KS5

AQA, Edexcel & OCR: Olivier Messiaen

by David Kettle

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WHY STUDY MESSIAEN?

Olivier Messiaen was quite simply one of the most influential composers of the 20th century. As a teacher, he taught many of the figures who became giants in the post-war avant-garde – among them Boulez, Stockhausen and Xenakis. And as a composer, he sits on a line from Debussy to Boulez and beyond, creating music of such sensuality and religious devotion that we're still coming to terms with it today.

Perhaps that's why his music inspires fervid devotion in some – and downright incredulity in others. In any case, encountering the works of Messiaen as part of a school course can have a transformative effect on students' understanding of music's power, can capture their imagination, and can provide entirely new ways of looking at music in terms of symbolism, colour, time and spirituality.

Messiaen is included in three of the current KS5 specifications (detailed below), and his music can provide countless starting points for composing activites, a few ideas for which are also included in this resource. We'll look at four key works from across Messiaen's career – *Le banquet céleste*, the *Quartet for the End of Time*, the *Turangalîla Symphony* and *Des canyons aux étoiles…* – and examine key elements of Messiaen's style that are apparent in each of them.

AQA

Messiaen is one of four named composers specified for study in AQA's **AoS7: Art music since 1910**. The board also details specific music elements relevant to Messiaen's music, which are covered throughout this resource:

- Melody: modes of limited transposition
- Harmony: chord extensions, eg added 6th
- Structure: cyclical structures
- Sonority (Timbre): organ stops
- Sonority (Timbre): unusual instruments, eg ondes Martenot
- Texture: layering
- Tempo, metre and rhythm: additive rhythms
- Tempo, metre and rhythm: palindromic rhythms

EDEXCEL

Messiaen is one of the composers mentioned in the wider listening examples for Edexcel's **AoS6: New Directions**, specifically movements 8 and 10 from his 1974 *Des canyons aux étoiles…*, which are covered in detail in the final section of this resource.

OCR

Messiaen's *Quartet for the End of Time* is one of the specific works listed as suggested repertoire for OCR's **AoS6: Innovations in Music 1900 to the present day** (covered in two previous *Music Teacher* resources, December 2016 and January 2017). We'll look in detail at Messiaen's *Quartet for the End of Time* in the second section of this resource.

BACKGROUND

Messiaen's life and times

Born in Avignon, France, in 1908, Messiaen entered the Paris Conservatoire at the age of 11, and went on to study there with Paul Dukas, Charles-Marie Widor and Marcel Dupré, among others. In 1936 he formed the

group La jeune France with fellow composers André Jolivet, Daniel-Lesur and Yves Baudrier, to turn away from the frivolity of Parisian music at the time. He was captured and imprisoned during World War Two, and upon his release he taught at the Conservatoire as professor of harmony from 1941, and professor of composition from 1966, until his retirement in 1978. He was married twice, first two violinist Claire Delbos in 1932, who lost her memory following an operation and spent the rest of her life in mental institutions, and secondly to his former pupil and pianist Yvonne Loriod, in 1961, who was a renowned interpreter of his music.

Messiaen's Catholic faith

Messiaen's profound Catholic beliefs shaped virtually all his music, either directly or indirectly. In music such as *La nativité du Seigneur*, an organ work from 1935, or the massive cantata *La Transfiguration de Notre Seigneur Jésus-Christ* of 1969, and many others, he explored theological subjects or brought religion into the concert hall. He saw the work of God in all of creation, from human love (which he celebrated in his *Turangalîla Symphony*, discussed below, among other works) to the songs of birds and the wonders of nature (also examined below).

Messiaen's musical style

There are a handful of clearly identifiable, and often quite unusual, elements that go into making up Messiaen's distinctive musical style, among them harmony based on colour, birdsong, a radical approach to rhythm and time, and an equally radical conception of musical form and texture. Interestingly, however, even Messiaen's stylistic development defies convention. Although his music undeniably changed over time, it was more a case of adding new elements to an already existing style: elements of harmony and rhythm from his earliest pieces, to take two examples, can still be seen in works he composed at the end of his long career. Which means that stylistic elements we identify in his earliest pieces continue to be relevant to his music even in his final works.

LE BANQUET CÉLESTE

Background

We're going to start at the very beginning, with Messiaen's first published work. *Le banquet céleste* ('The Heavenly Feast') is a short piece for solo organ from 1928, but probably begun around 1926, on a deeply spiritual theme: the Holy Eucharist or Communion, in which the church congregation re-enacts the ceremony of the Last Supper, eating the bread and drinking the wine as Christ himself instructed – which, according to Catholic belief, transform literally into the flesh and blood of Christ.

Messiaen wrote *Le banquet céleste* while still a student in the class of Paul Dukas at the Paris Conservatoire, but even at this very early stage, it shows elements of the unmistakable musical style he would continue to use for the rest of his career – it's as if his music has sprung, already fully formed, from his creative mind.

The piece revolves around two themes: a slow, chordal theme representing the love that God shows us in sacrificing his only Son for us; and a 'water-drop' theme (which begins a little way into the piece) representing the blood of Christ dripping from his body, shed to relieve us of our sins.

You can hear a recording of *Le banquet céleste*, complete with synchronised score, here.

Messiaen and the organ

Unusually for 20th-century composers, organ music was central to Messiaen's output throughout his long career

– partly reflecting his profound Catholic faith (and most of his organ music has an explicitly religious theme), and partly reflecting his interest in colour and sound. Messiaen comes from a long tradition of French organists: he was taught by the great French organist composer/performers Charles-Marie Widor and Marcel Dupré at the Paris Conservatoire, and was organist at the Église de la Sainte-Trinité in Paris from 1931 until his death in 1992.

Many students – even those who play piano or keyboards – may be unfamiliar with how a church organ is constructed and played. Here's a brief guide to put *Le banquet céleste* in context.

