Radiohead in the classroom

by David Ashworth

INTRODUCTION

Delicacy – calm, gentle sonorities, lush textures. Highly contrasting passages with loud, violent, harsh sounds… underpinned with a feeling of restlessness and unease generated by clashing and ambiguity in harmonic and rhythmic elements…

This is the music of Radiohead.

And it is this highly distinctive collection of musical features that make the study of this music a treasure trove for music teachers. In this resource, we take a closer look at some of the musical devices used by Radiohead and consider ways in which we can use them in teaching and learning in the classroom.

Many of the activities here look at an innovative use of rhythm as a key element in effective composition – an element that is often ignored when students focus far more on melodic and harmonic elements. We consider ways in which Radiohead extend the use of harmony beyond the usual confines of rock music, drawing on a range of jazz and classical influences. The importance of technology and electronica are also covered with some realistic, practical music making activities. We give consideration to the diverse musical influences that contribute to their highly original and distinctive output. By listening closely to some of the key works, followed up by relevant practical activity, students should find they are now able to broaden their perspectives compositionally in creating more interesting and more varied music.

Why Radiohead?

Teachers will find much of interest in this resource for use across all key stages in a secondary school. However, this Radiohead-themed resource is particularly relevant for KS4 classes preparing for:

- AQA GCSE AoS 1-5: with particular emphasis on AoS 1 Rhythm and Metre, and AoS 2 Harmony and tonality.
- OCR GCSE AoS5 Conventions of Pop: focusing on how Radiohead use and develop musical elements and compositional devices from a wide range of styles and genres.

Begin at the beginning

To hear Radiohead in a nutshell we can begin at the beginning. Their first major hit single, ‘Creep’, has many of the hallmarks of their emerging musical style. In the opening few seconds we hear the distinctive use of non-diatomic chords and a serene guitar arpeggio pattern with some old-school technology in the use of a tremolo effect. This supports a gentle and beautiful vocal melody. The contrast and violence of the distorted guitar stabs, played across the beat, aggressively challenge the harmony. The textures build with dense layers of instrumental and vocal sounds before reprising the stripped-back sound of the opening passages.
1. RHYTHM

Unusual time signatures are one way of making a pop song sound more distinctive, helping it to stand out from the crowd. Well-known classic examples include Dave Brubeck’s ‘Take Five’, Queen’s ‘Innuendo’ and Jethro Tull’s ‘Living in the Past’.

In the Radiohead song ‘Fifteen Step’, the 5/4 metre is divided into a 3-plus-2 pattern by the bassline. This is supported by a more involved drum machine pattern. Here is an extract from the bass part:

![Extract from the bass part of Radiohead's 'Fifteen Step'.](image)

**ACTIVITY: GETTING USED TO UNCONVENTIONAL TIME SIGNATURES**

Students often struggle with less conventional time signatures. One way to provide a degree of support is to set up a 5/4 pattern on a drum machine or keyboard that has this facility. Or it might be more convenient to use a computer sequencer for this purpose. The pattern can be recorded and saved as an mp3 file so that students can play it on a mobile device if necessary.

Students can use this steady, dependable and utterly reliable 5/4 pattern as a backing against which they can devise basslines, chord sequences and melodies. Simple basslines such as the one above will also help to ground the pattern, providing a solid foundation on which to build more rhythmically adventurous ideas.

Some rhythmic warm-ups (such as clapping along to the bassline above) will help students to become more comfortable with working with 5/4 time.

Of course, interesting rhythms can be created in more common time signatures too. Once again, we focus on the bass, as this is where the rhythmic interest can often be found in the music of Radiohead. Here is the lopsided and angular bass pattern from the song ‘All I Need’ (played an octave lower, with variations). It is interesting to note that a glockenspiel doubles this rhythmic pattern later in the song:

![Lopsided and angular bass pattern from Radiohead's 'All I Need'.](image)

**ACTIVITY: GETTING ADVENTUROUS WITH RHYTHM**

In many pop songs, and in much student’s work, basslines tend to be rhythmically very simple. Encourage students to be much more adventurous with their choices of rhythm, even if they are sticking closely to the notes from the chords – as in the example above. One way to do this is to provide some rhythmic templates for students – some interesting one- or two-bar rhythm patterns that they can use as a framework for developing a bassline. These templates can be notated and/or recorded. Include a metronome part so that the students can practise clapping the patterns against the prevailing beat.

