

Max's Musical Maths: The Rhythm Architect

Learning objective: To understand and compose rhythmic patterns using different note durations (minim, crotchet, quaver, and semibreve) within a 4/4 time signature.

Max the monkey believes music is just maths you can hear! Each bar must add up to a total of 4 beats. Use the word bank to create your own rhythmic sequences. A semibreve is 4 beats, a minim is 2 beats, a crotchet is 1 beat, and a pair of quavers is 1 beat. Fill in the missing note values to ensure every bar equals exactly 4 beats.

Word bank: Semibreve (4 beats) · Minim (2 beats) · Crotchet (1 beat) · Quaver pair (1 beat)

1. Bar 1: 1 Crotchet + 1 Crotchet + 1 Minim = ? beats. Is this a complete bar? Justify your answer. (2 marks)

2. Bar 2: 1 Semibreve. If you wanted to replace this with crotchets, how many would you need? Explain your mathematical reasoning. (2 marks)

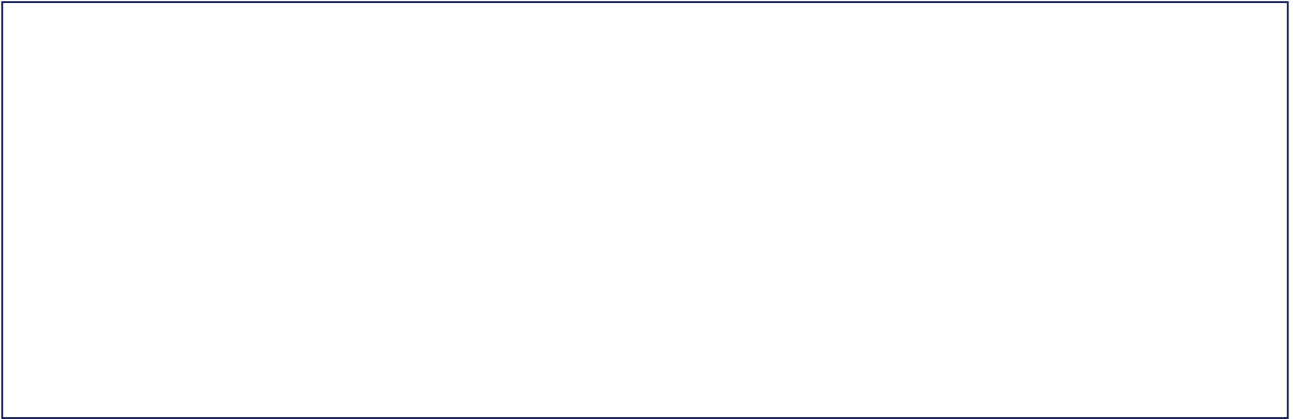
3. Bar 3: 1 Minim + ? = 4 beats. Which note(s) could fill the gap to complete the bar? (2 marks)

4. Compare and contrast: Why is a minim considered 'longer' than a crotchet in terms of rhythm duration? (2 marks)

5. What might happen if a composer accidentally put 5 beats into a 4/4 time signature bar? Explain the effect on the rhythm. (2 marks)

6. Create your own 4-beat bar using a combination of at least three different note types from the word bank. Write your sequence below. (2 marks)

Draw: Draw a 'Rhythm Tree' showing how a Semibreve at the top splits into two Minims, then four Crotchets, then eight quavers at the bottom.



Extension challenge: Compose a rhythm for a 4-bar song. If each crotchet costs £1 to 'record' in your imaginary studio, calculate the total cost in pounds and pence for your 16-beat composition.