THE ORGAN: A CRASH COURSE

- An organ is essentially a series of ranks of pipes tuned to fixed pitches, set upon wind chests, a blower and bellows, with keyboards controlling when the wind enters the pipes – thus producing a note or notes.
- Unlike a pianist, an organ player controls when a note begins and also when it ends – there is no natural decay to the sound of an organ.
- The place where the organist sits to play is called the **console**, where he or she is surrounded by finger keyboards, a pedal keyboard, drawstops, pistons, an array of knobs and usually a mirror (or even a monitor) so that the organist can see what's happening behind them. In the case of electric-action organs, the console can be located quite far from the pipes themselves, and can even be moveable.
- The organ's keyboards are called **manuals**, and modern organs usually have more than one (often two to five), as well as a keyboard of pedals played by the feet, called the **pedalboard**.
- The organ's pipes are arranged in sets, called **ranks**, with one pipe for each note on the organ's keyboard in a particular tone colour.
- To bring a rank of pipes into play, the organist pulls a knob called a **stop** (or sometimes operates a hinged switch called a tablet).
- As well as having a name indicating the sound it produces, each stop also has a number indicating the pitch at which is sounds: 8′ is written pitch, 4′ an octave higher, and 2′ two octaves higher; whereas 16′ is an octave lower, and 32′ two octaves lower.
- Each manual controls a particular collection of ranks, called a **division** – which particular ranks go with which manual varies from organ to organ.
- The selection and combination of stops being used at any particular moment is called the **registration**, and can be programmed into the organ or pre-selected using pistons located either between the manuals or just above the pedalboard.
- The simplest organ pipes are called **flue pipes** and have no moving parts. They are generally classified into Principals (which sound simply like an organ, with no attempt to emulate another instrument), Flutes and Strings (which are intended to sound like those instruments).
- **Reed pipes** have a vibrating metal tongue (reed), whose sound is amplified by a long resonator. The shape and length of the resonator determine the tone. Resonators can be cylindrical, conical or even other shapes to create a particular nasal sound, intended to imitate reed woodwind and brass instruments.
- Any stop with '**céleste**' in its name serves a special function. The pipes it controls are tuned slightly sharper than other pipes of a similar pitch, to cause a special bright beating effect when they are played together.
- **Mixtures** and **mutations** are combinations of pipes tuned not to the note being played on the keyboard, but to notes in its harmonic series (often an octave and a 5th higher), to bring colour and brightness to the original note.
- Sometimes one or more divisions can be enclosed in a box with venetian blind-style shutters. The shutters are controlled by a balanced pedal usually called the **swell pedal**. On some modern organs there is also a **crescendo pedal** that progressively brings on more stops, thus freeing up the player's hands to get on with playing.

Aristide Cavaillé-Coll was arguably the most important organ builder in the 19th century, and responsible for many innovations and developments in French organs. He built organs that were bigger and grander than ever before, with more pipes, stops and combinations than had been imagined up until then. It was Cavaillé-Coll who built the instrument for Paris's Église de la Sainte-Trinité, where Messiaen was organist (as well as for Notre Dame and many other major Parisian churches). Messiaen made great use of the enormous richness and colour of Cavaillé-Coll's organs throughout his music for the instrument.

Le banquet céleste is far from the most extreme piece by Messiaen in terms of the complexity of its registration. But even here Messiaen is very specific about the sounds he requires. Here's the registration he calls for:

> R: voix céleste, gambe, bourdon 8
>
> Pos: flûte 4, nazard 2⅔, doublette 2, piccolo 1
>
> G: R G | Ped: tir. Pos. seule

What this means is the following:

- Recit (top manual): registration all at 8' (written) pitch, including a voix céleste stop to create its special bright beating effect.
- Positif (middle manual): all stops higher than written pitch. The nazard 2⅔ is a mutation stop, sounding not at written pitch, but an octave and a 5th higher.
- Grande Orgue (lowest manual): coupled (tirasse) to the Recit manual so that the player doesn't have to play on the highest manual for long periods.
- Pedals: coupled (tirasse) to the Positif manual, so that the pedals produce the same sound as the middle manual.

By his later works, Messiaen's organ registrations have grown enormously in their complexity. Just compare the relatively straightforward registration above with that required for 'Adoro te', the first movement of his *Livre du Saint Sacrement* of 1984:

> R: bourdon 16, flûte 8, bourdon 8, gambe, flûte 4, nazard 2⅔, octavin 2, tierce 1 3/5, cymbale 3 rangs, bombarde 16, trompette 8, clairon 4.
>
> P: quintaton 16, fonds 8, prestant 4, flûte 4.
>
> G: montre 16, bourdon 16, fonds 8, prestant 4, flûte 4.
>
> Ped: soubass 32, CB 16, soubass 16, fl.8, bourdon 8, violoncelle 8. PG, RG, RP
>
> tirasses G, P, R.

Despite the complexity of his demands, however, Messiaen's intentions are straightforward: to control the specific sounds that the organ produces in his music, and to exploit the full richness of sound capable from these immense French instruments.

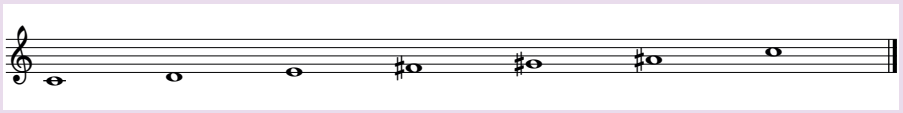
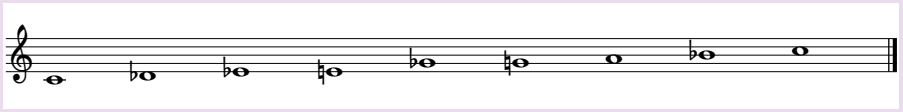
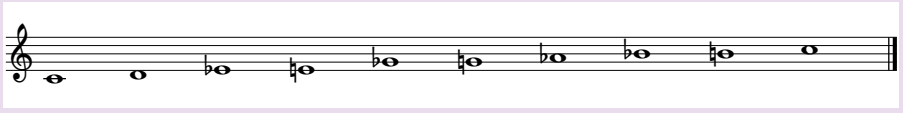
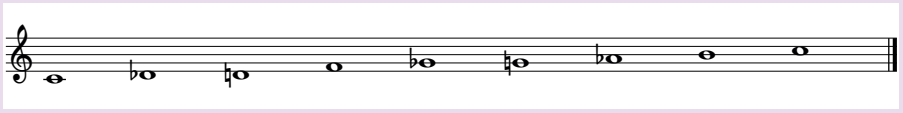
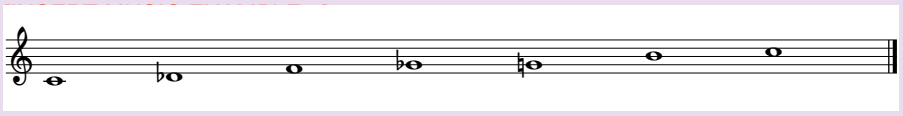
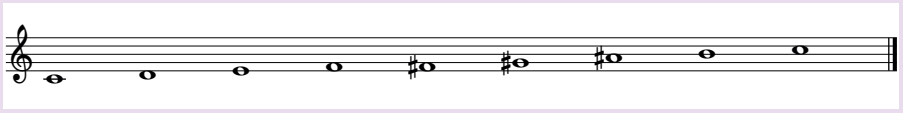
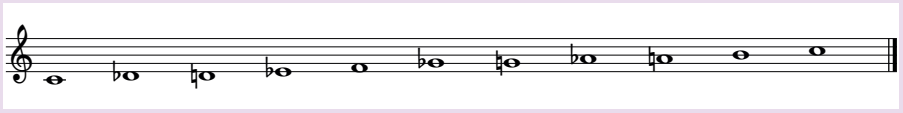
Messiaen's modes of limited transposition

