



Department
for Education

Technical Guidance

Guidance to support users of the primary
school ICFP workbook

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Summary

There is no workbook of generic ICFP spreadsheets that will meet the requirement of every school. There is however a set of basic principles that can be applied to suit any school or school group implementing an ICFP approach. The basic principles are outlined in the paper 'Basic Principles of ICFP'.

This guidance is written in the form of a manual for a workbook of spreadsheet templates designed to illustrate the key ideas. The bulk of these notes are dedicated to the four linked sheets that are an example of a full ICFP model. All the spreadsheets in the workbook are intended as worked examples that can be adapted for individual school or MAT use. It is not expected that any school will either want or need to use every aspect or approach contained in the workbook.

This guidance supports schools and trusts to generate the metrics necessary for an ICFP approach. Once the metrics have been calculated, the school's leaders, business manager and governors should go through the process of reconciliation as described in the 'Basic Principles of ICFP' paper. This is to make sure that the metrics are used to plan for a structure which is designed to deliver the best possible curriculum in the context of the available human, material and financial resources.

Who this publication is for

This guidance is for users of the primary school ICFP Microsoft Excel workbooks.

Document history

January 2025: Document updated to a new document template and amended to improve accessibility for users. Minor revisions made for accuracy (such as reference to specific cells or rows in the accompanying Microsoft Excel workbook).

The remaining content remains that published in August 2019.

Introduction

Any data in the workbook is for explanation purpose only and does not represent recommended or benchmark values. All the sheets in the workbook are locked with the password PASSWORD. User input cells are unlocked and have a blue font on a white background. Any user is free to unlock and modify any of the sheets to suit their own purposes.

It is suggested that the remainder of these notes is read in parallel with an open copy of the workbook.

There are four linked spreadsheets; SUMMARY DATA, DEPLOYMENT BASE YEAR, DEPLOYMENT PLANNED YEAR and DEPLOYMENT PROJECTED YEAR and a set of notes on LINKED SHEET NOTES. These sheets are the worked example to illustrate both strands of the ICFP process shown in the Overview of Key Elements section in the paper “Basic Principles of ICFP”. The detail of these sheets is covered in the later section of this paper called ‘The Linked Sheets’. The tabs for these five sheets are all coloured red to indicate they belong together.

All other worksheets in the workbook are standalone and written to illustrate specific points. All these sheets have notes on the sheets themselves. Reference to them in this document is limited to a brief description. The headings for each section below match with the names of the spreadsheets in the workbook.

Users intending to work through any of the sheets may find the definition of timetabling terms in the appendix to these notes useful to avoid confusion in the meaning of terms used.

Primary Notes sheet

This sheet only contains a background information box to explain how the idea of teacher periods can be applied in a primary school for the purpose of curriculum analysis and how the distinction between teaching time provided by teachers and staff acting in a teacher role can be made clear.

Stepwise overview sheet

As an introductory exercise, users could start by completing the Overview Sheet, which shows the detail of every key calculation and piece of input data in a flow from the financial and curriculum situation in an academic year where the data is well known through to a planned year where the data and curriculum are being estimated. This sheet illustrates the main calculations but does not have any sense of financial trend, only covers one planned year and does not refer to Key Performance Indicators or metrics. Users are free to add further functionality to suit their own approach.

The four linked sheets (summary data, deployment base year, deployment planned year, deployment projected year)

How any school or MAT chooses to arrive at an estimate for the number of teachers it can afford to employ in any one year and reconciles this with its curriculum plan (and hence timetable) is a matter for the school or MAT itself. Similarly, the manner and extent to which this is discussed or explained to any interested party is also a matter for an individual institution to decide. These linked sheets are in no sense a recommended approach; they illustrate one approach and are for information and possible adaptation only.

Summary data sheet

The SUMMARY DATA sheet is designed to give an overview of the financial situation over a three-to-five-year period with minimal technical detail. The overview allows for simple 'if this then that' assessments of the financial trend and links this to curriculum projections and as such could be a helpful illustration for governors and wider school leadership.

This high-level financial approach linked to teacher deployment models will produce a reasonable estimate for the affordable number of FTE teachers for three to five years, which can then be reconciled with the curriculum plans together with a set of key performance

indicators (KPIs) and metrics. The result can then be checked in detail using whatever financial systems and timetabling system the school has in place and modified accordingly.

Lines 14 to 18 on SUMMARY DATA contain information linked from the DEPLOYMENT sheets. Pupil roll data and the number of FTE teachers to be employed are linked in the opposite direction from the SUMMARY DATA to the DEPLOYMENT sheets.