In this next example, we turn our attention from the bass to the rhythm guitar. The track ‘House of Cards’ uses a syncopated rhythm guitar part with a gentle Latin American feel, although used in a distinctly non-Latin context. Here’s the rhythm it uses:

![Syncopated rhythm guitar part.](image)
Pop musicians have always been drawn to using these attractive and catchy rhythm patterns as a way of adding interest to more conventional songs. There are many examples of this in classic pop songs from the 1960s, including many Beatles songs. Indeed, these can even be considered as precursors or early examples of ‘fusion music’.

Use the above rhythm with simple chord patterns that do not change frequently. Begin by having students clap the pattern against a steady 4/4 beat. Work with a variety of tempos.

Consult reference books for standard Latin rhythms such as samba, merengue, salsa and bossa nova, and have students incorporate these patterns in keyboard or guitar vamps.

**ACTIVITY: PARING THINGS DOWN**

In the classic Radiohead track ‘Airbag’, we find another example of a rhythmically distinctive bass part. This unsettled bassline is reminiscent of dub style music, where basslines and other parts would be pared down by dropping notes out of the patterns – usually achieved by rapidly moving the volume faders. In ‘Airbag’, it is especially noticeable towards the end of the track, where there is also a fragmented drum sample. Here is an extract from the bassline in question:

Ask students to look over a work in progress and experiment with removing some notes to create more distinctive (and possibly less cluttered) parts. This can be done on one or more tracks in an arrangement. Any songs that have been compiled using a MIDI sequencer lend themselves to this approach, as notes can easily be removed or edited in the piano roll editor.

**ACTIVITY: CAMANELLA**

The track ‘Let Down’ contains multi-layered arpeggiated guitars and electric piano parts. Radiohead guitarist Jonny Greenwood plays his guitar part in a different time signature to the other instruments – a five-note quaver figure in a 4/4 metre. Although the part is very repetitive, the constant shifting on and off various beats of the bar keeps it sounding fresh and more varied than it actually is.

Work out how many times before this 20-note pattern comes around to starting again – on the second beat of the bar:

By playing this sequence of notes across the strings, the guitarist is able to allow the notes to ring on and overlap and so build up a richer texture. The technical term for this is campanella (literally, little bells). Ask students to devise similar five-note patterns. These overlapping patterns can be played on guitar, keyboard or glockenspiel. They should then try playing them against one or more instruments playing in 4/4 time.
ACTIVITY: SHAPES IN MUSIC

‘Pyramid Song’ has a slow, dreamy, syncopated piano accompaniment, which gives the song a sense of timelessness. Its rhythm pattern has four chords lasting three beats and a central chord lasting four beats:

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\( \frac{4}{4} \)
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It is worth noting that there is a possible mathematical link here. The pyramid shape has four sides of three angles and one side with four angles. Jonny Greenwood has also made use of the properties of natural shapes in some of his solo works. Perhaps there is an opportunity for some cross-curricular work here – using structures in geometry as a starting point for developing musical structures?

Putting rhythm before pitch

In a hierarchy of musical importance, students often tend to put a lot of work into the pitches of the notes they might choose for a melody, riff or harmony, while giving only scant attention to the rhythm they use with their notes. In much rock and pop music, however, the priorities are often reversed. Indeed, one of the hallmarks of Radiohead’s style is a strong groove that’s achieved by combining rhythmically interesting riffs and patterns to produce results that are often rich and complex. They can achieve this even when using just a few different pitches. For example, here are a bass and a horn riff respectively from the track ‘The National Anthem’:

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\[ \text{Bass Riff} \]
\[ \text{Horn Riff} \]
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The bass riff uses just four notes, and the horn riff only two.

ACTIVITY: CREATING A RIFF

Working to a given key, time signature and tempo, set a group of students the task of coming up with a compelling riff using just two or three notes. These can be played live or recorded into a computer sequencer.

Once the class has listened back to the results, they should explore combining their riffs with one or two others devised by fellow students, to produce interlocking patterns that sound cohesive. This can be done live or, if computers have been used, by file sharing.

