



DRAWINGS BY ME ART CLASSES

Mathematics KS2 Art Guide

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Mathematics KS2

The following activities, provide creative opportunities to consolidate students's knowledge and understanding of Mathematics. The range of art and drawing projects are based around NC objectives for Mathematics so that the pupils continue learning a core subject whilst developing their art and design skills.

Year 3

YOU WILL NEED

- A4 art paper provided by Drawings by Me
- Drawing pencil
- Coloured pencils, waterproof marker pens, chalks and paint
- Shapes
- Rulers
- Mirrors

OBJECTIVE

- Students will learn to draw, compare and sort common 2D and 3D shapes reinforcing and consolidating the language used to classifying and describe shapes e.g. faces, sides/edges, vertices, angles.
- Students identify and sketch lines of symmetry and reflection of simple shapes.
- Students will develop their use of lines and shapes to create pattern in artwork.
- Students will investigate the work of geometric shape artist Stephen Conroy.



Activity 1

Shape Central

Students will create a personal picture illustrating their understanding of 2D shapes. Focusing on lines, shape and pattern, they will create a bold, bright and attractive abstract artwork.

Instructions

1. Provide a range of 2D shapes of different sizes. Ask the pupils to classify and describe the shapes using accurate mathematical language.
2. Explain that they are going to produce an abstract artwork using the shapes. Show illustrations of work by Stephen Conroy.
3. Model drawing around the shapes carefully on A4, landscape paper and encourage thinking carefully about pattern and overlapping to create additional shapes.
4. Students draw their own pictures.
5. Students colour each section of the picture using bright and bold colours and explore adding patterns to some of the larger areas and shapes.
6. Once complete, use a marker pen to outline the shapes and add more detail to the picture.



Activity 2

Symmetrical Skylines

Students will create a personal picture of a UAE skyline reflecting it in a horizontal line of symmetry. Focusing on lines, shape and pattern, they will create a bold, bright and attractive abstract artwork.

Instructions

1. Draw a horizontal line across the middle of the A4, landscape paper.
2. Model drawing a skyline of buildings in the UAE above the horizontal line.
3. Students independently draw outlines of skylines.
4. Explain that the skyline will be reflected in the line of symmetry and provide mirrors for the pupils to see the effect.
5. Demonstrate using tracing paper to draw an accurate reflection.
6. Students complete reflection drawing.
7. Show illustrations of work by Stephen Conroy and discuss how geometric shapes can be used to create abstract artwork.
8. Students colour each section of the picture using bright and bold colours and explore adding patterns to some of the larger areas and shapes.
9. Once complete, use a marker pen to outline the shapes and add more detail to the picture.



Year 4

YOU WILL NEED

- A4 art paper provided by Drawings by Me
- Drawing pencil
- Coloured pencils, marker pens, chalks and paint
- Shapes
- Rulers
- Mirrors
- Images of positive and negative symmetry pictures and patterns
- Squares of coloured paper 12cm x 12 cm

OBJECTIVE

- Students will learn to complete a simple symmetric figure with respect to a specific line of symmetry.
- Students have opportunities to identify line of symmetry in 2D shapes presented in different orientations.
- Students will investigate the concepts of positive and negative symmetry and space.
- Students gain a greater understanding of the impact of colour, proportion and composition in art work.



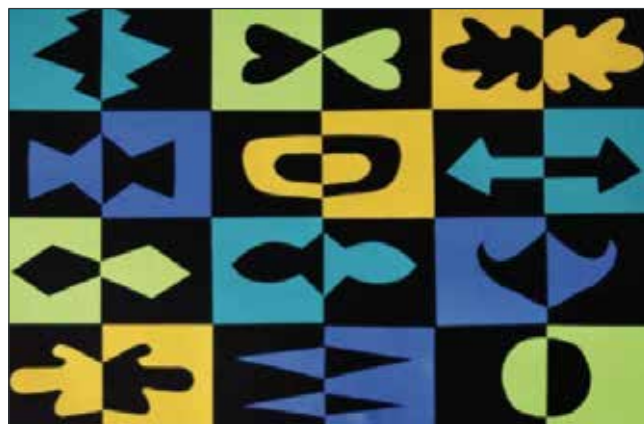
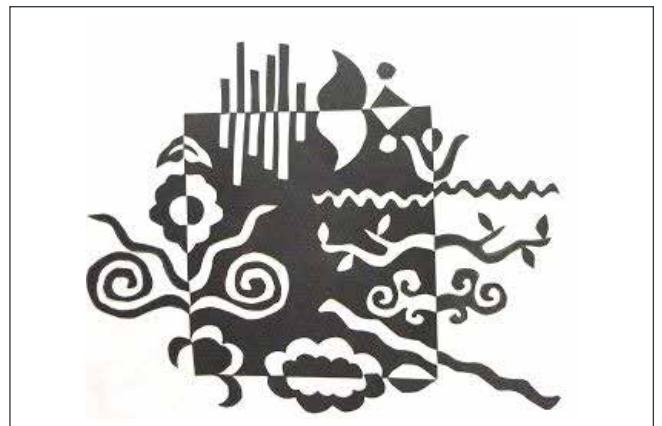
Activity 1