In the form supplied, these sheets cover three years including the current year for which the data is known. The current year is referred to as the BASE YEAR. The SUMMARY DATA sheet can be unlocked and extended to cover further years by duplicating columns. Additional DEPLOYMENT sheets can be created by copying the DEPLOYMENT PROJECTED YEAR sheet and updating the links to the new SUMMARY DATA sheet.

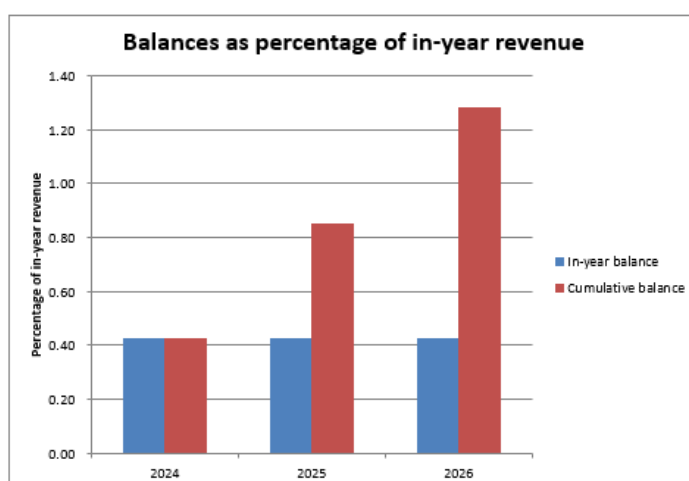
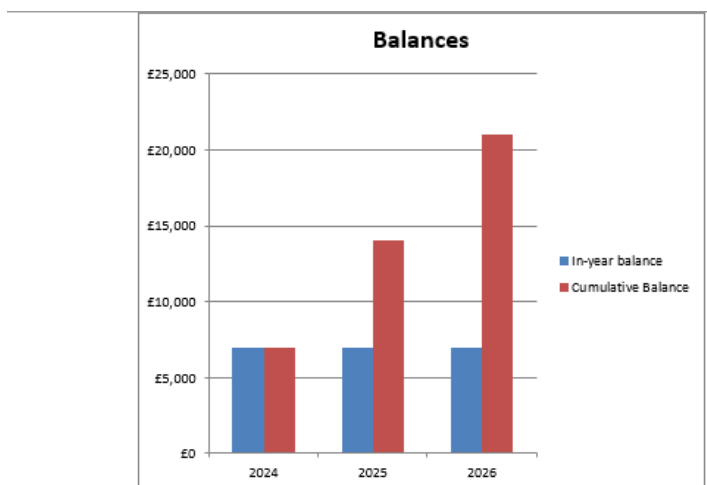
Although these notes describe the flow from Finance to Curriculum, it is perfectly possible to work the approach from the opposite direction. In that case, the critical output will be the in-year balance on the SUMMARY DATA sheet following from an initial policy based curriculum decision. How to deal with any resulting in-year surplus or deficit becomes the key leadership decision.

The values in the sheet as provided are illustrative and not intended to represent any actual school or recommended or benchmark value. Notwithstanding that, the values are reasonably close to those in some schools in the country at the time of writing.

It should be noted that the estimate of future pupil roll numbers is a highly significant variable in ICFP work and a small error can have major consequences for financially related decisions. Users should consider running three scenarios in parallel to represent most pessimistic, most likely and most optimistic pupil roll values.

Lines 21 to 48 give a summary of revenue funding and expenditure. The facility to make estimated percentage changes in key values for the planned and projected years is included in lines 43 to 48. The BASE YEAR of known data is in column B.

Lines 21, 24, 26 and 28 allow the user to test out FTE values of staff in different categories to see the impact on the financial bottom line. The bottom line is shown on lines 39 and 41 and as bar charts like this.



In the planned and projected years, the final staffing for any staff line will not be known in final detail so the total cost of each staff line needs to be estimated from what is known and what can be guessed. There are various ways of doing this and some users may

well just wish to use their own software and approach and change all the total staff costs on lines 22, 23, 25 and 27 to user input values.

The sheet uses an estimate of the average staff salary in the BASE year as a basis for calculation in the planned year. Similarly, the expected cost in the planned year is used to make an estimate of the expected cost in the projected year. The user will need to consider any pay awards and changes in the pay profile of the staff on the line in question to arrive at a final estimate of any percentage change of the average staff cost on any particular line.

The expected FTE value multiplied by the average cost gives the estimated expenditure for that line.