From *Le banquet céleste* onwards, and throughout the rest of his career, the melody and harmony in Messiaen's music is pervaded by what he called the modes of limited transposition.

These are simply different ways that Messiaen compiled of dividing the octave into successions of semitones, tones and sometimes wider intervals. Messiaen described them as having 'limited transposition' because there are only a limited number of times the modes can be transposed before arriving back at the notes of versions already created. The diatonic major scale, for example, can be transposed 12 times before arriving back where you started; the chromatic scale, however, cannot be transposed at all (Messiaen would say only one transposition is possible).

This useful website allows students to create and play their own harmonies using Messiaen's modes of limited transposition.

Here's a table of Messiaen's seven modes of limited transposition, together with notes and the number of possible transpositions for each.

Mode 1	 • Possible transpositions: 2 • Also known as the **whole-tone scale** • Messiaen used mode 1 very rarely in his music. He felt that Debussy and other composers had already explored it so fully that there was little left to add.
Mode 2	 • Possible transpositions: 3 • Also known at the **octatonic scale** • Used extensively by other composers – including Stravinsky (in *The Firebird* and *The Rite of Spring*, among several other works), Rimsky-Korsakov, Liszt, Ravel and Scriabin. • Nevertheless, used extensively by Messiaen too – *Le banquet céleste* is mainly in mode 2.
Mode 3	 • Possible transpositions: 4
Mode 4	 • Possible transpositions: 6
Mode 5	 • Possible transpositions: 6
Mode 6	 • Possible transpositions: 6
Mode 7	 • Possible transpositions: 6

As mentioned in the table above, Messiaen's *Le banquet céleste* is mainly written in mode 2, moving between the mode's three possible transpositions and also introducing short passages that use other scales. The video mentioned earlier handily colour codes the transpositions being used throughout the piece in blue, pink and green, with yellow for 'alien' scales.

Messiaen returned again and again to mode 2 throughout his composing career. Why should that be? Perhaps for the particularly rich harmonic possibilities that the mode offers: unlike other modes, it can provide both major and minor triads, dominant 7th chords, and the particularly sweet **added 6th chord** with which Messiaen ends many of his scores.

Rhythm and time

Although it's only 25 bars long, *Le banquet céleste* takes about seven or eight minutes to perform. That's because of its extremely slow tempo. Going by Messiaen's metronome marking of quaver = 52, the piece's opening chord would last about seven seconds – and in some recordings it can last as many as ten.

Messiaen actually revised *Le banquet céleste* in 1959, adding his specific metronome marking because he thought that organists were playing it too fast!

What reactions do you get from students on hearing the piece for the first time? Are they simply bored, frustrated that it takes so long for anything to happen, or even entranced by its atmosphere? From the length of *Le banquet céleste*'s opening chord, they might be forgiven for wondering if anything else is going to happen in the piece at all.

That might sound like a joke, but in fact it points to a concern that occupied Messiaen throughout his composing career – that of rhythm, duration and time:

- By insisting on such a slow tempo, Messiaen begins to weaken connections between his harmonies: they're more like individual sound events, to be heard singly, rather than harmonies with relations to each other in a greater scheme.
- Messiaen's religious symbolism is that the eternal is with us here and now, in the same way that the Catholic Communion doesn't simply represent or memorialise the Last Supper but actually re-enacts it.

We'll return to a fuller exploration of Messiaen's approach to rhythm and time in the next section, on the *Quartet for the End of Time*.

QUARTET FOR THE END OF TIME

Background

Messiaen wrote his famous *Quartet for the End of Time* for the unusual combination of clarinet, violin, cello and piano – mainly through necessity rather than choice. You can hear a recording of the *Quartet* with synchronised score here.

The *Quartet for the End of Time* has probably one of the most famous backstories in the whole of 20th-century music. At the outbreak of the Second World War, Messiaen was called up to fight but quickly found unfit for active service because of his poor eyesight. Instead, he became a medical auxiliary in Verdun, in north-east France, and while travelling to the city of Nancy, he was captured by German forces along with three army colleagues. The four men were taken to prison camp Stalag VIIIA in Silesia, now in Poland.

While in the prison camp, Messiaen met three other musicians – a clarinettist, a violinist and a cellist. He initially wrote a short trio for them, which they played secretly in the camp washrooms. He later expanded the trio to what became the full-length *Quartet for the End of Time*, with himself on piano. The four men premiered the *Quartet* in January 1941 in the prison camp itself, before an audience of fellow inmates – with the composer on a broken-down upright piano and the three other instrumentalists struggling against the effects of a freezing winter. Messiaen later remembered: 'Never have I been heard with as much attention and understanding.'

The *Quartet for the End of Time* is an eight-movement work based on the subject of the Apocalypse, drawing on the imagery of the Biblical Book of Revelation: Messiaen even dedicated the *Quartet* 'in homage to the Angel of the Apocalypse, who raises his hand to Heaven saying: "There shall be no more time."' Messiaen denied any connection between the work's theme and the perilous wartime circumstances of its composition, but it's hard to ignore its context when considering the piece.

