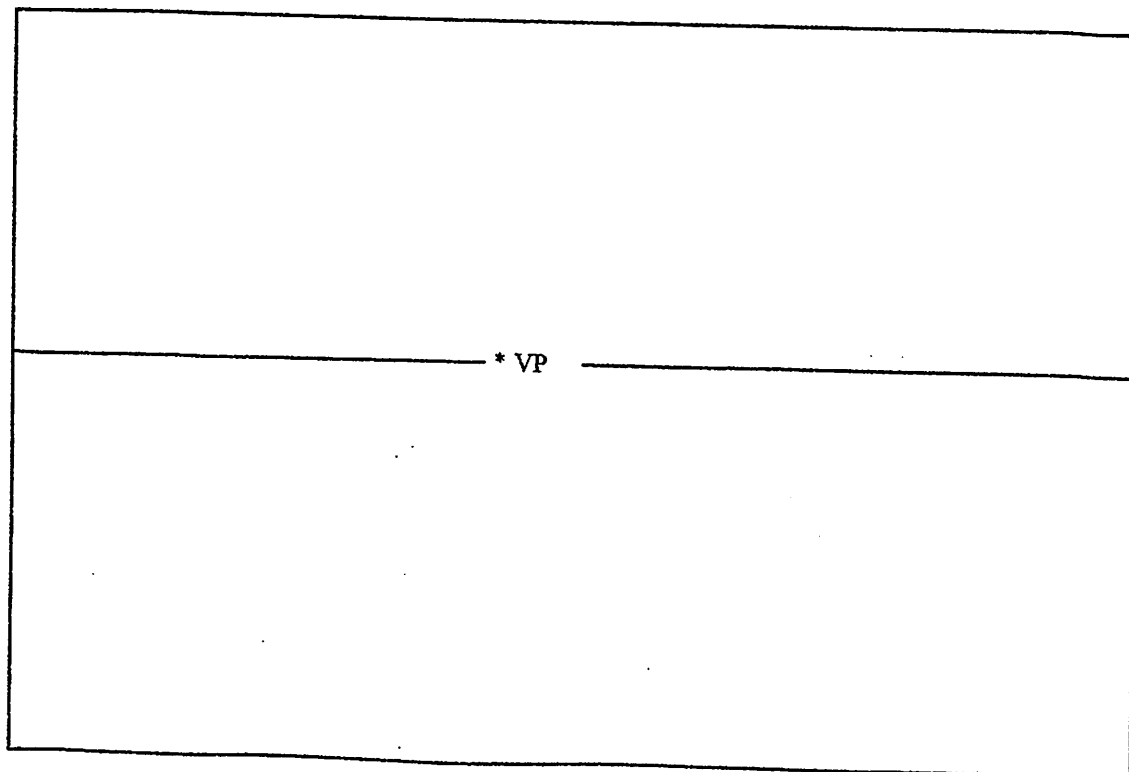
Use the letter F example and draw the word LEFT in one point perspective.



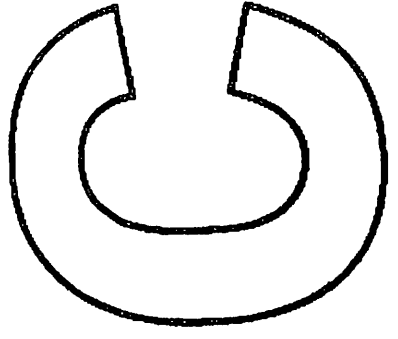
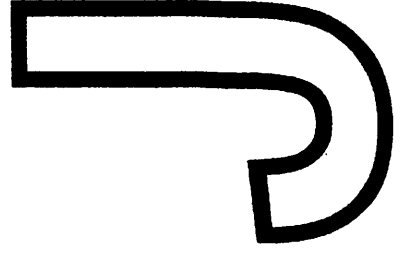
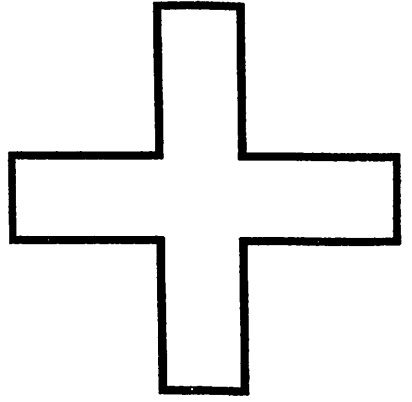
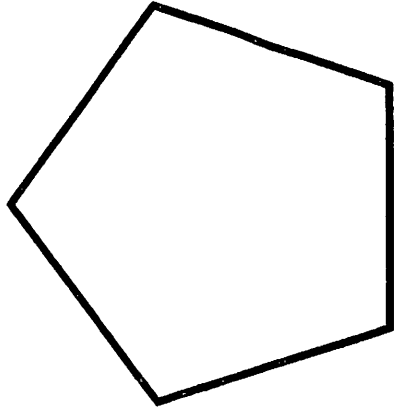
Draw a box in each corner of the square and join the lines to the vanishing point



In the box below try and recreate the picture of the train lines and overhead cables. Think about what is above the line and what should be below.