FTE values for support staff with a mix of full-, term-time only and part-time working patterns can be complicated to calculate. Because this workbook is not linked to the financial systems used in the school, this can be simplified by using FTE values that are internally consistent to the workbook itself. For example, using the term time FTE value for Educational Support staff will work just as well as using a totally accurate value and possibly be simpler. Where such a notional value is used it is important to remember to convert this back to an actual value when moving back to the accurate financial system.

The revenue funding available for any one year is summarised on line 33 as an overall total. It is a user input for each year. It may be useful to extend that section to show elements of funding such as schools block, pupil premium, post 16, etc. The percentage change in the overall per pupil amount is shown on line 48 as a check for sense. The user will need to be able to estimate future funding levels from the school's current financial software unless this sheet is modified to include an estimate of percentage change in various funding streams.

The two sections on the SUMMARY DATA that link to the curriculum are the CURRICULUM DATA and SUMMARY STATISTICS sections.

Line 13 has a copy of the number of FTE teachers employed in the BASE YEAR and the proposed number to be employed from the financial perspective in the PLANNED and PROJECTED years.

The values for FTE Teachers required shown on line 14 are the outputs from the planning sheets DEPLOYMENT PLANNED YEAR and DEPLOYMENT PROJECTED YEAR.

The cells in C14 and D14 are conditionally formatted to draw attention to the relationship with the total of FTE teachers from the finance perspective. The red flag in the upper right corner of cell A14 indicates a comment on this which can be read by placing the cursor over that cell.

Line 19 shows the FTE equivalent of Teacher Role staff required on the curriculum plans. This is calculated as if 1FTE teacher role staff member delivers a full cycle of teaching periods. The essential check is that the teaching time required is available from staff employed as Educational Support Staff.

Reconciliation between the finance and curriculum FTE teacher values is achieved by adjusting values on the finance sheets or on the deployment sheets or on both.

This workbook produces a wide range of statistics and KPIs that schools could measure – but schools and trusts should instead choose the metrics that are most pertinent to their circumstances. It is suggested that schools and MATs restrict themselves to those statistics and displays that are valid, useful and necessary. The list provided is to illustrate various statistics in common use across a range of schools rather than present a recommended set for any one school.

The statistical section summarises a list of possible targets, benchmark values and KPIs.

Deployment base year, planned year and projected year sheets

There is a significant difference between the DEPLOYMENT BASE YEAR sheet and the deployment sheets for the planned year and projected year even though the sheets themselves look very similar.

In the DEPLOYMENT BASE YEAR sheet, the average teaching load and hence the teacher contact ratio is the result or output of the sheet.

In the DEPLOYMENT PLANNED YEAR and DEPLOYMENT PROJECTED YEAR sheets, the output of the sheet is a total number of teacher periods required for the desired curriculum. The teacher contact ratio is now a user input for those sheets that converts the teacher period total to a number of FTE teachers that the school would need to employ to staff the curriculum in question.

In the DEPLOYMENT BASE YEAR sheet, the year (cell B2) is copied from the SUMMARY DATA sheet. The timetable cycle length (cell B3) is a user input on this sheet and is copied to the SUMMARY DATA sheet. The pupil roll numbers in column B are copied from the SUMMARY DATA sheet.

Columns C ,D and E lines 5 to 11 allow the user to reorganise the pupils into groups which are combinations of National Curriculum years, with names specific to the school and then into numbers of classes. Some schools may find it more convenient to extend the number of lines on the table so there is only one class per line with the original number of National Curriculum year pupils distributed across the lines. The total allocation of pupils to the school specific groups should be the same as the original total and schools using this feature may find it helpful to put a sum value in cell D19 as a check.

The teaching time is allocated in columns F and G. Column F is for periods supplied by teachers and column G is for periods supplied by staff acting in a teacher role such as HLTA staff. The two types of period are given the unit symbol tp and trp respectively. Note that whilst tp is a fairly common symbol across many schools in timetable terms trp is probably specific to these papers.

On the DEPLOYMENT BASE YEAR sheet, the teacher periods are those actually allocated to the different classes or groups of classes and Whole School Areas that support the classes in some manner. The figures should be for a typical point in the school year that corresponds to the point taken in the SUMMARY DATA sheet for the number of FTE teachers employed in the BASE year.

In the deployment analysis, teaching periods used for small-group or individual intervention are classed as 'Whole School Areas' and recorded separately from the year groups.

Column F shows brief notes summarising the curriculum structure that produces the teacher period total on that line.