Positive and Negative Symmetry

Students will continue to develop their knowledge of symmetry by completing personalised picture or pattern using positive and negative symmetry. Within the project they will also investigate the impact of colour and space within a composition.

Instructions

1. Class discussion on the types of transportation available to the public in Dubai. Which have the students travelled on? Which do they enjoy?
2. Explain a montage – a picture that contains a collection of smaller pictures to illustrate a range of different images.
3. Model an example of a montage including a 'selfie' picture.
4. Students complete their own montage pictures of transport and include self-portrait/family-portrait.
5. Colour the pictures neatly using pencils or marker pen. Outline the key features and detail so that it stands out.



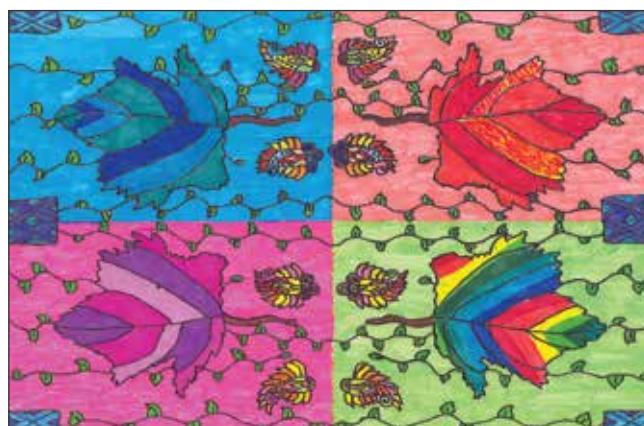
Activity 2

Symmetry Challenge

Students will practice identifying objects with 2 lines of symmetry; vertical, horizontal or diagonal. To reinforce and consolidate their understanding they will independently create an attractive abstract design that they will reflect in 2 lines of symmetry.

Instructions

1. Model measuring the paper to draw the vertical and horizontal lines of symmetry.
2. Using regular shapes, demonstrate how they can be reflected in both lines of symmetry. Repeat this with an irregular object and ask the pupils to predict the directions.
3. Explain that the pupils are going to create their own patterns and can use regular or irregular shapes but that the focus is on accurate symmetry.
4. Students draw their pictures and designs independently.
5. Colour the designs using bright and bold patterns and designs maintaining the symmetry.
6. Outline the detail with thin marker pen so that the detail stands out.



Year 5

YOU WILL NEED

- A4 art paper provided by Drawings by Me
- Drawing pencil
- Coloured pencils, marker pens, chalks and paint
- Shapes
- Rulers

OBJECTIVE

- Students will learn to make patterns from rotating shapes.
- Students will understand and use degrees to measure the rotations.
- Students will reinforce their knowledge of classifying 2D shapes and explore using 2D lines to create 3D images and identify how an optical illusion works.
- Students will reinforce and consolidate their understanding of shading to create perspective and form in 2D drawings.