In praise of handclaps

The use of the handclap in pop music has a long and illustrious history. Notable examples include the Beatles’s ‘I Wanna Hold your Hand’, T Rex’s ‘Bang a Gong (Get It On)’ and Stealers Wheel’s ‘Stuck in the Middle with You’. Live acoustic handclaps (using real human hands!) are a good way to get some audience participation going, while electronically generated ones can add an extra layer of sound, where often the rhythm patterns are more adventurous.
A fine example of this can be found in the 5-against-4 handclaps in the Radiohead track ‘Lotus Flower’. This simple two-note pattern moves sequentially on and off the beat, eventually returning to the first beat after five bars. Here’s the notation in two forms: standard notation and sequencer piano roll editor:

Students should try clapping this along with the track before devising similar patterns of their own to use in original music making.

Note: handclaps are not just for happy pop music. Listen to the sinister and unsettling use of handclaps in Radiohead’s ‘We Suck Young Blood’.

2. HARMONIES AND CHORD PROGRESSIONS

As we noted in the introduction, from the very beginning with Radiohead’s first well-known song ‘Creep’, the importance of harmony is there. One of the most distinctive musical features of the song occurs right at the beginning. The song is in G major, but the second chord, the non-diatonic B major, is the one that draws the attention and gives the song its distinctive flavour.

Radiohead’s interesting use of harmony is probably down to two things – having a self-confessed ‘non-pianist’ (lead singer Thom Yorke), who would doodle away on the piano in search of musically interesting if unconventional ideas, and having an adventurous and musically educated guitarist (Jonny Greenwood), who would constantly look for inspiration from across a broad and eclectic musical landscape.

In this section, we consider some noteworthy examples.

**House of Cards**

The track ‘House of Cards’ has only a few chords, but there is musical interest in the use of chord extensions and the rhythm pattern, which has a distinctly Latin feel. The chords used in this extract are:


The chords are played in this rhythm:

**ACTIVITY: CHORD PROGRESSIONS**

Students could write their own chord progressions to this rhythm or a similar one. It is important to have a steady beat going against this – a simple 4/4 drum pattern would be appropriate. Consider using warm-ups, by having the class clap this pattern. You might want to extend this activity by bringing in other Latin rhythms.

Students should then choose some simple diatonic chords but with 9th or 11th extensions, and work on some chord progressions. If these prove challenging to play, suggest splitting the chord between two players: a bassist or keyboard player can play roots to this rhythm, while a guitarist or keyboard player can play the upper notes. For a chord of C9, for example, the bass player would play a C while the other student plays the notes E, G and D. They should experiment with different registers for these notes to determine what sounds effective.
‘Exit Music (For a Film)’ is a highly effective arrangement that builds up very gradually. For the first two minutes we hear only solo voice and an acoustic guitar. Then a mellotron (on a choir setting) adds sustained treble and bass harmonies before an interlude in which we hear strange electronic sounds like sampled birdsong. Finally, drums and a fuzzy bassline thicken the texture further, before it drops back to just voice and guitar for the ending. Might this make a useful model or template for a student’s arrangement of an original song?

Let’s now turn our attention to the tune – a deceptively simple vocal melody, yet one that contains features of interest worth noting.

First, the use of **neighbour-note motifs**. Neighbour notes are non-chord notes (usually a 2nd, 4th or 7th) that descend stepwise onto a chord note. In so doing, they move from a state of mild dissonance to one of resolution. In this context, of a slow-moving melody in a minor key, they create an effect of sighing or world-weariness. The neighbour notes are shown in red in this example from the beginning of the song:

![Example with neighbour notes](image)

This next example is the same extract of music, but now we put the focus on different elements within the melodic line. Notice how the first four bars all begin with the note F sharp. However, each bar is harmonised using a different chord, all of which contain this note F sharp. On the next line, the first note of each bar marks a stepwise descent:

![Example with stepwise descent](image)

**ACTIVITY: NEIGHBOUR NOTES**

Students can consciously use these ideas to create interesting melodic lines. They should begin by devising an interesting chord progression that uses mainly diatonic chords. Next, sketch out the bare bones of a melody that uses mainly notes from the chords. Finally, experiment with adding neighbour notes – retaining those that sound effective.