1 Point Perspective

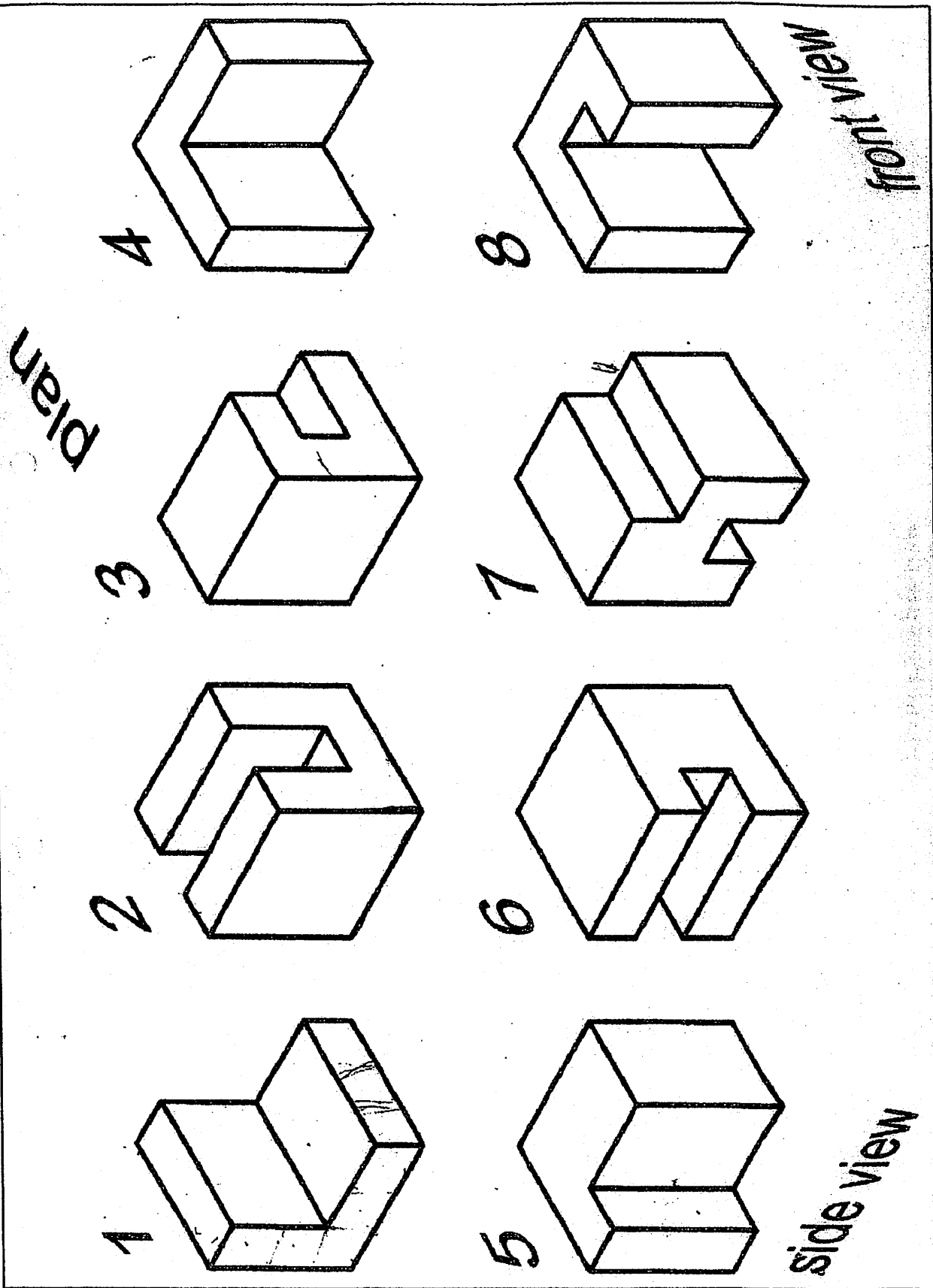


2 Point Perspective



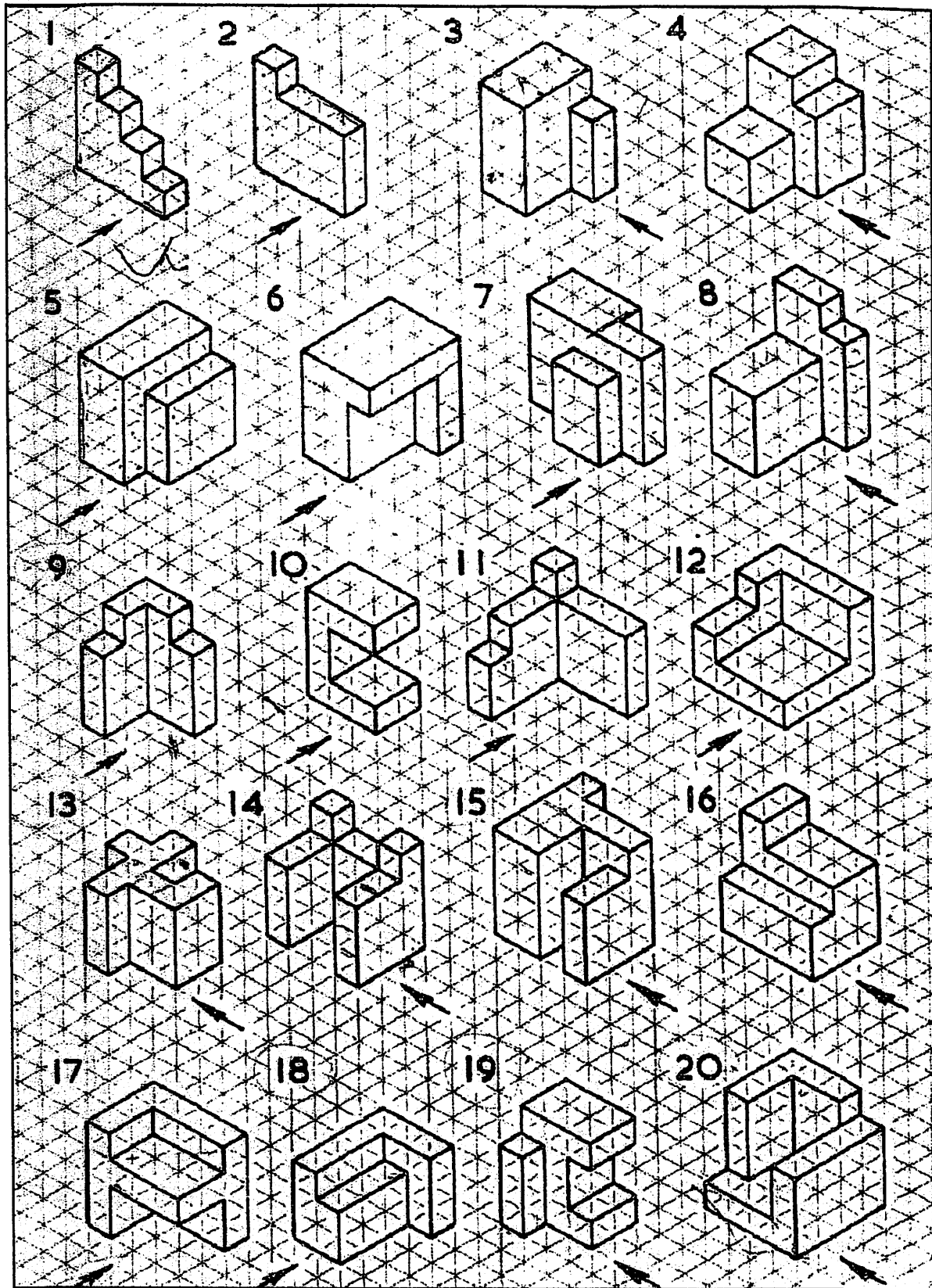
Isometric Drawing

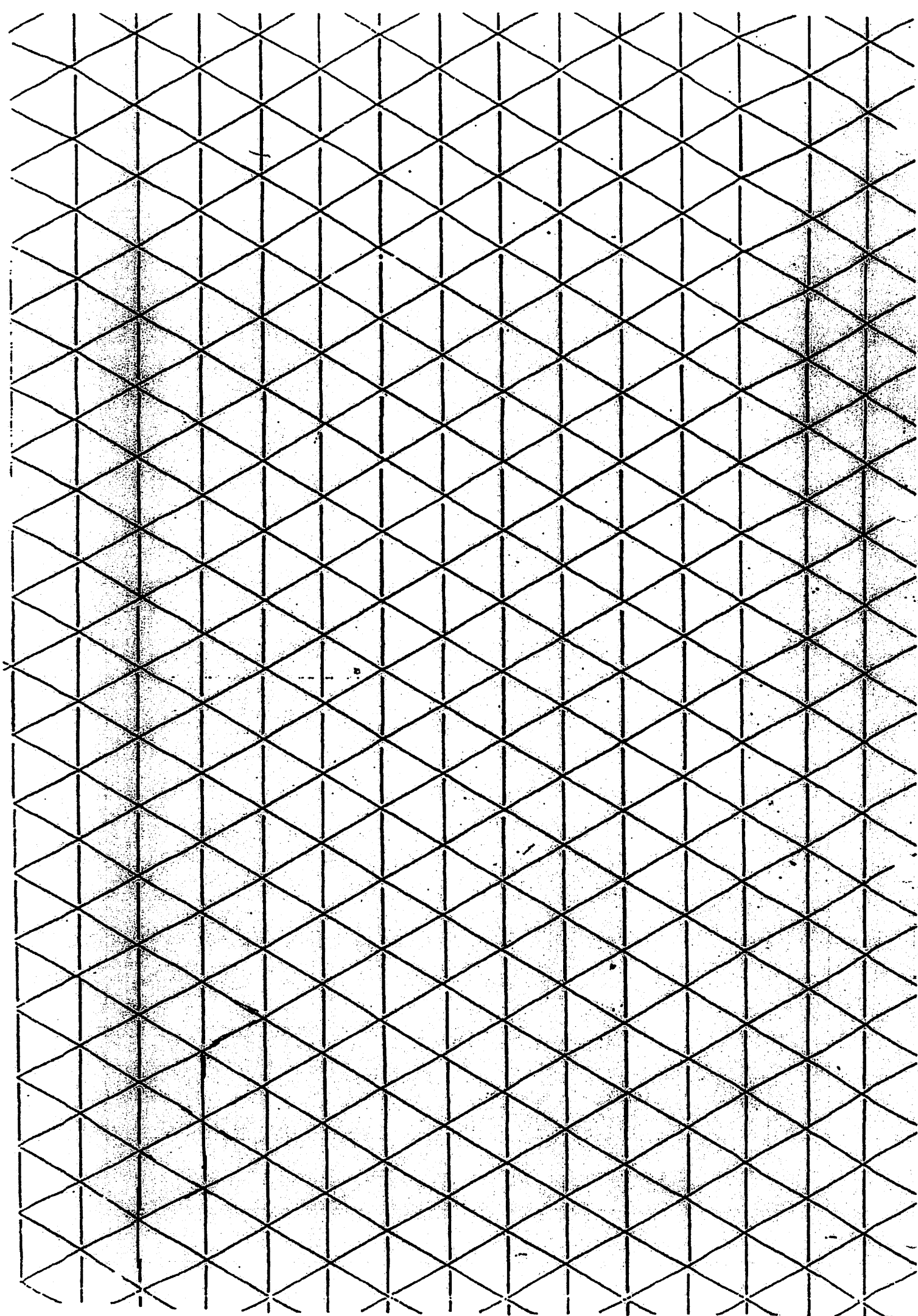
