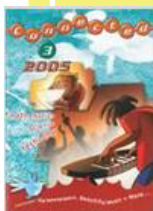


## Take This

### A dance, musical instrument or metronome

Read:  
*The Right Beat*  
Connected 3, 2005, p.24



Years 5-6



## GEOMETRY

### Transformation, position and orientation

Have students research transformations in mathematics. Agree that these include reflection (flip), rotation (turn), translation (slide).

Challenge student pairs to create a transformational:

- dance/action sequence that physically demonstrates the principles of each of these transformations. (eg, mirror actions facing each other, making a full turn rotational symmetry order 4, side steps sliding but body shape otherwise remaining unchanged)
- a poster to show and explain the mathematics transformations in their dance,
- a diagram of their dance, showing transformations and positions and directions.

## GEOMETRY

Have students design and make an advertisement (including at least 2 transformations) for a school production or School Idol competition.

## MEASUREMENT

**Length** in cm and mm, **time** in min., and sec.,  
**mass** in g

Introduce a metronome to the students. If one is not available, explain the principle.



Make available small weights, string, scissors, rulers, kitchen scales and a clock. Explain that the investigation students will carry out requires precision measurement using a scale, and accurate recording on a table. Suggest possible formats for systematic recording of predictions and measurements, once the task is explained.

Have student pairs make a pendulum, and systematically predict, investigate and record the answers to questions such as: What happens if:

- You make the string longer/shorter?
- You make the weights heavier/ lighter?
- Can you make your pendulum accurately measure 1 minute?

Discuss results. Use these to predict further pendulum 'behaviours'. Have students prepare a brief presentation of measurement findings to school/class.

## STATISTICAL INVESTIGATIONS AND LITERACY

Recognise the musicians and dancers in the school. Agree to investigate and celebrate the musical expertise within the school.

Have students plan and carry out an investigation to answer a question such as: What kinds of musicians and dancers do we have in our school? Have them design a survey, or use data squares, to gather multivariate data using categories such as age, gender, musical instrument played, dance type, number of years playing/dancing. Students should then sort data into categories and display this in a variety of ways, interpreting the results in context. Eg. five 10 year old girls have been learning ballet for more than three years, 4 more year 8 year old boys play the ukulele than 8 year old girls.

Have students critique each other's displays, recognising the appropriateness of displays and the care taken in analysing and presenting results. Have them make suggestions for improvements as appropriate. Present findings to the class/school.

## NUMBER AND ALGEBRA

As part of ongoing numeracy learning, explore the mathematics of the music in a school production or assembly item. **Read *The Right Beat***. Introduce musical terms for notes and the mathematical relationships between them. (1 semibreve = 2 minims or 4 crotchets or 8 quavers)

Have students create their own 4/4 bars of music manuscripts for chants, assigning mathematical fractions to the notes and checking that the notes in each bar add up to one.

Have students prepare charts or diagrams that show and explain to others, the mathematics that is happening in their music/chants.

Have students demonstrate on a fraction number line how the fractions within a bar make 1, and how the fractions in four bars, for example, make a 4 on the number line.

Pose fractions problems such as: There are 6 bars of music in 4/4 time. What combination of notes might make up the music?