

Maths Ceilidh - Maths Week Scotland With Science Ceilidh

Lesson Notes

What level is it aimed at? Primary 5-7

What is its running time? Video runs for 20 minutes 47. With the activities, it can take up to 40 minutes depending on how long you want to extend the activities for.

What will pupils have learnt by the end of the session

- We will explore counting and understanding the beats underlying different music and time signatures
- We will explore symmetries through different ceilidh and dance moves
- We will encourage pupils to get creative and develop their own movements and dances which explore symmetries

Linking to the following Experiences and Outcomes:

Math 2-19A//3-19A

I can illustrate the lines of symmetry for a range of 2D shapes and apply my understanding to create and complete symmetrical pictures and patterns.

EXA 2-08A

I can explore and choose movements to create and present dance, developing my skills and techniques.

Preparation Before the Video:

Most of the lesson can be done with the learners at their desks being able to see the video. There will be clear points to pause the video to do activities with the class, with specific ideas and notes below.

For **Activity 3** and **Activity 5** which are more active, if you'd like learners to make short dances at their tables/sitting down, you can prepare a few ideas of moves that could be done safely primarily with the upper body on the spot (or make adjustments based on support needs).

If you have enough space, you are welcome to let the learners break out into a bigger space in the classroom to choose more ambitious dance moves using the whole body or moving away from the spot. Please be sure to risk assess accordingly and monitor move suggestions

If the music is too fast/too short or playing the video doesn't work in the break out space, you can also access more music from the Science Ceilidh band [here](#).

What next?

You can check out all our other free interdisciplinary resources [here](#), including further ones developed with [Maths Week Scotland](#) and a teaching resource exploring how any STEM theme can be explored with Expressive Arts here.

You can sign up for our Science Ceilidh mailing list [here](#) which will also keep you up to date with new activities and news from us.

There are also many more brilliant ideas and resources on the Maths Week Scotland website [here](#)!

This video was developed by Science Ceilidh with support from Maths Week Scotland 2023. Research and development was with Iris Henzel and Lewis Hou, filming and editing by Paul Maguire. If you have any feedback, please also do [get in touch](#).

Activity 1: Where does maths come into creativity?

How many answers can the class come up with? For example, how does maths come into arts like music, crafts and drama? Or behind the creative parts of science and technology?

Feel free to get a few suggestions from the class, or ask to discuss in small groups. If it's helpful to scaffold, you can first develop a list of activities which are creative, and then think about the maths that can link to this. If you have any you'd like to share with us, feel free to get in touch or post your best suggestions on "Where does maths come into creativity" on social media #MathsWeekScot and tag @scienceceilidh.

Activity 2 (Optional) Hearing the beats!

Play any other song you know already as a class and see if you can hear how many beats there might be in a bar - it's not always easy. You can send them to us to check!

Whilst most popular songs usually have a basis of 4 or 3 beats, time signature can get quite complicated. This is explored further in our [Fraction Musical resource](#) as this depends on whether the basis of each beat is a quarter note (a crochet) or for example an eighth note (a quaver). A jig - common in Scottish music - is a good example of a time signature where it is counted in 6 quaver beats, which gives a rhythm where every 2nd note is emphasised. 1 & 2, 3 & 4, 5 & 6. Have a try with some songs the class already might know, and if you would like to check, feel free to get in touch directly or post your question and guess on social media #MathsWeekScot and tag @scienceceilidh.

Activity 3: Creating a dance together

Pick a dance move you can do safely from where you are - get creative! Then pick which beat you're going to do your move on - any beat from 1 to 8 and get ready to put it all together to music

This is an opportunity to try getting creative with dance moves and thinking about playing with timings and counting musical skills. You may want learners to do this at their desks, in which case you can remind them to pick moves that are smaller and safe to do. If helpful to support the class with ideas, you could ask for a few suggestions for suitable dance moves first and then ask learners to pick from one of them.

As an extension idea, you can also try to make a mexican wave across the room, where learners on one side of the room are assigned the first beat, and the next row are assigned the second beat and so forth until the eighth beat as a gradient along the room, to make a “mexican wave” effect.

If the music is too short, feel free to use longer pieces from the whole Science Ceilidh band [here](#).

For learners with any additional support needs, please feel free to adapt the movements as necessary to ensure they can do it.

If you have appropriate permissions, please feel free to share the dances you come up with with us!

Activity 4: What other objects have reflective symmetry?

Can you think of more examples of objects in the room or that you can draw which have reflective symmetry?

This is a good point to reinforce what reflective symmetries are and ask for a few ideas from either in the room or just more generally. What objects don't have reflective symmetries? As an extension you could also ask learners to draw things with reflective symmetries and include the mirror plane in the middle.

We also explore more complex symmetries in our other resource, [Dancing Reel Symmetries](#).

As above, feel free to share your creations with us!

Activity 5: Making a symmetrical dance!

Work in pairs to create a dance together. You'll each need to come up with 2 moves.

For this dance each learner will be paired (Dancer A and Dancer B) and come up with two dance moves which last 8 beats.

They will then take turns leading when the other learner will copy, playing with the reflective symmetry. It should look like the learners are looking into a mirror!

Dancer A will go first for 8 beats, Dancer B will copy simultaneously - or as close to simultaneously as possible!

Dancer B will then go next for the next 8 beats, with Dancer A copying simultaneously.

This then repeats again with the second move.

You may want to give learners time to practice these moves first without the music. If the music is too quick, or you'd like to do this longer, you can either ask the learners to do their move for 16 beats instead, or pick slower music as well.

If learners are doing this at the seats, do monitor this to make sure their moves are suitable on the spot.

If you can break-out into a bigger space, make sure each of the learner pairs is standing opposite their partners with plenty space. You can even line each of the pairs up so they are next to each other which will resemble a set in a ceilidh dance such as the virginia reel ("Long-wise set" when you're standing opposite your partners, with other couples next to you. Often split into sets of four couples)

You can see examples of dances [here](#) (including ones explore science concepts!).

If you have appropriate permissions, feel free to share the dances you come up with with us!