Like many of Messiaen's works, the *Quartet for the End of Time* is long (about 50 minutes). Although it would be a hugely rewarding experience to explore all of the *Quartet* in depth, here we'll look at two movements in detail:

- Movement 1: 'Liturgie de cristal'
- Movement 6: 'Danse de la fureur, pour les sept trompettes'

Rhythm and time

We've already seen Messiaen taking an unusual approach to rhythm and time in *Le banquet céleste*. In the *Quartet for the End of Time*, he takes things further, using several techniques blurring lines between rhythm, duration and time to symbolise the ending of time itself.

SLOW TEMPOS

We've already seen Messiaen's use of an extremely slow tempo in *Le banquet céleste*. He expands on that technique here:

- The *Quartet* has two very slow finales – movement 5 ('Louange à l'Éternité de Jésus') and movement 8 ('Louange à l'Immortalité de Jésus') – both written for solo stringed instrument plus piano.
- In both of them, Messiaen tricks the ear by slowing harmonic rhythm to almost a standstill, while maintaining rhythmic articulation at a more conventional pace. The piano accompaniment keeps moving relatively quickly in both Louanges – in semiquavers in movement 5, and demisemiquavers in movement 8 – but harmonies change only ever bar or two, at the beginnings of the movements at least. We thereby hear music that sounds as if it's both static and moving.
- If we take Messiaen's 'Infiniment lent' tempo marking in movement 5 literally, then the rest of the *Quartet* would only be heard when time itself stops.

MESSIAEN'S RHYTHMIC TALAS

Messiaen's separation of rhythm and pitch is very similar, too, to the medieval technique of **isorhythm**. Messiaen claimed not to have known about isorhythm before writing the *Quartet*, and only to have discovered it later.

Another of Messiaen's techniques for subverting our conventional sense of rhythm is to strip it from its traditional relationship with pitch or harmony, and to treat it as an independent entity in its own right. It's a way of treating rhythm and pitch that has similarities to Indian concepts of tala and raga (see *Music Teacher* resource, May 2014). It's an example of Messiaen's use of **layered textures**, which we'll come back to in more detail below in the *Turangalîla Symphony*.

Listen to the start of the *Quartet*'s first movement, 'Liturgie de cristal'. It might seem like the four instruments are playing unconnected material. In fact, while the clarinet and violin chirrup away with tiny fragments of birdsong (discussed below), the cello and piano are working through complex cycles of durations and chords/notes.

The piano plays a cycle of 17 durations against another cycle of 29 chords. Count 17 chords from the beginning of the piano line, and you'll discover that on the 18th, the rhythm from the opening begins all over again. Likewise, count 29 chords from the beginning and you'll discover that the 30th is the same as the first (in pitch at least, if not duration).

The cello, too, has two separate cycles going on, with 15 durations against 5 notes. Again, count 15 notes from the start of the cello line and on the 16th, the opening rhythm begins all over again. Count five notes from the start, and from the sixth the opening set of pitches simply repeat.

Here's a summary of the two instruments' cycles of duration and harmony/melody – and, more importantly, how many chords or notes it will take for them to return to start playing the same pitches and the same rhythm as at the opening, all over again.

	Rhythmic cycle	Harmonic/melodic cycle	Total
Piano	17 durations	29 chords	493 chords
Cello	15 durations	5 notes	15 notes

Things get more complicated still, though. You can probably work out that, since both instruments have their own individual cycles, putting them together creates its own, bigger cycle. If we waited until both instruments came back together again with the same material as the opening of the movement, we'd be there for more than two hours.

What Messiaen creates in the mere three minutes of his 'Liturgie de cristal' is a tiny snapshot of a far vaster process, one that we can imagine to have started before the movement began and may continue for a long time after it ends. It's another of his ways of symbolising the ending of time in his *Quartet*.

ADDITIVE RHYTHM

We usually think of rhythm as occupying the beats in a bar of music, with some beats stronger or weaker than others (eg **1** 2 **3** 4 in 4/4). But what if we think of rhythm simply as a set of durations, built up from different additions of an underlying tiny unit?

That's the thinking behind the concept of **additive rhythm**. In Western music, Stravinsky arguably came up with the concept in *The Rite of Spring* (covered in its own *Music Teacher* resource, December 2016), specifically in the 'Sacrifical Dance', and Messiaen has acknowledged that piece's influence on his own thinking about rhythm.

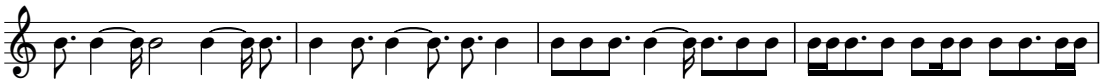
Let's look at movement 6 of the *Quartet for the End of Time*, 'Danse de la fureur, pour les sept trompettes'. It's essentially a single unison melody for all four instruments. A few points are worth noting:

- There's no time signature, and the number of beats changes almost every bar – in fact, if we try to work out conventional time signatures, we quickly find we're dealing with fractions (4¼/4, 4¼/4, 4½/4, 4¾/4).
- In fact, it's far simpler to see the bars' rhythms simply as successions of durations based on an underlying semiquaver pulse (meaning 17, 17, 18, 19 semiquavers).
- Messiaen also adds single semiquavers at certain points to disrupt the otherwise regular flow of the melody: imagine, for example, how boring bar 1 would become without the semiquaver C.
- Messiaen adds dots to lengthen certain notes, again disrupting the regular flow of the melody, but also making resolution more definite – almost like a mini-*ritardando* written into the music itself. Listen to how much more definite the resolution in bar 4 feels with the simple addition of a dot to the C.

PALINDROMIC RHYTHMS

Palindromic rhythms are, as the name would suggest, simply rhythms that are the same forwards and backwards. (Messiaen actually called them 'non-retrogradable rhythms'.) It's a simple device, but its symbolism is profound. Rhythm, the musical device that's supposed to propel us forward through a piece of music, instead simply turns back on itself and returns us to where we've just come from.