The Average Class Size statistic shown on line 22 is the pupil to teacher ratio in the timetable. The teacher role staff are not included in this calculation but any whole school periods supplied by teachers are included. This means that the average size of a teaching group is not the same as this statistic shows. The statistic is important because it is independent of the timetable cycle used and therefore can be used in making comparison with similar schools. It is also one of the five key variables in the fundamental mathematics that underpins all school operation. There is a single sheet in this workbook explaining this statistic in more detail and in particular showing the difference between the average class size and the average size of a teaching group.

Cell C23 on the DEPLOYMENT BASE YEAR sheet gives the teacher contact ratio as the result of the BASE year deployment analysis. This is the second of the five variables in the fundamental equation governing ICFP. For reference the Average Class Size and the contact ratio multiplied together gives the Pupil to Teacher Ratio in the school.

The deployment sheets for the planned year and the projected year work in exactly the same way. The key point is that the teacher contact ratio for these two sheets is a user input in cell C23.

The planned curriculum is outlined in words in column H and teacher period totals in column F. The teacher contact ratio value in C23 converts the teacher period total to an FTE number of teachers shown on line 25. The section shown in yellow on lines 27 to 29 in column B above is copied from the finance information on the SUMMARY DATA sheet.

Other worksheets

What is contact ratio sheet

This sheet gives a detailed example of the contact ratio idea for users who are not already familiar with it.

Modelling contact sheet

This sheet allows the contact ratio value to be modelled for future years where the teaching staff structure is reasonably well known but the individual teachers are not known. It also allows the user to investigate the extent to which management time changes can modify the contact ratio value once all staff have the appropriate allocation of PPA time.

What is average class size sheet

This sheet provides a stepwise explanation of Average Class Size and illustrates the difference between that and Average Teaching Group size.

Bonus and basic sheet

BONUS and BASIC are curriculum analysis terms which are in current use in some schools and academy chains and by some groups of external consultants. When accurately defined they do not apply in primary schools, although there are ways of redefining them for primary school use. Because there is no standard convention for this, the spreadsheet in the workbook is just a text box explanation of the idea.

At cost referencing sheet

This sheet shows a way of referencing a teacher deployment analysis to the number of teacher periods a school can afford in a balanced budget.

Metrics sheet

This sheet shows a range of metrics attached to a deployment analysis.

APPENDIX

Technical timetabling terms used in this document and in the Excel workbook

There are some essential ideas from timetable theory that may be useful for any school leader not closely acquainted with timetabling to understand. These are outlined here at a level which is hoped is appropriate for ICFP but not necessarily in the detail required for timetabling.

Period

Time in the curriculum is usually measured in a unit called the period. The length of a period is usually the length of a single lesson in a school where the timetable is subdivided into a number of lessons that are the same length for all classes. This usually only occurs in schools operating a subject specialist curriculum as is found in most secondary schools. In primary schools it is more usual to think of a class as being with its class teacher for most of the week and having a second teacher or member of staff in a teacher role responsible for the class during the class teacher's PPA time. In this model the length of a period is less obvious but is usually the half day allocated to the class teacher for PPA time. In some schools it can be more convenient to use a quarter of a day as the period unit.

Cycle

The timetable cycle is the number of periods after which the timetable and hence the curriculum structure repeats. In primary schools this will usually be either a ten period cycle where the periods are half a day long or a twenty period cycle where the periods are each one quarter of a day long.

Teacher period

Teacher time on the timetable is measured in teacher periods. One teacher period is one teacher working in a planned teaching situation on the timetable for one period. In most cases the teaching situation will be a single teacher teaching a class of pupils. There are also many other situations where teachers teach pupils as part of the timetable such as team teaching, intervention, and learning support. Similarly the teaching time supplied by Educational Support staff when they act in a teacher role can be counted in 'teacher role periods'.

Contact time and non-contact time

The teacher periods supplied by a teacher on the timetable are contact time and referred to as contact periods.

Teachers have two types of time on their timetables which form part of the timetable cycle. The time can be classified as either contact time or non-contact time.

Contact time, as indicated above is planned teaching contact with pupils as part of the curriculum plan. In a primary school this may well include assembly and registration time but those aspects of school life would normally be excluded from contact time in a secondary school. Non-contact time is PPA (Preparation, Planning and Assessment) time allocated to all teachers who have a teaching load of contact periods, management time, headship time and Newly Qualified Teacher (NQT) time. Regulations covering PPA, management time and headship are set out in the 'School Teachers Pay and Conditions Document' ¹(STPCD) in paragraphs 52.5, 52.6 and 47.2 respectively. The reduction of teaching load for NQTs is covered by the document 'Induction for newly qualified teachers' in paragraph 2.19². School leaders are strongly recommended to check the current version of these documents. A school may also decide to allocate additional non-contact time to teachers for reasons specific to the school.

