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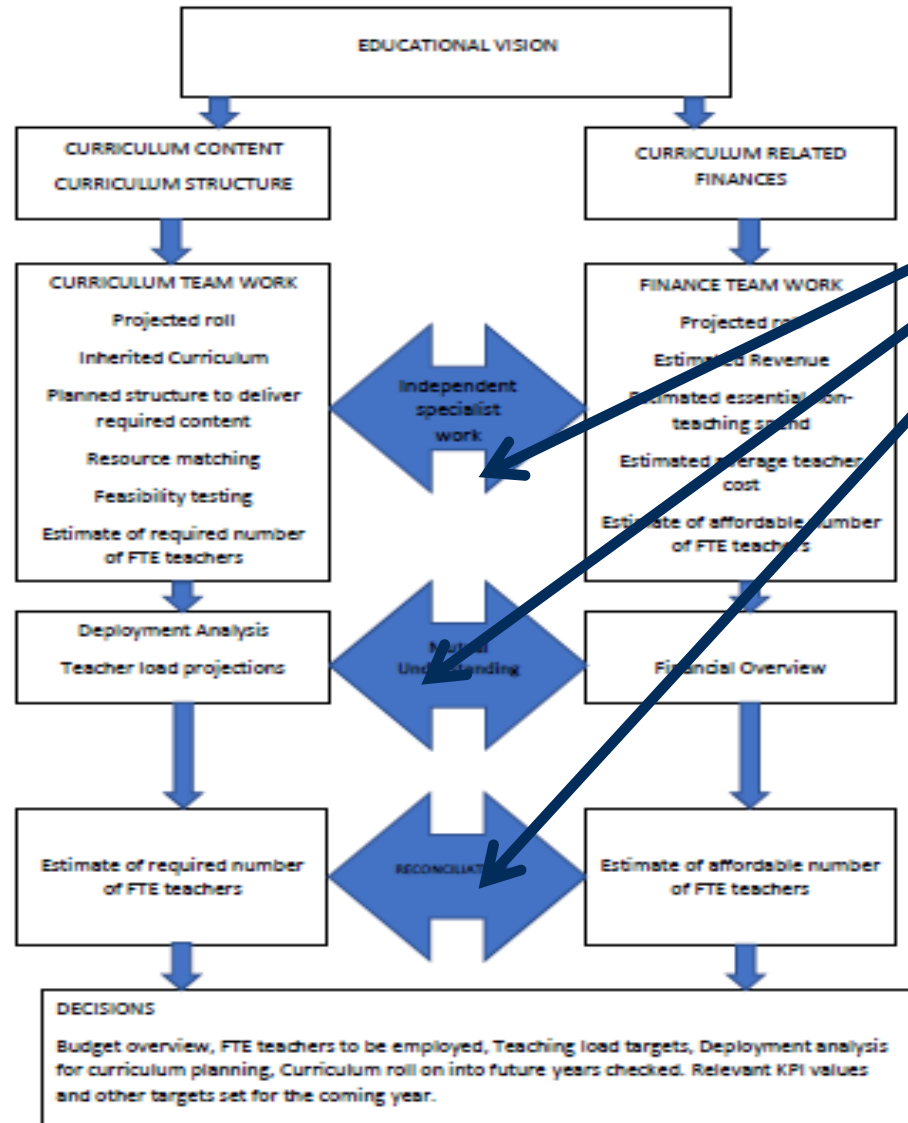
## Webinar Three – The equation of life : Application in a Primary School



# The ICFP Flow has two strands.

This side describes the process of estimating the number of FTE teachers the school needs for its curriculum plan

The result enables the school to move forward with relevant KPI values and targets



The critical thing is that the teams involved in the two strands can communicate with each other and arrive at a reconciled result!

This side describes the process of estimating the number of FTE teachers the school can afford in a balanced budget

Sam Ellis May 2019 ( [samellis@scottishbamfemail.com](mailto:samellis@scottishbamfemail.com) )

## The two sides can be summarised in a spreadsheet.


- The finance side ( right side of flowchart) has data inputs on lines 3,4,5, 6 and 7
- The 'Equation of life quantities' are on lines 11, 12 and 13 and the results are on lines 18 and 19

	A	B
1	Financial Data	Value
2		
3	Total expected revenue	£1,800,000
4	Best estimate of average teacher cost ( salary plus on costs per FTE)	£44,000
5	Best estimate of the total of all revenue expenditure except for that on teachers	£1,020,000
6	Number of FTE HLTA staff included in the previous line	3.0
7	Number of FTE General classroom based Educational Support staff (GTA) included in line 5	7.0
8	Estimated pupil roll for the start of the academic year in question	400
9	'Equation of life' quantities	Value
10		
11	Average teacher cost	£44,000
12	Proportion of revenue available for teacher cost	0.43
13	Per pupil revenue	£4,500
14	Average class size (this is actually the pupil to teacher ratio in the timetable)	30.77
15	Teacher contact ratio	0.74
16	'Equation of life' calculation results and the 'bottom line'	Value
17		
18	Affordable PTR in a balanced budget	22.56
19	Affordable number of teachers (FTE) following from this value	17.73

To get the Affordable number of teachers on line 19, divide line 8 by line 18.