Messiaen uses palindromic rhythms as another musical symbol of the end of time in the *Quartet for the End of Time*, especially in the central section of movement 6, 'Danse de la fureur, pour les sept trompettes' – listen to that section here. Notice how every bar in this section is palindromic in its rhythm – it is the same backwards as forwards:



Furthermore, in the same way that we've seen above in the 'Liturgie de cristal', Messiaen also creates a rhythmic tala here of seven bars, after which the bars of palindromic rhythms simply repeat. (For any students with an ear for maths, that makes 57 durations in all. There's also a melodic cycle of 16 notes going on – which tantalises us with passing references to D major, B major, C major and F major, while never coming to rest on any of them – meaning 912 notes before the two cycles coincide again.)

Later in the movement, Messiaen even augments and diminishes his palindromic rhythms while keeping the pitches immovable on an augmented triad. It's as if both pitch and rhythm have got stuck and can no longer move forward – as potent a musical symbol as any for the end of time itself.

ACTIVITY: COMPOSE YOUR OWN 'LITURGIE DE CRISTAL'

The compositional rules that Messiaen used to construct his 'Liturgie de cristal' are so clear that it's relatively simple to re-use them, and still come up with music that sounds entirely different. Divide students into groups to compose their own version, or even work across a whole class, assigning different layers to different groups of students:

1. Decide on your instrument or ensemble. Is it a collection of instruments that can only play a single note at a time, or are there instruments that can play chords? If you're using a piano, could you include chords in one hand and a melody in the other?

2. Next, divide your ensemble (or instrument) in two: some will play rhythmic cycles, and others will play fragments of melody.

3. For the instruments playing rhythmic cycles:

- Decide on how many durations in the cycle. Prime numbers work well – maybe 13, 17 or 19?
- Decide on what those durations will be. You could even introduce some Cagean chance procedures and roll a dice for each duration, with each dot representing a semiquaver length (one = semiquaver, two = quaver, three = dotted quaver, and so on).
- Choose how many notes or chords you want to use – and make sure it's a different number to the number of durations (maybe just 5 or 7?).
- Decide on the chords or notes themselves – you could use Messiaen's modes of limited transposition, or tonal diatonic scales, or be entirely free and atonal.
- Then simply run the two cycles – duration and melody/harmony – together, and repeat the procedure for all the instruments playing them. Make sure you use different a different cycle for each instrument – or maybe the same cycle, but starting in a different place.

4. Alongside, create short fragments of melody for your other group of instruments. They could be based on birdsong, or other natural sounds, or maybe even speech rhythms.

5. Align your cycles and melodic fragments until you're happy with the result.

TURANGALÎLA SYMPHONY

Background

The *Turangalîla Symphony* is Messiaen's most famous work, and the only one that has found a fairly regular place in orchestras' repertoires. It was written to a commission from conductor Serge Koussevitzky for the Boston Symphony Orchestra, with no specifications as to size or medium. What Messiaen came up with was a massive symphony in ten movements, written for an orchestra of more than 100 players plus piano and ondes Martenot (explored below) soloists, which takes about an hour and a quarter to play. It was premiered in 1949 by the Boston Symphony Orchestra conducted by Leonard Bernstein, and another eminent US composer, Aaron Copland, described it as 'the Messiaen monster'.

Messiaen himself described it like this: 'The *Turangalîla Symphony* is a love song. It is also a hymn to joy. Not the respectable, calmly euphoric joy of some good man of the 17th century, but joy as it may be conceived by someone who has glimpsed it only in the midst of sadness, that is to say, a joy that is superhuman, overflowing, blinding, unlimited.'

Its strange title comes from two Sanskrit words: 'turanga' meaning speed, tempo, time; and 'lîla' meaning, in Messiaen's description, 'the force of life, the game of creation, rhythm and movement'. It has two main melodic themes, which recur at significant moments throughout the Symphony but, unlike themes in a more conventional symphony, barely change throughout the course of the work:

- What Messiaen described as the 'statue' theme is a distinctive succession of imposing, striding chords in the trombones, tuba, horns and bassoons.
- What Messiaen described as the 'flower' theme is far gentler, caressing figure for clarinets, flute and bassoon.

As with the *Quartet for the End of Time*, *Turangalîla* is an immense and complex work that would more than repay in-depth study, and is certainly worth hearing in its entirety for sheer entertainment alone. But the two movements we'll be looking at in detail are these:

- Movement 1: 'Introduction'
- Movement 9: 'Turangalîla 3'

Since it's neither easy nor cheap to get hold of a score of *Turangalîla*, I'll refer to timings from this video of a performance by the National Youth Orchestra of Great Britain under Vasily Petrenko at the 2012 BBC Proms, with Joanna MacGregor as piano soloist and Cynthia Millar as ondes Martenot soloist.

Messiaen and the ondes Martenot

It's unlikely that students will be familiar with the ondes Martenot, an early electronic musical instrument that Messiaen places at the front of the stage as a soloist equal to the pianist in *Turangalîla*. He uses the instrument in a number of ways in the Symphony:

- to enhance the sweetness of soaring melodies in the strings (see movement 6, 'Jardin du sommeil d'amour').
- as a melodic soloist in its own right (as in, for example, movement 9, 'Turangalîla 3').
- to provide unusual effects that couldn't be created by another orchestral orchestral instrument – for example a wide, coarse vibrato, or swooping glissandos from one extreme of the instrument to the other (both of which can be heard in movement 8, 'Développement de l'amour').

Here's a brief guide to the ondes Martenot to put those uses in context.