Contact ratio

The contact ratio is a critical variable used in ICFP and is also one of the five variables in the fundamental equation referred to on the landing page for these notes. Aspects of contact ratio are illustrated in the Excel workbook that accompanies these notes. The contact ratio is the proportion of the cycle teachers spend in teaching contact taken as an average across all teachers. The contact ratio can be used as a comparison metric between schools as it is independent of the number of periods in the timetable cycle in a school. It is false to assume that there is a fixed value of contact ratio that is suitable for all types of school. In particular in small schools if there is a need for a non-teaching headteacher this can have a significant impact on the possible value for the contact ratio. There is a note in the main body of these notes about possible values for contact ratio. Once all teachers have a minimum allocation of PPA time the key driver of contact ratio is the level of Management and Headship time allocated to staff entitled to it. Paragraph 52.4 in STPCD covers the need to have regard to work/life balance. These notes and the associate workbook assume that teacher role staff work at 100% contact and do not have PPA time allocated. If that is not the case a school would need to modify the modelling to include this.

Average teaching load

The average teaching load or average load is the number of periods of contact time teachers have as an average across all staff employed as teachers. Some staff such as a headteacher may have an actual teaching load of zero whilst others may have one close to 90% of the timetable cycle. There will be a range of teaching loads between these limits and the average of all of them is the average teaching load. As with any average,

¹ Paragraph references are to the 2018 edition

² April 2018 edition

care must be exercised in interpreting its meaning. Because the average teaching load relates to the timetable cycle in the school it is not directly comparable with a teaching load in a different timetable cycle. The average teaching load can be calculated by dividing the total number of contact periods on the timetable by the FTE number of teachers.

The contact ratio mentioned above is calculated by dividing the average load by the length of the timetable cycle in periods. This result can be compared in different timetable cycles.

Deployment analysis

This is also called 'Staff Deployment' or 'Staff Deployment Analysis' for historic reasons. It usually only applies to teachers although in some secondary schools and certainly in most primary schools it applies to teachers and staff acting in a teacher role such as HLTA staff.

It is usually drawn up in the form of a table listing the different areas of the school such as year groups and alongside those listing the pupil roll and the teacher time allocated on the timetable.

It comes in two forms. The first form is an analysis of an existing timetable. In this case the FTE total for teachers is a known quantity as are all the teacher period (tp) allocations to different curriculum areas such as year groups. The analysis allows the extraction of many

metrics particularly if financial information such as the average cost of a teacher is included. There are several examples in the workbook accompanying these notes.

Whatever approach is used, the deployment analysis in its planning form provides a series of cost envelopes within which curriculum plans for the different areas of the school must be constructed.

Bonus, basic and relative bonus

This system of planning a curriculum was devised by T I Davies in the 1960's when analysing curricula in Welsh secondary schools and published in his 1969 book *School Organisation*³. It was intended as a method of sketching out a curriculum framework, common to all secondary schools, using small simple numbers which could be benchmarked and also support dialogue with a Local Education Authority about the allocation of teachers through a PTR based formula.

The system was not applied to primary schools. In recent times some schools have

³ Davies, T.I., *School Organisation*, Pergamon, 1969, ISBN 08-013419-X

adapted versions of the idea for primary school use. There is a description of the principles on a sheet in the Excel Workbook but no numerical example is given as there is no generic model in use. Different schools can operate different personalised systems. This can be useful at individual school level but care must be exercised when looking at more than one school because the same words may be employed to mean different things.

Average class size

Average Class Size is the traditional term for the pupil to teacher ratio in the timetable.

The overall average class size for a school is given by

$$\textit{Average Class Size} = \frac{\textit{Pupil roll} \times \textit{periods in the cycle}}{\textit{teacher periods on the timetable}}$$

Average class size is one of the values in the fundamental equation.

The fundamental equation

There is a more detailed paper with worked examples on this which can be downloaded from the original landing page.

In short if the average teacher cost is divided by the product of the per pupil revenue and the proportion of that revenue available for teacher cost the result is the pupil to teacher ratio in a balanced budget.

The pupil to teacher ratio equals the teacher contact ratio multiplied by the Average class size in the timetable.

Eliminating the pupil to teacher ratio from these two statements gives the fundamental relationship that governs all schools in terms of finance and curriculum.

This in effect makes the pupil to teacher ratio the key summary metric in any school. Caution must be exercised in the view of such a metric as schools with identical overall roll numbers may not be strictly similar for the purpose of comparing PTR values unless the distribution of the pupil roll across year groups is taken into account.



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