In a second activity, write a melody in which every bar begins on the same note. For example, working in the key of C major, have every bar begin on the note G. Now find as many chords as you can that contain this note. Here are the most obvious ones:

- **Diatonic major/minor chords**: C major, G major, E minor
- **7th and 9th chords**: Am7, Fadd 9
- **Non-diatonic possibilities**: E flat major, A flat maj7, E dim, G minor, C minor

**Chords changing very slowly**

In pop and rock music, chord changes usually happen relatively quickly, but surprisingly in the track ‘Treefingers’, chords are held for as long as 16 seconds. If we are holding chords for this long, they need to be interesting. Some of this interest is down to the timbre of the instruments playing the chords and any subtle tonal changes that take place over the duration of the sustained chord. Groups of bowed string instruments, voices or keyboard synth pad sounds are especially good for this purpose. Of course, the other important
element is the makeup of the actual chords. Jonny Greenwood shows his acknowledged Messiaen influence in his choice of slow-moving chords played on an organ/synth in this track:

![Chord Diagram]

**ACTIVITY: SLOW-MOVING CHORDS**

Students can listen to this example and then try playing it for themselves. Here is a version transposed up a semitone, which makes for much easier reading:

![Transposed Chord Diagram]

They should experiment with different instrument settings on electronic keyboards, as well as with different voicings of the notes, until they find something that sounds effective, even if it might not faithfully resemble the original. To facilitate this process, it might be a good idea to have two players sharing the notes over a single keyboard.

If we take all the notes from these chords and put them in scale order, we have an octatonic scale as follows:

C – D – E – F – F sharp – G – A – B – C

Notice there is a certain symmetry to the tones and semitones between notes of this scale:


This might lead on to some work for more advanced students looking at Messiaen’s ‘modes of limited transposition’. A follow-on activity might be to write an original melody, using the above scale, to fit with the given chord progression.

For further study of this particular topic, take a look at ‘Life in a Glass House’, which also uses an interesting, Messiaen-like chord progression:

Am(maj7) – Am – Cm7 – Gm – F#dim

**How to Disappear Completely**

In other songs, interesting texture and harmonies are created by having more conventional diatonic progressions and melodies accompanied by soft but highly dissonant drone-like sounds. As in so much music by Radiohead, they are more unsettling than aggressive. For example, in the song ‘How to Disappear Completely’, we hear a faint dissonant string sound playing the note B flat over a pentatonic bassline ostinato playing these notes:

F sharp – A – B – E – C sharp – A – B – E

... over this chord progression:

D – F#m – D – F#m – A – F#m – A – F#m

... which indicates the key of D major. In this context, the B flat played on strings is dissonant and unsettling.
ACTIVITY: ADDING DISSONANT NOTES
This can be an effective way to add something strange and subtle to a song or instrumental piece where it might be appropriate. However, there is more to this than just adding any old non-key note and hoping for the best. Careful choices will need to be made regarding pitches, register, dynamic level and timbre to find the right sound.

Burn the Witch
Radiohead’s track ‘Burn the Witch’ is ostensibly in the key of B major, but it avoids any obvious sense of key using two devices:
- Pandiatomicism: using mainly diatonic chords from the key (in this case B major) but not in a functional, hierarchical way.
- Vocal melody in a different key: A major.

This extract starts partway through the first verse:

So the first four bars in this extract seem to suggest a V–IV in the key of B major, but then the second line moves the progression to suggest V–IV in key of F sharp major. Meanwhile, the melody remains resolutely in the key of A major, suggesting ambiguity rather than uncertainty. Unsettling, but interesting!

ACTIVITY: PANDIATONICISM
Many great songs have been that which break the rules of functional harmony. When guitar students have learnt a handful of chords they will often experiment with compiling progressions with no conscious reference to keys or standard harmonic progressions. The results can vary from the delightful to the absurd. To help steer students towards writing music that has the pandiatomic features found in the example above, provide a similar set of chords and a suggested key for a melody. For example:
- Chords: A major, G major, E major, D major, E minor, B minor
- Melody: key of C major

Students don’t have to use all the chords, but should aim to include repetition to help unusual chord sequences sound more intentional. Give students the choice as to whether they start with the tune followed by the chords – or vice versa.

3. RADIOHEAD AND TECHNOLOGY
Another influence on Radiohead’s musical style has been drawn from the world of electronica and dance music. Thom Yorke has often expressed his admiration for the music of Aphex Twin, Autechre and DJ Shadow.

