

My Music

*Has pop music been getting faster over the years?
Do musicians make slower music as they get older?
Which tempo is best for dancing?*

Discover the numbers behind the beats . . .

Overview

Listening to music is frequently cited by young people as one of their main pastimes, and the music industry is often of interest to them as a potential career choice. Many young people also have strong opinions about different types of music, with favourite genres and artists. *My Music* utilises this keen interest in music to provide the opportunity for mathematical investigations, by using students' own favourite music as raw data. *My Music* is a highly flexible project, in which the mathematical content and practical activities may be moulded to suit students of almost any age or ability.

Mathematical content

The case study is in two parts. Part 1 has two main objectives: (a) to illustrate or utilise a variety of statistical concepts, terms and procedures, embedded within a practical context; and (b) to introduce students to the process of planning and carrying out an open-ended investigation. Part 2 focuses on rates of change and measurement. *My Music* addresses these ideas in terms of the characteristics of individual pieces or genres of music. Investigations focus on tempo, as a measurable variable. Activities include the collection of numerical data, performing basic statistical calculations and interpreting the results, forming and testing hypotheses, making inferences about a population, and identifying potential sources of error in data collection and calculations.

Organisation and pedagogy

My Music includes both group work (preferably pairs or threes) and teacher-led whole-class activity. In both cases there is a mixture of practical activity and discussion. The suggested time allowance is 4 lessons for Part 1 and 2 lessons for Part 2. *My Music* would work well as a cross-curricular project with the involvement of the music department, although it does not require any specific musical skills or knowledge.

Resources

Equipment

The teacher needs some music tracks and the means to play them to the class. For investigational work, students should provide their own choice of music tracks. Students need a means of listening to music in small groups, and for Part 2 of the project, computers are required.

Teaching pack

Including:

Overview of activities and mathematical content
KS3 National Curriculum links for Mathematics, Music and ICT
Lesson plans
Supplementary teaching notes
Music and ICT support
Student sheets

Plus:

Set of 'BPM starter tracks'
Back-up data set of BPM information
Audacity software (distributed under the *GNU General Public License*)