Copy the shapes below and re-create using isometric paper.



Isometric Drawing

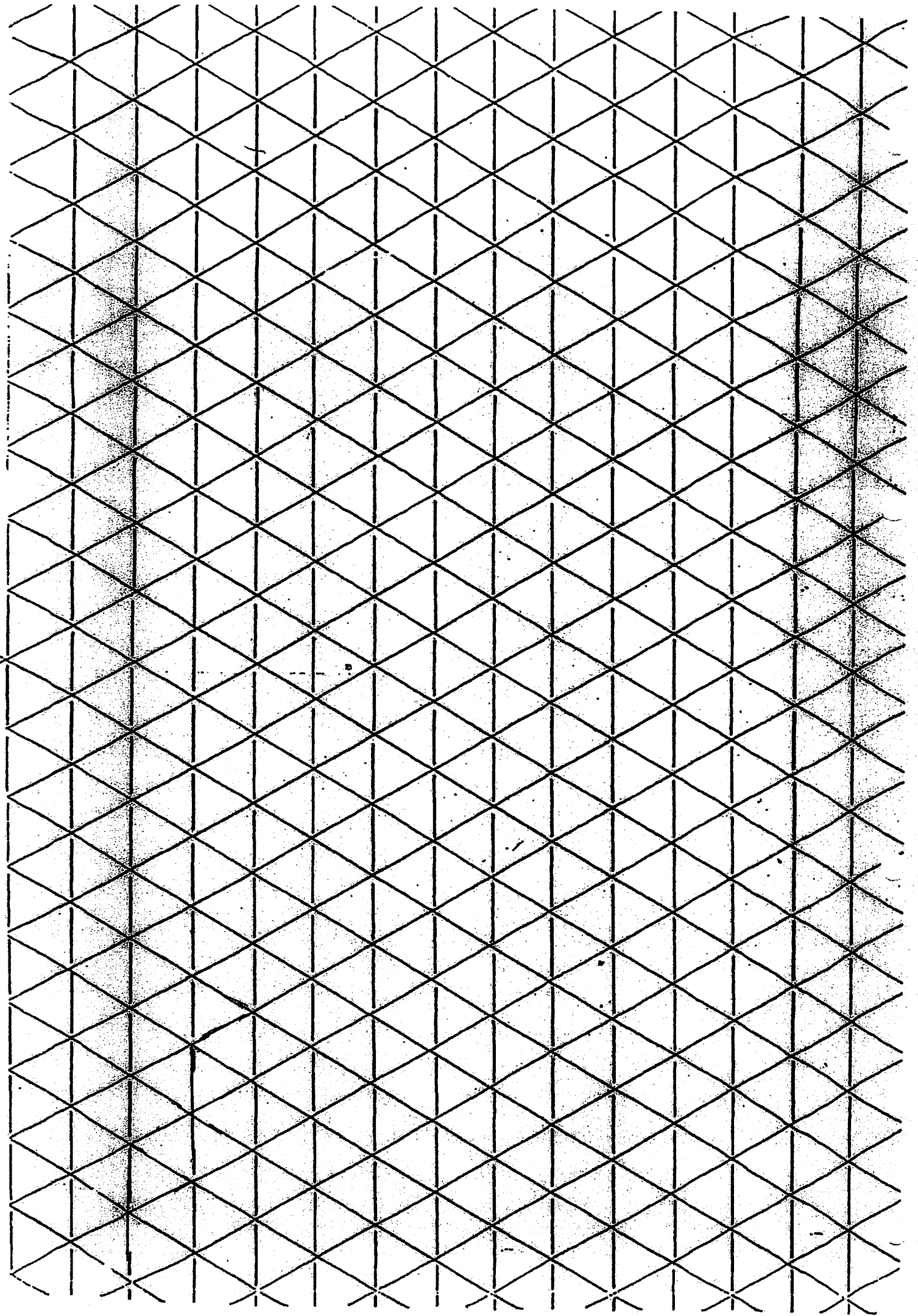
Copy the shapes below and re-create using isometric paper.