ACTIVITY: DJ SHADOW
Listen to some tracks from DJ Shadow’s album Endtroducing and engage the class in discussion on picking out key features of this music. Perhaps they can then go on to look at how Radiohead use these stylistic features in their music? Alternatively, this could be done as a homework activity, providing students have listening access to the tracks via YouTube, Spotify etc.
To get you started, here are some features from some of the songs on *Endtroducing* that are worth considering:

- **‘Mutual Slump’**: this combines two highly contrasting elements – an aggressive industrial drum machine pattern, with a warm, languid arpeggio piano line.
- **‘Midnight in a Perfect World’**: warm piano synth using a climbing chordal pattern. Heavy drum sound but with clarity, voices as instruments, long treble drones, acoustic piano.
- **‘Stem, Long Stem’**: quasi-classical guitar arpeggios, brooding strings, light percussion bells, dramatic dynamic contrasts, battery of drum machines.

Students should now begin work on a piece that uses some or all of these musical features. Working with audio and MIDI tracks in a computer sequencer is probably the best way to proceed with this.

Using a drum machine, patterns can be generated using the drum editor in a computer sequencer or appropriate iPad apps. Clarity and a feeling of space are important, so that the piece does not start to sound too cluttered or muddy when further instrumental tracks are added.

### 4. RADIOHEAD AND INSTRUMENTATION

With many rock bands, you often get the sense that the musicians are constantly vying for the spotlight, musically speaking. The singer wants more reverb, the guitarists insist on having longer solos, the drummer adds attention-seeking drum fills, and so on. With Radiohead, things seem different. Although their main musical arranger Jonny Greenwood is a fine guitarist, he has said in interviews that he is more concerned with finding the right sound for a track rather than seeking out opportunities to showcase his guitar playing. For example:

- In the song ‘All I Need’, he chooses and plays a gentle glockenspiel part to provide an effective contrast with the fatter bass and synth sounds. Watch a clip here.
- On the song ‘Reckoner’, some band members open by playing simple hand percussion (watch a clip here). Later on in the track, Greenwood uses a synth to emulate the sustained notes on the vocal part, but still keeps the shaker going with his left hand.
- On ‘How to Disappear Completely’, Greenwood plays some ‘old technology’ – an ondes Martenot, which has been described as a cross between an organ and a theremin. Check it out here.

### ACTIVITY: BECOMING A MULTI-INSTRUMENTALIST

It is notable that whenever students are given a composing or performing task, they tend to stick to playing just one instrument. So guitarists will always pick up a guitar, a flautist will reach for their flute, and so on. It can be a good idea to ask students to break out of these comfort zones and consider less familiar sounds to work with.

Encourage students, whether writing or performing, to choose more unusual combinations of instruments. As Radiohead show, time and again, playing simple interlocking parts, using less conventional instrumental groupings, can be effective and distinctive.

Classroom percussion is an obvious choice as the resources are usually readily available and can present fewer challenges in terms of playing technique. When used with an amplified band, ensure that hand percussion players have microphones – this is not always necessary with cowbells and woodblocks, but essential for quieter instruments such as shakers. A microphone can help reassure players of these parts that they are making just as important a contribution as their peers playing the more showy instruments.

Using music technology presents more of a challenge. Schools are unlikely to be able to justify expenditure on esoteric hardware such as an ondes Martenot or theremin, but there are now a range of much cheaper software equivalents that provide a rich array of interesting and useable sounds. Consider allowing students to use virtual instruments on mobile devices such as phones or tablets. For example, the theremin sound on the app *ThumbJam* is very convincing.
5. RADIOHEAD AND JAZZ

Radiohead acknowledge the importance of jazz as a major influence. Jazz musicians such as Charles Mingus and Miles Davis have been referenced, and they even included a section for the Humphrey Lyttelton Band on their song ‘Life in a Glasshouse’.

Thom Yorke has mentioned Miles Davis’s album Bitches Brew as being an important influence on their 1997 album OK Computer. Though Bitches Brew was revolutionary in many ways, perhaps its most important innovation was rhythmic. The rhythm section on this album is unusually large and is given a central role in the ensemble’s activities. Because the emphasis is on rhythm rather than harmony, the singer and soloists are given considerably more freedom musically. This is a notable feature on all Radiohead’s albums from OK Computer onwards.

ACTIVITY: JAZZ

Students should write and perform piece for a group of instrumental players with the following brief:

- Most musicians playing tuned/untuned percussion parts. The parts can be simple, but should be rhythmically interesting and work well together.
- Those providing chordal harmony, typically guitarists and keyboard players, should have parts in which the harmonies and chords are largely static.
- Melody players and singers should play or improvise melodies that are freer and more adventurous than when playing in more harmonically constrained structures.

APPENDIX

Radiohead songs used in this resource and albums they appear on:

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