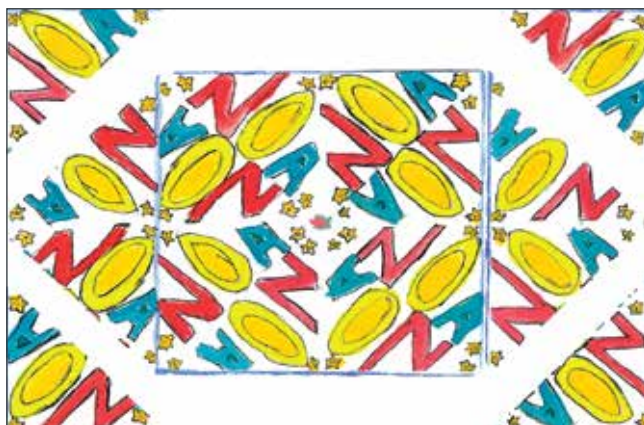
Activity 1

Kaleidoscope Rotations

Students will create a personalised picture in the form of a kaleidoscope by accurately measuring the paper and dividing into 4 triangular pieces. Writing their name on 1 section they will then rotate and repeat their name to develop the pattern. Colouring in bold and bright colours will add to the design to produce an individual and original artwork.

Instructions

1. Using a pencil and ruler, dissect the A4, landscape paper by drawing a line across each diagonal corner.
2. Model drawing a name in one section of the paper ensuring the letters are equally proportioned and touch the edges of the triangle.
3. Students may wish to cut a triangle to size and practice before attempting the final piece.
4. Using the practice piece as a guide, the pupils complete the first section and then rotate the practice sketch at a -90° angle for the second section.
5. This is repeated to complete the third and final sections.
6. Students colour the lettering using pencils, markers or paints to make the design bold and bright.
7. Finally, outline the lettering with a black marker to make the names 'Pop'!



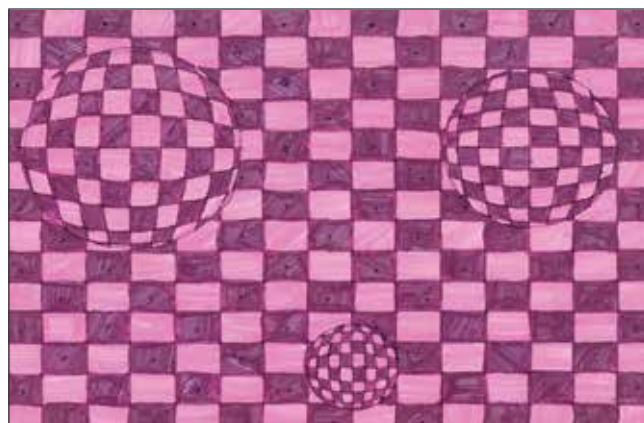
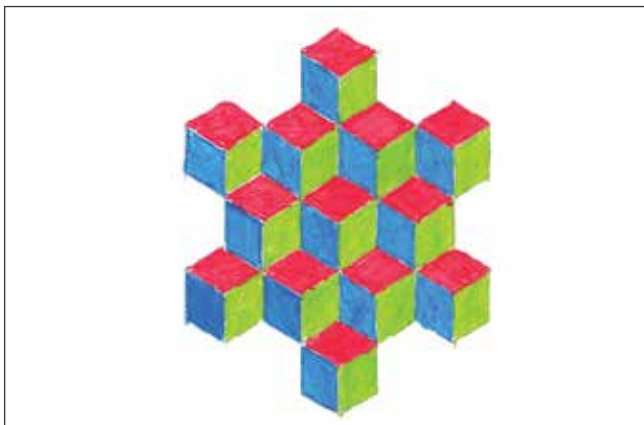
Activity 2

Optical Illusions

Provide a range of optical illusions for the pupils to look at. Discuss how the effects of 3D or movement have been created by carefully measuring and manipulating lines and curves. The pupils will then produce a personalised artwork illustrating an optical illusion that they have designed independently.

Instructions

1. Allow pupils time to observe visual optical illusions and identify how the 2D shapes are constructed and linked to create a 3D image.
2. Encourage pupils to research, identify and discuss images of their own.
3. Using 2D shapes, allow pupils to construct a flat model of their ideas for designs.
4. Students draw designs using shapes or measuring carefully with a ruler to create lines and grids.
5. Once drawing is complete, pupils neatly colour designs with pencils or marker pens.
6. Some circular designs may benefit from shading to add form.
7. Finally, outline the shapes with a black marker pen to make the illusions stand out.



Year 6

YOU WILL NEED

- A4 art paper provided by Drawings by Me
- Squared paper
- Drawing pencil
- Rulers
- Coloured pencils, marker pens, chalks and paint
- Range of circular objects and shapes.

