SOUND SYMMETRY FOR KS1!

Get reflective on all things symmetrical and develop learning in both maths and music! A KS1 Music and Maths Activity Plan with curriculum links by Jennie Henley and Caroline Hilton

Maths
- To explore symmetry in two- and three-dimensional shapes
- To understand that there are different symmetries
- To identify and describe line symmetry and plane symmetry
- To investigate symmetry in natural and man-made environments
- To recognise and name common shapes, including 2-D shapes, eg. rectangles (including squares), circles and triangles and 3-D shapes, eg. cuboids (including cubes), pyramids and spheres
- To recognise and create repeating patterns with objects and with shapes

Activities
1. Finding symmetry in Dr Knickerbocker
   Introduce Dr Knickerbocker, ek, dho, teen! Warm up the body with some stretches and shaking of the arms and legs before moving on to a siren activity for a vocal warm-up: siren down first, and then back up. Play Dr Knickerbocker to the children. Explain that you are going to learn the melody first and ask the children to discuss what they notice about it. After some discussion tell them that you noticed that part of the melody is symmetrical. Ask children if they know what that might mean. Teach the melody and see if pupils can spot when the melody is symmetrical and when it is not symmetrical. Can they represent the melody with physical actions to help them see and feel the shape?

2. Symmetrical or not?
   Use the same body and voice warm-ups as before, but this time ask children if they can invent a physical warm-up that makes the body symmetrical and/or a vocal warm-up using symmetry in pitch (it might help to work in pairs or groups). They can then lead the

Learning Outcomes
- To warm up the voice healthily and invent a healthy warm-up
- To analyse the pitch and melody of a song and understand that these can be symmetrical
- To consider how symmetry is used to structure a song or piece of music
- To improvise simple melodies and rhythms using the voice
- To compose a simple song using symmetry to develop a melody, structure and rhythmic accompaniment

What you'll need
- Song Bank songs:
  - Dr Knickerbocker, ek, dho, teen!
  - 1, 121
  - Twinkle, twinkle, little star
- Resources:
  - Mirrors
  - Two-dimensional shapes
  - Three-dimensional objects

Curriculum Links
History
Many coats of arms include symmetry, pattern and repetition. See how many heraldic designs children can find that include these features and then create your own unique coats of arms with at least two examples of symmetry.

MFL
Look at flags from around the world – can children spot which ones have repeated patterns and/or lines of symmetry? Explore the lines of symmetry using mirrors. What would happen if you cut up the flags and re-arranged them?
others in their warm-up – can they identify and describe the symmetries in each other’s creations?

Remind children of the melody for Dr Knickerbocker and then teach the lyrics. Ask the children if the lyrics are symmetrical in any way. What would make them symmetrical – how do we know if something is symmetrical or not? Then move on to explore 2-D shapes. You might use paper shapes and fold them in half, or you could use mirrors. When they have explored the shapes, discuss what makes something symmetrical.

3. Different kinds of symmetry

Invite some pupils to lead the others in the warm-up they invented last time. Introduce a new one: 1, 121. You may like to start with going up to three only and gradually building on this, depending on the ability of the group. Discuss whether the warm-up is symmetrical and why (remind the children of their explorations of 2-D shapes to help). The warm-up is symmetrical in both the pitch and the pattern of the numbers.

See if the children can find any other reflections (symmetry) in a song. Give examples of songs with a symmetrical (ABA) structure, such as Twinkle, Twinkle, little star. Now explore 3-D objects: how do we know if an object is symmetrical? Provide some everyday items like cereal boxes or plastic cups and ask the group to find the planes of symmetry. You could investigate other types of reflection and devise symmetrical dances in pairs or experiment with symmetrical and non-symmetrical movements.

4. Pattern quest

Start with the children’s own warm-ups, then sing the lyrics – they could start with Dr Knickerbocker’s melody, adapt part of a different song (e.g., the first three notes of Three blind mice or use 1, 121) as a guide. They could even compose a rhythmic pattern for percussion instruments as an accompaniment. Make audio recordings to save your special symmetrical songs! Celebrate your learning journey by performing Dr Knickerbocker and the children’s compositions in assembly.

Words by Jennie Henley and Caroline Hilton

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