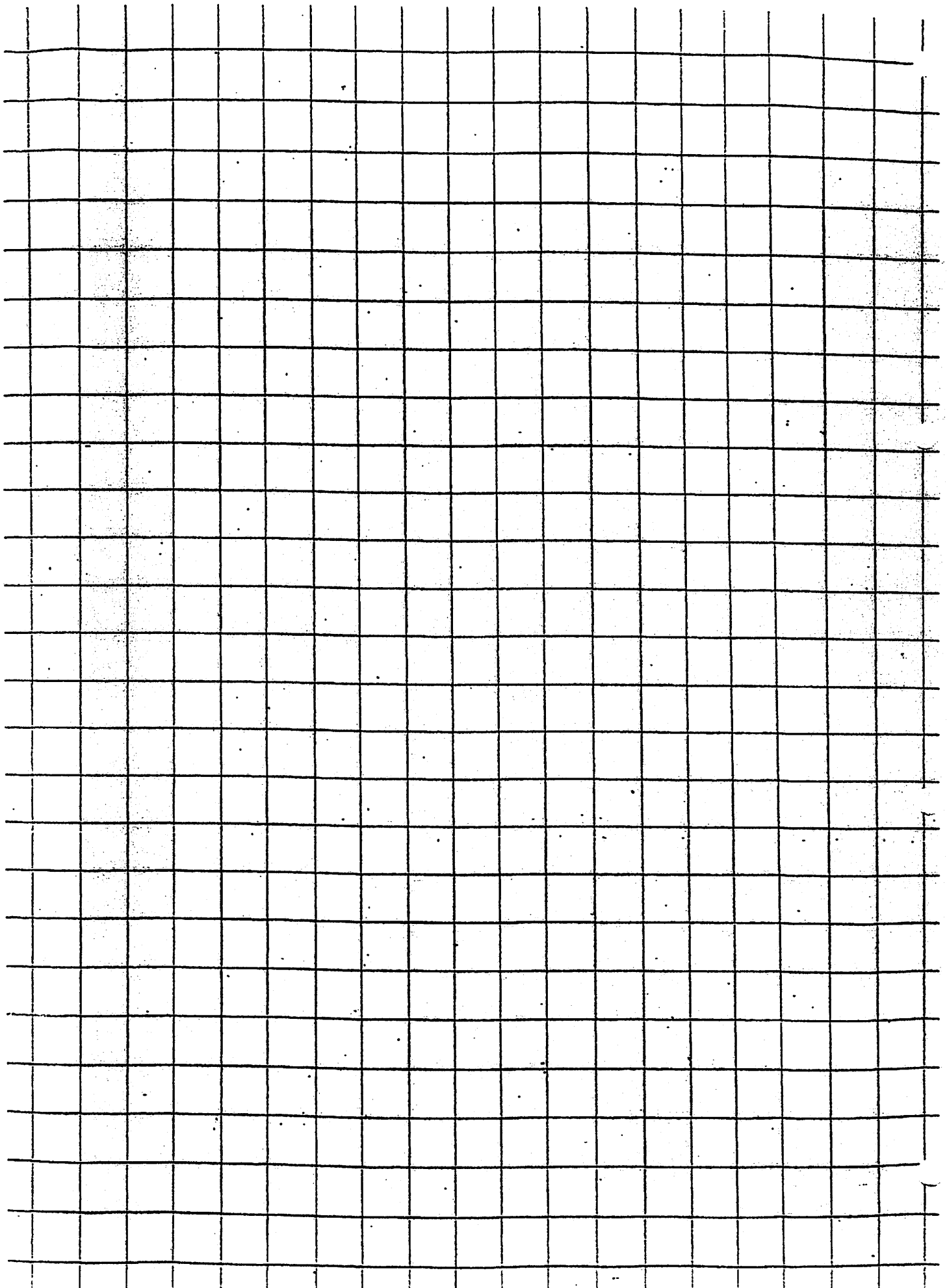
Isometric Work

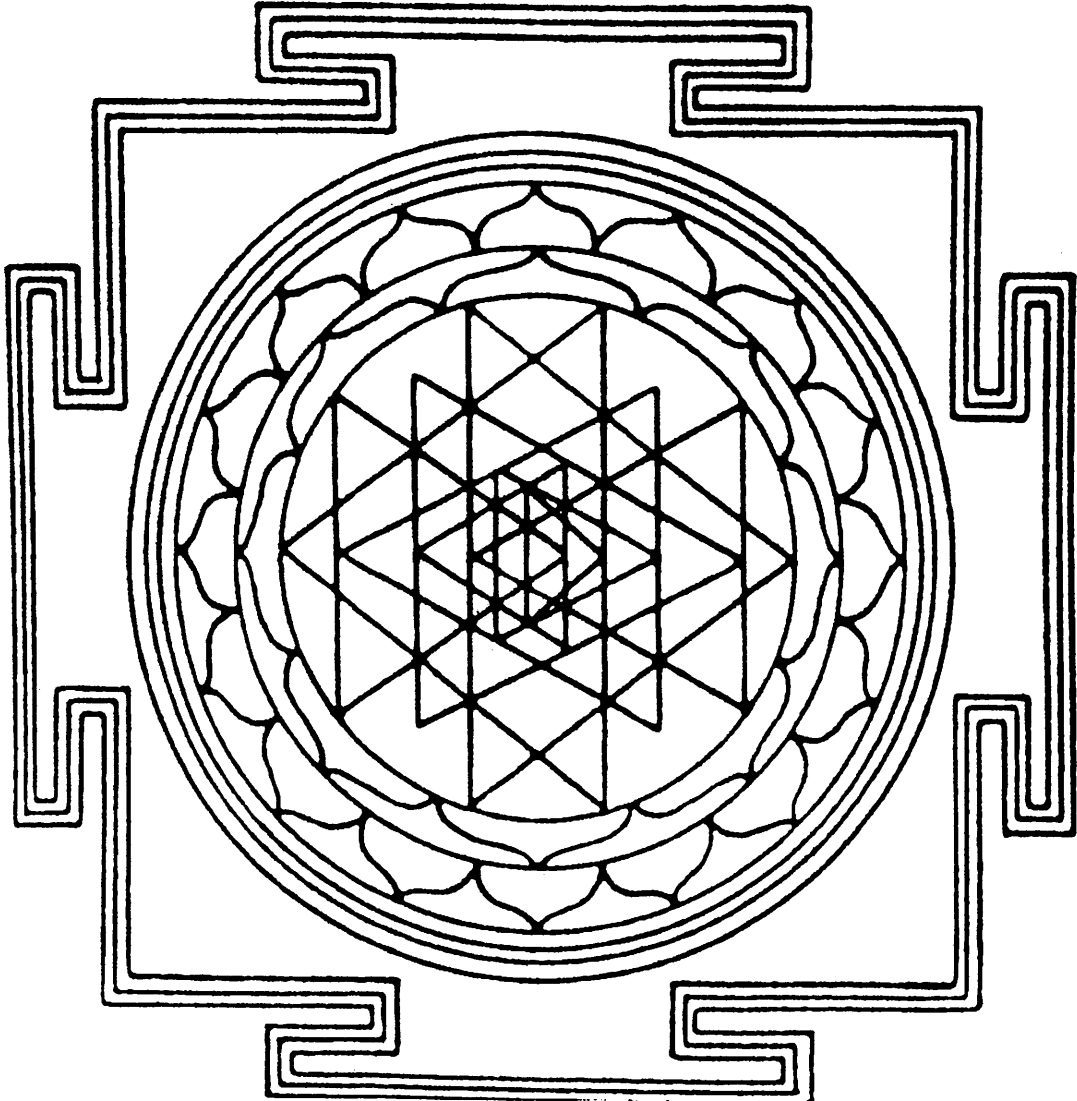
Isometric Work



Grid Work

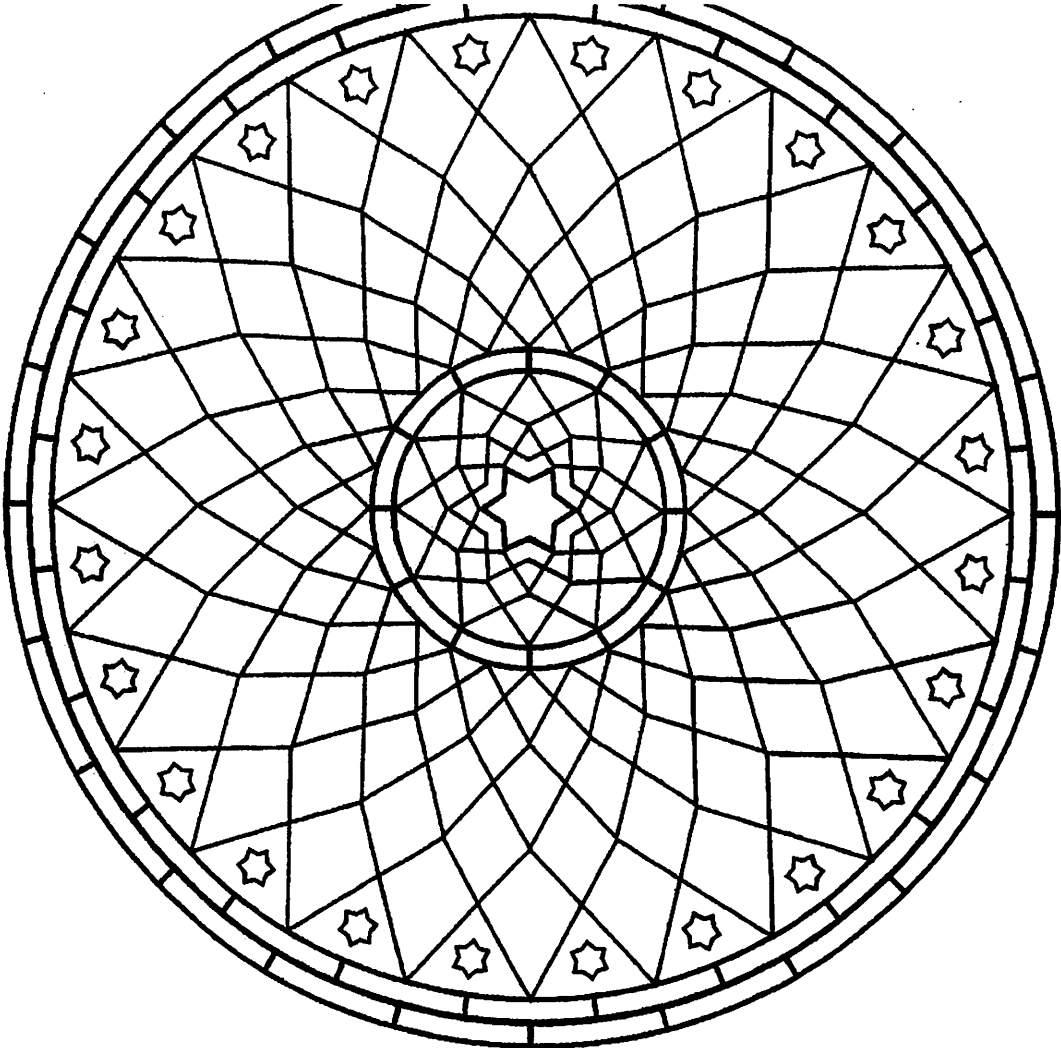