THE ONDES MARTENOT: A CRASH COURSE

- The ondes Martenot was invented in 1928 by **Maurice Martenot,** who had been a cellist – and you can see the influence of the cello's singing tone in the instrument's 'ribbon' technique of playing (see below).
- It was taken up by several French composers – notably Varèse, Koechlin, Honegger and Milhaud – but has become particularly associated with Messiaen because of his repeated use of the instrument, even if it's only in a handful of his pieces.
- The ondes Martenot can be played using either a conventional, piano-style **keyboard,** or by sliding a metal ring attached to a fine metal thread (or '**ribbon**') along the front of the keyboard, allowing for slides, tremolo effects and wide vibrato (which can also be produced by the keyboard itself, whose keys move slightly to the left and right).
- The keyboard or 'ribbon' are played with the right hand only. The left hand operates a small **drawer of controls,** which determine dynamics and timbre.
- The ondes's **timbre** is controlled by a series of switches in the left-hand drawer, with several settings that can be used individually or together.
- The left-hand drawer also contains controls to determine which of the instrument's several **loudspeakers** sound comes out of (not all instruments have all of the loudspeakers mentioned below), again influencing the sound:
  - a traditional loudspeaker.
  - a loudspeaker with springs inside, to produce a reverb effect.
  - a loudspeaker with a small gong inside, to produce a halo of harmonics.
  - a lyre-shaped loudspeaker with sympathetic strings to produce sympathetic resonances.

ACTIVITY: DISCOVERING THE ONDES MARTENOT

Here is a useful video produced by the Seattle Symphony in which Cynthia Millar (also the ondes soloist in the video we're referring to) demonstrates and explains her instrument. You could set watching this video as a homework task, and ask students to write notes answering the following questions:

- Who invented the ondes Martenot, and what instrument did he play?
- How many octaves does it have?
- It can be played with a traditional keyboard, but what's the other, more unusual way of playing the instrument?
- What different roles do the left and right hand have in playing the instrument?
- Why does the ondes Martenot have three speakers, and how are they different?
- Why do the keys on the keyboard move left and right?

Structure and texture

Messiaen's *Turangalîla Symphony* provides some good examples of his unconventional ways of dealing with structure and texture, essentially placing unrelated, often heavily contrasted blocks of material next to each other. He does this in two ways:

- Horizonally: to produce texture.
- Vertically: to produce structure.

Let's look at examples of both of these devices.

LAYERED TEXTURES

We've already seen one example of Messiaen's 'layered' textures in the 'Liturgie de cristal' from the *Quartet for the End of Time*. The penultimate movement of *Turangalîla* provides another good example of Messiaen's use of layered textures – in other words, piling up layers of material on top of each other to create often bewilderingly complex textures. 'Turangalîla 3', however, is based around a single melody, announced clearly at the opening of the movement, so we can quite simply track Messiaen's transformations of the theme and how he piles them up together to create a web of **heterophony**.

Here's a description of the various different sections of 'Turangalîla 3', and the different layers of music that Messiaen builds up. Timings are taken from the video by the National Youth Orchestra of Great Britain under Vasily Petrenko we've referred to earlier:

Bars	Time	Description
1-20	1:05:58	The movement opens with the main theme, divided fairly conventionally into five four-bar phrases, played by (mainly) clarinet, oboe, trumpet, ondes Martenot and flute, with gentle accompaniment from vibraphone and tubular bells.
21-26	1:06:57	A quintet of percussion instruments (wood block, suspended cymbal, maracas, side drum and tam-tam) begin a cycle of interlocking rhythms, which will continue until the end of the movement.
27-46	1:07:12	The main theme returns in octaves on the piano, along with celeste, glockenspiel and a richer accompanying orchestration. The percussion quintet continues in the background.
47-52	1:08:04	Another interlude for the percussion quintet, now joined by 13 solo strings who colour the percussion's interlocking rhythms with harmonies, one group per instrument: • first violins = wood block • second violins = suspended cymbal • violas = maracas • cellos = side drum • double basses = tam-tam
53-92	1:08:19	Messiaen creates a complex, layered texture here: • Solo piano has the original main theme transformed into a running pattern of triplet semiquavers. • The ondes Martenot has the original theme quite freely transformed in terms of rhythm, and with sections repeated or reordered at will. • The celeste, glockenspiel and vibraphone have a variation on the original theme, flattened out into (usually) a stream of running quavers with grace-note decorations. • The percussion-plus-strings rhythmic patterns continue as before behind all this surface activity.
93-112	1:09:56	Messiaen maintains the four layers of texture in the previous section, and adds a fifth: • Woodwind (flutes, clarinet and bassoons) add a staccato version of the original theme played in constant semiquavers, but retaining the original's note lengths, with tubular bells punctuating at cadences. Right at the very end (bars 109-112) Messiaen adds horns, trumpets and trombones playing the cadential tritone motif to emphasise the ending of the movement.

MONUMENTAL STRUCTURES

We've looked at how Messiaen piles up material horizontally to create texture. Now let's look at him placing blocks of material next to each other vertically, to generate form.

We're going to go right back to the opening movement of Turangalîla, 'Introduction', and to a section at figure12 (bar 82) in the score, or 4:09 in the recording.

There are two immediately identifiable types of material being contrasted here:

- A: stomping, machine-like material, using a quartet of piano, celeste, glockenspiel and vibraphone, plus flutes, bassoons and high strings, against a heavy, thudding bassline from the double basses.
- B: lighter, more propulsive material, characterised by aggressive brass stabs, repeated chords from the piano, descending brass scales copied quickly by the piano, all accompanied by the distinctive sound of a woodblock.

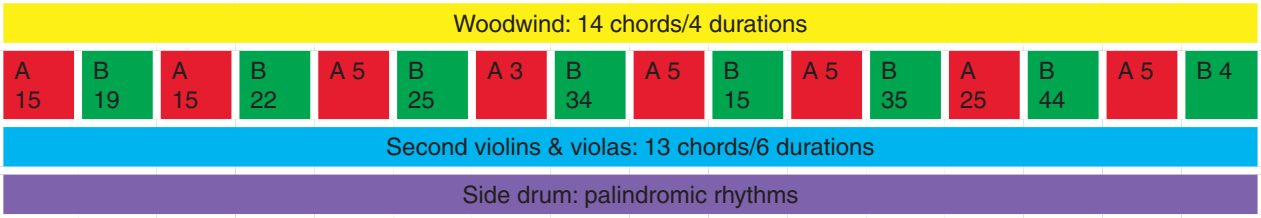
For the central section of *Turangalîla*'s opening movement, Messiaen simply repeats and alternates these two types of material, using unpredictable lengths to keep us guessing as to what's coming next. Here's how the two types of material are alternated (figures refer to their lengths in number of quavers):

A 15	B 19	A 15	B 22	A 5	B 25	A 3	B 34	A 5	B 15	A 5	B 35	A 25	B 44	A 5	B 4

But he can't quite resist using his **layering** technique here, too. As well as these alternating types of material, Messiaen has three other processes going on:

- Woodwind play a sequence of 14 chords against a rhythmic cycle of four durations, beginning a semiquaver later in the bar each time.
- Second violins and violas play a sequence of 13 chords against a rhythmic cycle of six durations.
- The side drum taps out a rhythm based on slowly expanding palindromic rhythms.