## The two sides can be summarised in a spreadsheet.

- This first screenshot highlights the need in a primary context to know how many Higher Level Teaching Assistants and General Teaching Assistants the school has built into its budget plan. These inputs on lines 6 and 7 are used further down the sheet.



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## The two sides can be summarised in a spreadsheet.

- The curriculum side ( left side of flowchart) has data inputs in a separate deployment section which we look at later.
- The results from the deployment are on lines 14 and 15 and the bottom line is on lines 18 and 19. The overall result of appointing the curriculum staff value is shown on line 23.

	A	B
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11	Average teacher cost	£44,000
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16	'Equation of life' calculation results and the 'bottom line'	Value
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18	Affordable PTR in a balanced budget	22.56
19	Affordable number of teachers (FTE) following from this value	17.73
20	Required PTR using teacher contact ratio and average class size	22.86
21	Required number of teacher following from this value	17.50
22	Equivalent number of FTE teachers difference ( overspend shows negative)	0.23
23	Bottom line ( in year balance if required number of teachers are appointed)	£10,000

In this example either the finance side need adjusting to give more teachers or the curriculum side needs adjusting to require fewer or some shift in both sides to reach a compromise is required. We call this 'reconciliation'

# To plan the curriculum side you need two things.

N.B. 'teaching staff includes staff such as HLTAs acting in a teacher role.


- First thing: A teaching staff deployment analysis
  - This sets out the teaching time required on the timetable to operate different areas of the curriculum and how this time is distributed between teachers and staff such as HLTA staff working in a teacher role. (Benchmark result for teachers but excluding teacher role staff = Average Class Size)
- Second thing: A teaching load analysis
  - This sets out how much different teachers teach as opposed to time spent on PPA and Management or other non contact activity. ( Benchmark result = contact ratio). It also needs a second section detailing the teaching time available from staff who work in a teacher role. It can also be useful to look at the allocation of General Teaching Assistants who are not working in a teacher role.
- Combining the results of these two things gives the number of teachers you need for the curriculum
- In terms of the 'Equation of life' the benchmark results provide a curriculum need PTR

## A note on measuring time

- Although a primary school week is not usually punctuated by a series of bells to indicate lesson changes and which effectively mark the beginning and end of the time units used to measure teaching time called 'periods' these time units can still be used and identified in a primary school.
- The cycle is the time after which the curriculum pattern repeats. For virtually all primary situations it is best to think of this as one calendar week
- The 'period' is a subdivision of the cycle used to measure teacher time. In most primary school half a day works well ( see next slide)

# Typical primary timetable cycles

- A ten period cycle of morning and afternoon sessions

	Mon	Tue	Wed	Thu	Fri
AM					
PM					

- A twenty period cycle with morning and afternoon sessions split into two 'periods'

	Mon	Tue	Wed	Thu	Fri
AM1					
AM2					
PM1					
PM2					



## A common pattern

- A common pattern in primary schools is for a class to have a teacher for nine half days ( = 9tp in a 10 period cycle) and a HLTA or GTA in a teacher role for one half day ( =1trp)
- This pattern is used in the spreadsheet supplied to go with this webinar.
- tp stands for teacher period
- trp stands for teacher role period
- The spreadsheet also has space to account for general class support from General Teaching Assistants not acting in a teacher role

# This is the deployment analysis part of the spreadsheet.

Pupils can be reorganised into mixed year combinations

Teacher periods, teacher role periods and general class support periods are all recorded