OBJECTIVE

- Students will investigate parabolic curves to experience solving shape puzzles and explaining the methods and reasoning orally.
- Students will learn to name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
- Students will become familiar with the work of artist Sonia Delaunay who co-founded the orphism movement and whose work is known for her use of geometric shapes and strong colours.



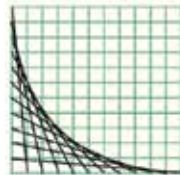
Activity 1

Parabolic Curves

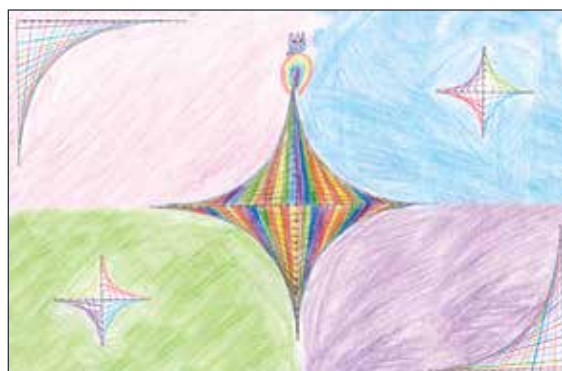
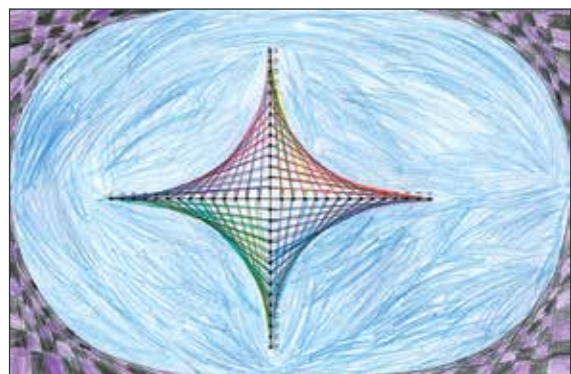
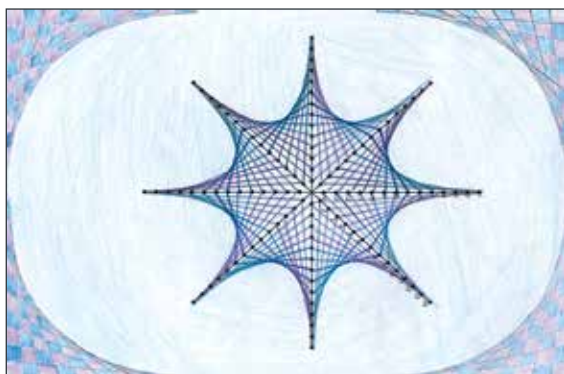
Posed with the problem, 'How can you make curves from straight lines?' Students will research and investigate parabolic curves. Once confident with the process they will design and produce a personalised illustration independently.

Instructions

1. Begin with a practice piece by drawing X and Y single quadrant axis and numbering them from 1 to 10.
2. Explain each number on the X axis must be linked to every number on the Y axis. Draw the lines with a ruler.



3. Having completed the simple illustration, students then design images of their own investigation using circles as well as lines, equally spacing out the markers.
4. Some students may then wish to plan their final design combining lines and circles.
5. On A4, landscape paper they produce their final design.
6. Colour the picture to highlight the lines.
7. Finally, go over the lines with a marker pen so that the curves stand out.



Activity 2

Sonia Delaunay Circles

Students will observe and discuss works of Sonia Delaunay using accurate mathematical language: radius, circumference, diameter, arc. Using a pre-set list of circles and lines the pupils will create an individual and personalised Sonia Delaunay style picture in bold, bright colours.

Instructions

1. Provide students with images of work by Sonia Delaunay and discuss content: colours, lines, circles and the radius, diameter and circumferences.
2. Give each students a list of the content required:
 - 3 circles diameter 10 cm
 - 5 circles diameter 6cm
 - 3 circles radius 1cm
 - 2 circles radius 2 cm
 - 3 circles circumference 25 cm
 - 1 straight diagonal line that reaches from edge to edge
 - 2 free choice diagonal lines.
3. Explain that the circles can overlap and be inside each other and the lines can dissect the circles.
4. Following the instructions independently, each pupil will create a personal picture on the A4, landscape paper.
5. Colour the pictures in bold, bright colours making each section different.
6. Finally, go over the lines with a black marker pen to make the circles 'Pop'!





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