The section as a whole looks like this:



DES CANYONS AUX ÉTOILES…

Background

We jump forward more than two decades for the final work in this resource. Messiaen completed *Des canyons aux étoiles…* ('From the Canyons to the Stars…') in 1974, following a commission from the wealthy US patron Alice Tully for a piece to celebrate the bicentenary of the Declaration of Independence. Messiaen wanted to focus on the natural splendours of the USA, and took his inspiration from the canyons of Utah, especially Bryce Canyon. He visited the location in 1972, making detailed notes on the landscape's colours and bird life, which formed the basis for his new work.

Des canyons aux étoiles… is another huge work – in 12 movements, lasting about an hour and a half. It's a celebration of the natural world, but also a deeply religious piece: Messiaen sees the creations of God all around him in the natural landscape. It is, however, written for smaller forces than a piece like the *Turangalîla Symphony* – piano, horn, glockenspiel and xylorimba soloists; full sections of woodwind, brass and percussion; but just 13 solo strings. Messiaen also employs two unusual percussion instruments to evoke the landscape and climate of Utah: a **wind machine**, which uses a rotating cylinder rubbing against a canvas covering to convey the sound of the wind; and a **geophone**, a drum containing small lead pellets that are swirled slowly to evoke the sound of dry, shifting earth.

As with previous works, it's well worth exploring all of *Des canyons aux étoiles…* in depth, but for this resource, we're going to focus on two specific movements:

- Movement 8: 'Les ressuscités et le chant de l'étoile Aldébaran'
- Movement 10: 'La grive des bois'

Compare this movement with the sixth movement of Messiaen's *Turangalîla Symphony*, 'Jardin du sommeil d'amour' – in many ways it's almost a recomposition of the same music.

MOVEMENT 8: 'LES RESSUCITÉS ET LE CHANT DE L'ÉTOILE ALDEBARAN'

According to Messiaen's own introduction, this movement represents the stars themselves singing, in a joyful vision of the sky as seen from Earth, and also of Heaven. It unfolds very simply, as a succession of slow, ecstatic string harmonies, accompanied by birdsong from the piano, piccolo and glockenspiel (the songs of the birds here representing the voices of the resurrected). Between every large section of the strings' harmonies comes a delicate texture of harmonic glissandos from three solo violins, plus strange harmonic sounds from the double bass, produced by 'knocking' on the strings with the wood of the bow.

MOVEMENT 10: 'LA GRIVE DES BOIS'

Messiaen based this miniature movement almost entirely around the song of the American wood thrush, which he writes as a simple arpeggio pattern in C major. The song is heard in two versions:

- a darker, duller version on flute and horn, which Messiaen uses to represent our earthly existence.
- a brighter, faster version on piccolo and high tuned percussion, which represents our bright new selves after resurrection.

As in virtually all his music, Messiaen uses a very sectional approach to **structure and form** within this

movement, contrasting and repeating blocks of music to build it up. Here's a description of the various sections of 'La grive des bois'. Timings are taken from this recording by the London Sinfonietta conducted by Esa-Pekka Salonen:

Section	Bars	Time	Description
A	1-9	1:06:49	• Darker wood thrush theme on flute and horn. • Brighter wood thrush theme on piccolo and high tuned percussion. • Brief piano cadenza on the song of another bird, the Wilson's thrush.
A	10-18	1:07:16	• Darker wood thrush theme. • Brighter wood thrush theme. • Piano cadenza on the Wilson's thrush, very slightly extended.
B	19-49	1:07:42	• Brighter wood thrush theme. • Song of the hermit thrush on woodwind. • Brighter wood thrush theme extended. • Hermit thrush theme extended. • Piano cadenza on the Wilson's thrush closes the section.
A'	50-55	1:08:17	• Darker wood thrush theme. • Brighter wood thrush theme. • No Wilson's thrush piano cadenza this time.
C	56-71	1:08:37	• Colour chords (see below) in woodwind and brass, based around the wood thrush arpeggio theme, played by trumpets with variety of mutes. • There are two sections of the colour chords, each of which is finished with string harmonics (in a similar way to those used movement 8) plus wind machine, coming to rest on a sweetly harmonised C major added 6th chord.
D	72-86	1:09:30	• Brighter wood thrush theme. • Trio of flutter-tonguing flutes. • Raucous interruption from the song of the Carolina wren on woodwind and strings. • Brighter wood thrush theme.
C'	87-95	1:09:55	• Coda: repeat of woodthrush arpeggio theme in horns, cor anglais and flute, plus white-note harmonies from strings and rumblings from geophone.

Messiaen and birdsong

We've already encountered Messiaen's use of birdsong in his *Quartet for the End of Time* and the *Turangalîla Symphony*. In fact, birds inspired Messiaen from some of his very earliest works, but in early works, he's quite unspecific in his use of birdsong: he rarely identifies which bird is singing, for example, and often marks chirrupping lines to be played simply 'like a bird'.

A turning point came in the 1950s, with two key works: *Réveil des oiseaux* ('Dawn Chorus', 1953) and *Oiseaux exotiques* ('Exotic Birds', 1956). In those pieces, Messiaen is meticulous in transcribing the songs of individual birds, and of identifying which particular birds they are – whether that's from hearing them live in nature, or even on recordings (as was the case with many of the birds from America and Asia whose songs he combined in *Oiseaux exotiques*).

Messiaen was proud of his deep immersion in nature, and of the painstaking lengths he took to catalogue bird songs on field trips around France and further afield. He also began to use birdsong not just as a decorative addition, but as a fundamental building block of his music. Indeed, both *Réveil des oiseaux* and *Oiseaux exotiques* are built up from nothing but birdsong. And in *Des canyons aux étoiles…*, birdsong plays a central role in Messiaen's celebration of the American landscape.