Mr Hirst - Grid Paper





Yantra 1

Only use primary colours



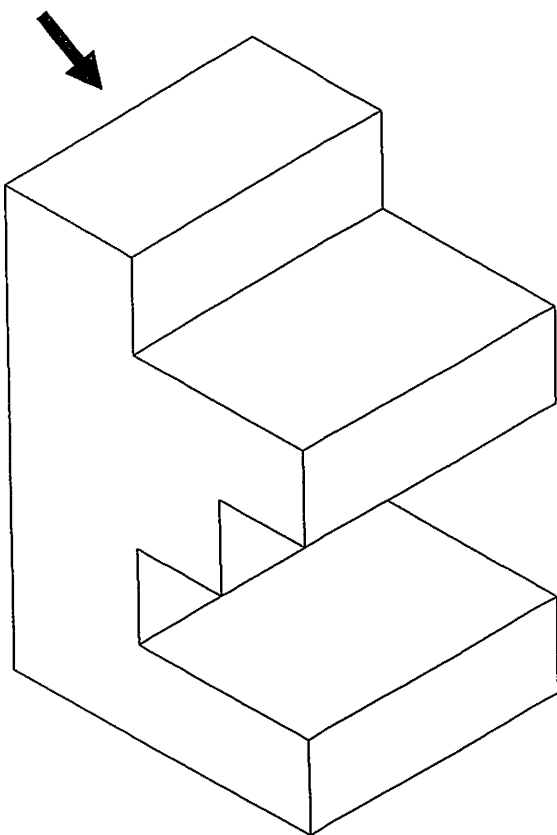
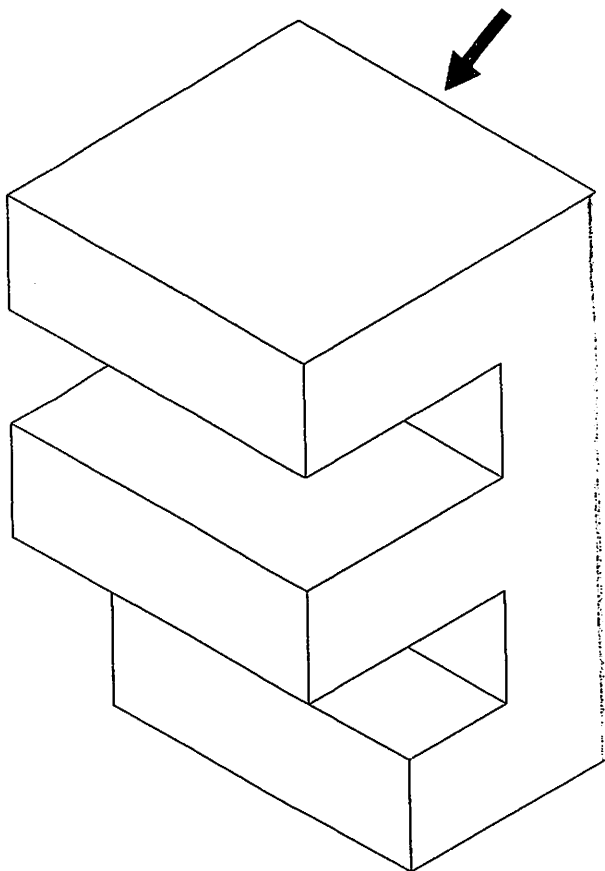