Here are the birds whose songs he uses in the two movements of *Des canyons aux étoiles…* that we're examining:

Movement 8: 'Les ressuscités et le chant de l'étoile Aldébaran'	• Hermit thrush • Wilson's thrush • Brown thrasher • Olive-backed thrush

Movement 10: 'La grive des bois'	• Wood thrush • Wilson's thrush • Hermit thrush • Carolina wren

Why did Messiaen use birdsong so prominently in his music? There are two main reasons:

1) A symbolic reason: Messiaen regarded birds as 'God's musicians', and their songs as manifestations of God's love and creation.

2) A musical reason: birdsong provided Messiaen with a ready-made supply of angular, highly chromatic melodies that he could use singly, or even weave together in dense counterpoint.

Messiaen was happy, too, to admit the transformations he made of the birdsong he used. He would transpose songs down one (or more) octaves to make them playable by human musicians, colour them with harmonies he had invented himself, or even adapt the shapes of particular birds' songs to suit his purposes.

How accurate was Messiaen in his use of birdsong? Let's look at his use of the song of the wood thrush, around which 'La grive des bois' is based. You can listen to a field recording of an authentic American wood thrush here. Compare it with the versions Messiaen uses throughout the movement. There are clearly moments in the real bird's song that sound a lot like Messiaen's arpeggio figure. But there are plenty of differences, too – not least large parts of the song that Messiaen has omitted.

Rather than questioning Messiaen's accuracy or consistency, however, students would probably be better off drawing attention to the freedom with which Messiaen used birdsong in his music, adapting it to his own purposes in its particular context.

Harmony and colour

As with birdsong, we've talk previously about Messiaen's 'colourful' use of harmony, how the harmonies he generated with his modes of limited transposition throughout his music seem often to shine brightly with kaleidoscopic hues. Again from the 1950s, however, Messiaen made things more definite: he suffered (although that's hardly an appropriate word) throughout his life from a condition called **synaesthesia** (see below), meaning that he associated particular harmonies with particular colours, and he began to use colour itself as a determining factor in his harmonies.

SYNAESTHESIA: A CRASH COURSE

- Synaesthesia is a recognised medical condition in which often unexpected **connections** are made between different sensory experiences. Synaesthetes can experience all manner of unusual associations: days of the week can have individual smells, for example, or numbers can seem to occupy different locations in space.
- Little is known about why or how the condition develops.
- Synaesthesia that makes associations between **colour and sound,** however, is a well-recognised condition experienced by numerous musicians.
- Other famous synaesthete composers include:
  - **Liszt** and **Rimsky-Korsakov,** who disagreed over which keys represented which colours.
  - **Scriabin,** who only claimed he was a synaesthete towards the end of his life, but invented a 'colour organ' to project colours into the concert hall for his *Prometheus: The Poem of Fire*.
  - Contemporary US composer **Michael Torke,** who has written numerous works based around his experiences of harmony as colour (eg *Bright Blue Music*.
- Each synaesthese has their own **unique, individual experience**: musicians who experience sound as colour, for instance, rarely see the same colours for the same sounds.

In his 1963 work *Couleurs de la cité céleste*, Messiaen went as far as stating in his introduction to the score: 'The form of this work depends entirely on colours.' In that earlier work, he is very specific about colour harmonies in the score, marking chords with often detailed descriptions of the colours they represent, for example 'yellow topaz, bright green chrysoprase, and crystal' or 'green emerald, violet amethyst'.

In *Des canyons aux étoiles…*, he stops short of indicating specific colours for individual chords, but there are clear examples of his use of colour nonetheless.

Movement 8, for example, revolves around A major, which for Messiaen is a bright, clear blue. In his introduction to the movement, he describes it like this: 'A major which gives the ensemble a blue sonority: blue like saphire, like chalcanthite, like certain transluscent fluorites, blue like the sky'. Movement 10 is based around C major, which for Messiaen is a brilliant, pure white (with holy connotations) – in this case, representing what he describes as 'a secret love between the soul and God'. Movement 7 is another example: in 'Bryce Canyon et les rochers rouge-orange' ('Bryce Canyon and the Red-Orange Rocks'), Messiaen uses E major to symbolise the orange-red of the Bryce Canyon landscape.

Messiaen is remarkably consistent in his use of colour across different pieces of music. Take A major and blue as an example. In his piano piece 'Le merle bleu' from *Catalogue d'oiseaux*, he uses A major to represent both the blue of the bird's plumage and the bright blue of the Mediterranean Sea and clear summer skies of his habitat. At the very end of his opera *Saint Francois d'Assise*, he uses an overwhelming C major added 6th chord to represent the blinding white light of God's grace, and the Saint's ascent into Heaven.

Messiaen's colour harmonies are far from restricted to keys and triads, however. He derived colours from the more complex harmonies generated by his modes of limited transposition, ranging from the simple ('gold and brown') to the incredibly complex ('blue-violet, speckled with little grey cubes, cobalt blue, deep Prussian blue,

highlighted by a bit of violet-purple, gold, red, ruby, and stars of mauve, black and white'). It might seem a frustratingly personal way of considering one of the fundamental building blocks of music – after all, nobody else can experience those harmony/colour associations in quite the same way as Messiaen. But maybe that's another way of taking his perspectives into the classroom – as inspiration for transforming students' personal experiences into elements of music.

ACTIVITY: MAKING MUSIC PERSONAL

It's unlikely (although not impossible) that any of your students will experience synaesthesia themselves. Even if they don't, there are other personal elements in their lives that can be transformed into music:

- Transform the mobile phone number of someone close to them into musical notes (using, for example, 1=C, 2=C sharp, 3=D, etc), then play them in sequence as a melody, or stack them as a chord.
- Change the name of a close friend or family member into musical notes, and use it in a similar way.
- Is there a memorable experience that students could symbolise in a musical gesture? Maybe an aeroplane taking off as rising chords, or exam worries as low, threatening harmonies?

The essential point here is to keep the reference secret – nobody else should know what these musical elements refer to. But if students build up a small set of melodies/harmonies/gestures in this way, how does it feel when they work them together in a composition? Does knowing what they refer to alter the way students decide to put them together, or transform them?