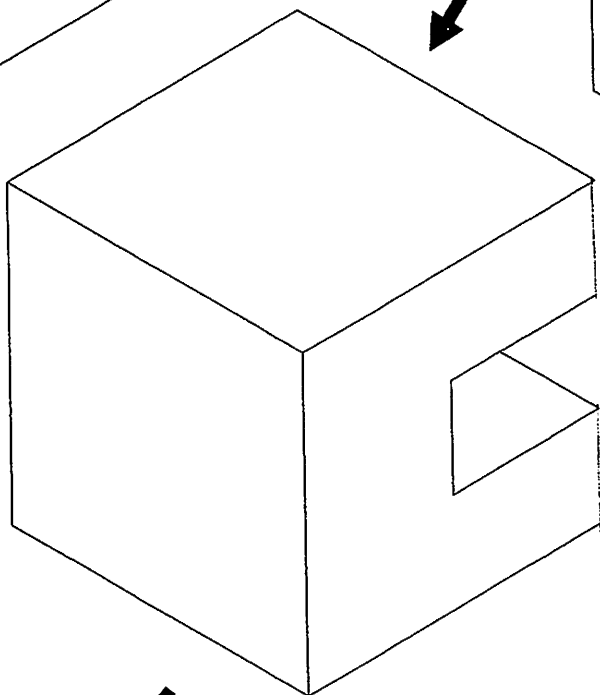
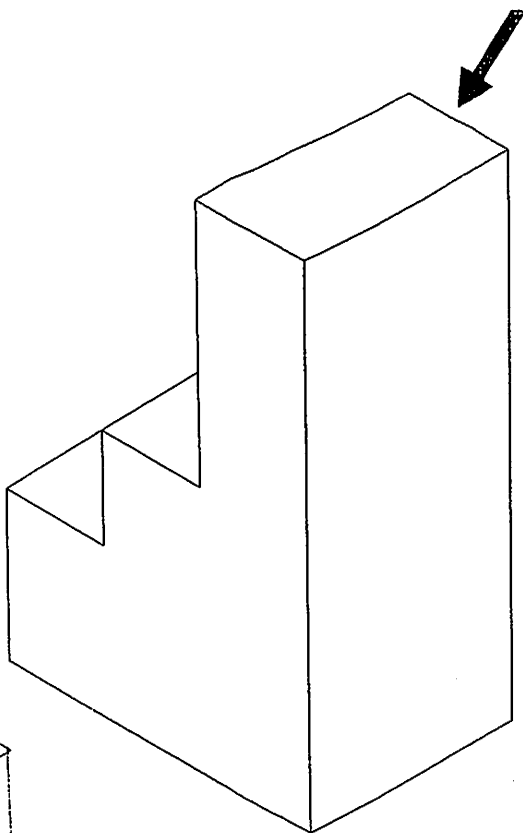
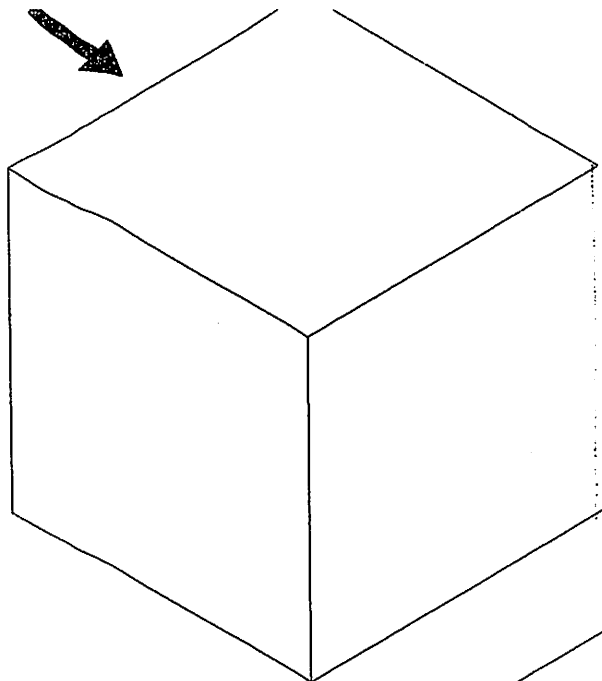
Yantra 2

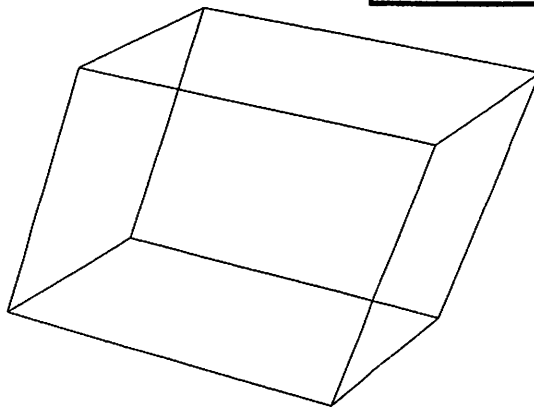
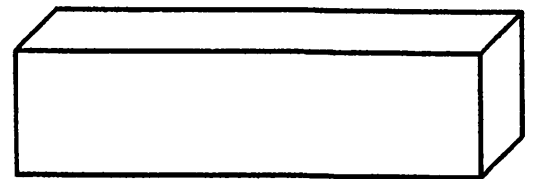
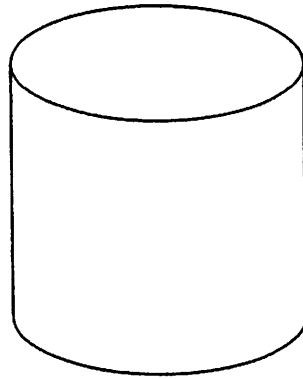
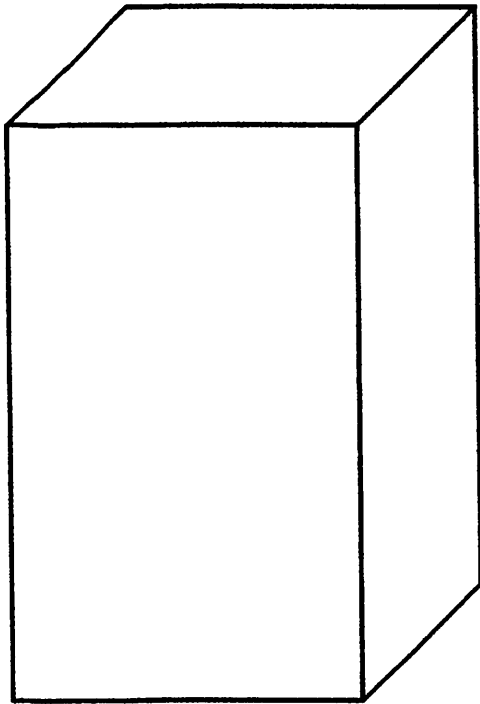
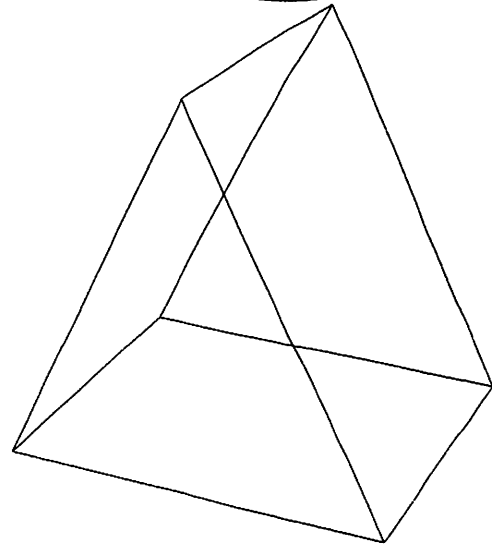
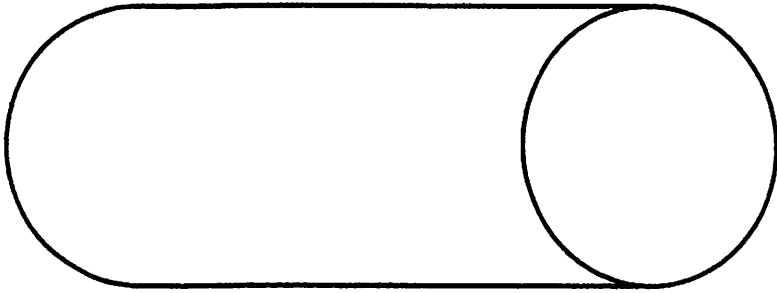
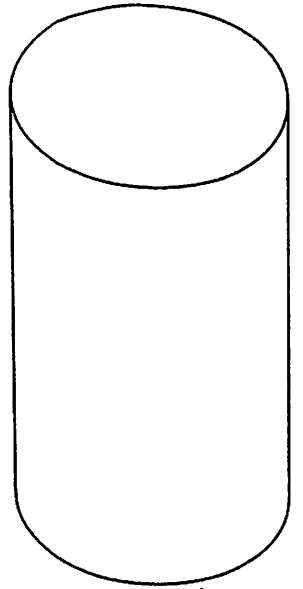
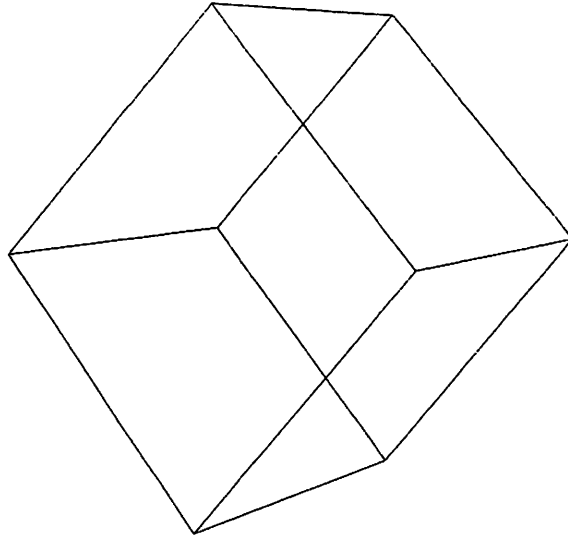
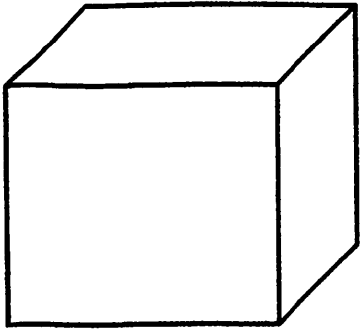
Only use secondary colours

Colour Quiz

1. Name the **primary** colours.....
2. Name the **secondary** colours.....
3. Which colours would you mix to produce green?.....
.....
4. Where do **complementary** colours appear on the colour wheel?
.....
5. Which colour compliments purple?.....
7. What is meant by the term **hue**?.....
.....
.....
8. How would you give a **hue** a darker **tone**?.....
9. What is meant by the term **colour fusion**?.....
10. What is meant by the term **colour separation**?.....
.....
.....
10. What does **CMYK** stand for?.....
.....
11. Which colour is associated with anger & danger?.....
12. Which colour is associated with joy & cheerfulness?.....
13. Which colour is associated with the environment?.....
14. Which colour is associated with royalty?.....

Mark:
14





Tools & Equipment

Draw lines to match the equipment to the correct description and picture.

Circle template

- Used with a pencil or technical pen.
- Used to draw accurate circles or arcs.
- Used for working drawings

Protractor

- Measures angles.
- Made from plastic.
- Either circular or semi-circular.

Pair of Compasses

- Usually 300mm in length
- Used for measuring

Scale ruler

- Used to accurately draw a specific ratio larger or smaller than the original.

Ruler

- Used to draw specific angles for orthographic and isometric drawings.
- Usually come in 45° or 30°/60° varieties.

T Square

- Used to draw accurate parallel lines at right angles to an edge.

Set square

- Used to draw accurate circles.
- Makes drawing very small circles easier.

French curves/ flexible curve

- Used to draw irregular arcs and ellipses.



Typography

1. What is **typography** the art of?..... ☐

2. What is the difference between a **typeface** and a **font**?..... ☐

.....
.....
.....
.....

3. What is meant by the term **sans serif**?..... ☐

.....
.....
.....
.....

4. What are capital letters also known as?..... ☐

.....

5. Label the letters below to identify the following parts: ☐

- Stem
- Serifs
- Bar
- Curve
- Continuous Curve

C A Q F

DESIGNING, DRAWING AND PRESENTATION SKILLS

Enlarged - iPod

- Redraw the iPod to create an enlarged version
- this should be twice (double) the size of the original
- Colour in your drawing - adding any extra details you want to include

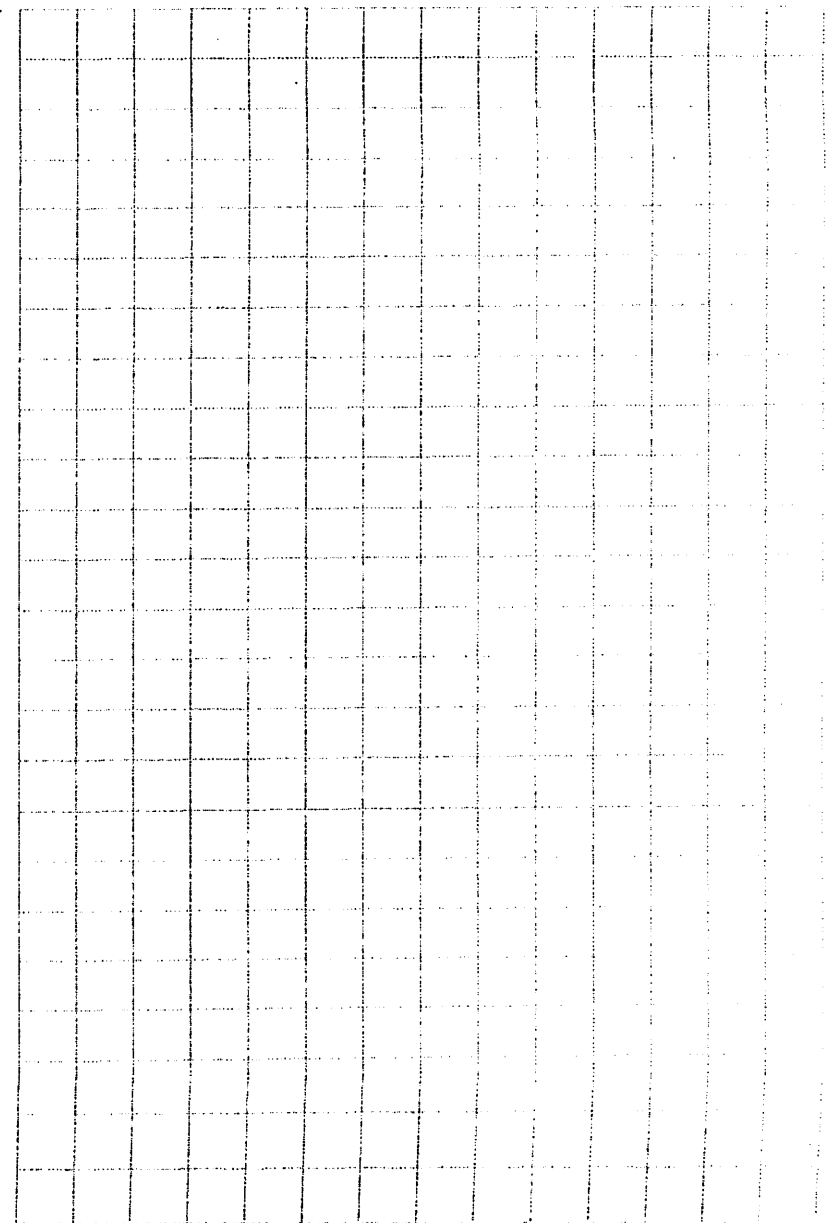
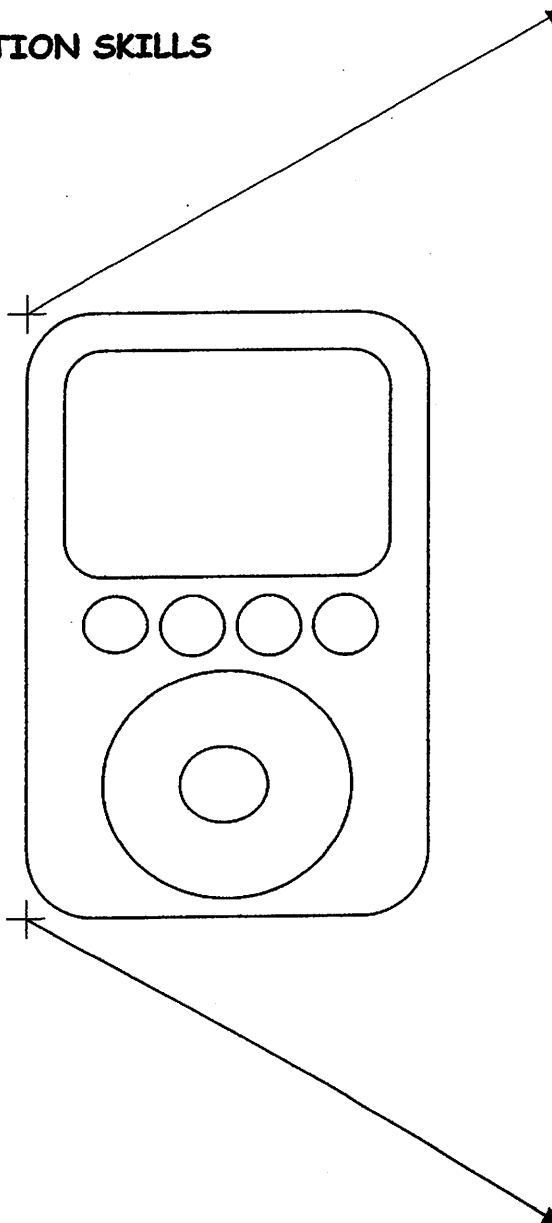
Scale – The enlarged drawing will be twice the size of the original this is a scale of - **2 : 1**

- How is a scale of half the size written
- Now write the scales for 4 times bigger
10 times bigger and 3 times smaller

__ : __ __ : __ __ : __

Extension Task

- Go over the lines again to make them stand out
- Trace your drawing onto plain paper
- Use colour, patterns and texture to present your final drawing



Keywords

Rendering	Applying colour and shade to a drawing to make it look realistic and 3D.
Tone	The result of adding black or white to a hue.
Colour Fusion	Dots of colour blend together to create the appearance of another colour.
Hue	A pure colour without tint or shade.
Logo	A symbol used to convey a meaning about a product of company.
Isometric	3D drawing projection using 30°/60° Angles.
Trademark	A word, phrase or symbol identifying the goods of a company and usually protected by law.
Serif	Strokes finishing off the ends of the stems of letters.
Primary Colours	Red, yellow and blue. Colours that cannot be made by mixing other colours together.
Crating	Drawing a 3D box to help construct a 3D drawing.
Colour Separation	Layers of separate colours, overlaid in printing. Usually cyan, magenta, yellow and black (key).
Justified Text	Text that sits flush with both right and left hand margins.
Corporate Identity	A company's visual expression, which can be reflected in all of the company's products.
Tracking	Adjusting the spacing between all letters.
Kerning	Adjusting the spacing between pairs of letters.
Sans Serif	Letters without extra strokes on the ends.

Good Points

Evaluation

Cubee Craft Photograph

Improvements

Assessment 1 - Research and Investigation

Level 3	Level 4	Level 5	Level 6	Level 7
Must collect and use information to support ideas	Considers the suitability of the information with regards to the project	Can use the information when designing their Cubee craft	Understands how similar products look and function	Be able to understand and explain why the number of products produced has a bearing on the type of manufacturing system used

Assessment 2 - Designing

Level 3	Level 4	Level 5	Level 6	Level 7
Can generate labelled sketches or ideas independently	Can generate labelled sketches, annotated based on research findings	Can use a variety of designing techniques and media	Shows how expert advice has influenced design thinking	Uses feedback from potential users to improve the function and appearance of the design

Assessment 3 - Making

Level 3	Level 4	Level 5	Level 6	Level 7
With some prompts I can choose the correct equipment and tools to make a cubee craft	I can choose the correct equipment and tools for the cubee craft independently	Consistently choose the correct equipment and tools to make a cubee craft independently to a good standard	Checks, measures and ensures accuracy and quality as the product develops e.g. Head, Body and Legs	Produces a detailed cutting list and parts list

Teacher comment

Pupil Evaluation

Strengths

★

★

★

Areas for further improvement

★

★

★