	A	B	C	D	E	F	G	H	I	J	K	L	M	N/O	P
24	Teaching staff deployment plan														
25															
26	Timetable cycle length in periods	10													
27		Pupil Roll	Regrouped pupils	New name	Number of classes	Teacher period (tp) allocation	teacher role period (trp) allocation	class support period allocation	Summary notes						FTE teachers employed (shown to 2dp but not rounded)
28	Reception	45	45	R	2	18	2	10	e.g. 2 classes 9tp per class and 1 trp per class						2.42
29	Year 1	60	60	y1	2	18	2	10	note						2.42
30	Year 2	58	58	y2	2	18	2	10	note						2.42
31	Year 3	61	61	y3	2	18	2	10	note						2.42
32	Year 4	60	60	y4	2	18	2	10	note						2.42
33	Year 5	58	58	y5	2	18	2	10	note						2.42
34	Year 6	58	58	y6	2	18	2	10	note						2.42
35	Curriculum areas with teacher period allocations where pupils are already included above														
36	Learning Support	n/a	n/a	n/a	n/a	4	10	0	note						0.54
37	Intervention	n/a	n/a	n/a	n/a	0	6	0	note						0.00
38	Other	n/a	n/a	n/a	n/a	0	0	0	note						0.00
39	Totals	400	400		14	130	30	70	If period totals differ from the contact tables below the cells show red						17.50
40	Average Class Size resulting from this deployment	30.77	This is the pupil to teacher ratio in the timetable ( It counts teachers and not HLTA and GTA staff). Average Class Size is its name												
41	Average size of a class as taught if no pupils are withdrawn for learning support or interventi	28.57	This is the total pupil roll divided by the number of classes												

# This is the teaching load analysis section

	A	B	C	D	E	F	G	H	I	J	K	L
42	Teacher contact detail ( summary of teaching load plans)											
43												
44	Leadership and management roles with less than a full teaching load	Total FTE per line	Total teaching load allocation per FTE				Note			Tp supplied per line		
45	Headteacher	1.0	0				Head does not teach					
46	Deputy Headteacher	1.0	2				Note					
47	Literacy Lead	1.0	7				Note					
48	Numeracy Lead	1.0	7				Note					
49	Senco	1.0	4				Note					
50	KS1 Coordinator	1.0	8				Note					
51	KS2 Coordinator	1.0	8				Note					
52	e.g. Newly qualified teachers	0.0	0				Note					
53	Other	0.0	0				Note					
54	Other	0.0	0				Note					
55	Other	0.0	0				Note					
56	Totals	7.0								36		
57	Teaching load for one FTE teacher with no reduction for management time	1	9				Used to calculate number of Classroom teacher required in table below					
58	The total tp available from management staff and hence the number of FTE classroom teachers is shown in the Teachers required table below.											
59	HLTA and GTA period availability (note that if there is a crossover in the use of GTA and HTLA staff in the teacher role and support roll columns in the deployment table above the cells in the deployment may show red . The critical issues is that th etotal of the relevant cells equals the total available across all staff in this section											
60												
61	Number of periods available per HLTA	10	User input									
62	Number of HLTA staff (copied from line 6)	3.0										
63	Total periods available from HLTA staff	30	Calculated pro rata for part time and total rounded down to the nearest integer									
64	Number of periods available per GTA	10										
65	Number of GTA staff ( copied from line 7)	7.0	User Input									
66	Total periods available from GTA staff	70	Calculated pro rata for part time and total rounded down to the nearest integer									

Lines 42 to 58 deal with the teaching time available from teachers including any like the Head who may not teach. Lines 59 to 66 concern the periods that can be supplied for teacher role work or general class support from HLTA and GTA staff

# The last section uses the teaching load analysis to calculate how many FTE teachers the curriculum plan needs

	A	B	C	D	E	F	G	H	I	J	K
67	TEACHERS REQUIRED TABLE										
68											
69	Quantity		Value	Comment							
70											
71	Total tp required by deployment plan		130	This is the sum of the allocated teacher periods copied from the foot of the Deployment table							
72	Total tp provided by planned management structure staff above		36	This is copied from the table above							
73	Teacher periods required from teachers with no management time allocation		94	This is the difference between the previous two values							
74	Number of FTE teachers required with no management time allocation		10.5	This value is rounded up to the nearest 0.1 FTE							
75	FTE total for all teachers in the planned management structure		7.0	Copied from the table above							
76	Total FTE required		17.5	The sum of the previous two values							
77	Resulting average teacher load		7.4	Shown to one decimal place but not rounded ( the total tp divided by the FTE value)							
78	Resulting teacher contact ratio		0.74	Shown to two decimal places but not rounded ( The average load divided by the timetable cycle)							
79	FTE Teacher requirement calculation ( Note- if the school employs several part time staff who do not provide tp which are pro rata for their FTE value this will introduce a discrepancy between the calculated FTE value and the actual FTE required. The size of the discrepancy will depend on the number of part time staff involved and the differences between actual teaching loads and the pro rata values. The only way to correct this is to draw up a full potential staff list with individual teaching load values. This is outside the remit of this example sheet)										
80											
81											
82											

## All these things have two purposes

- 1) They can be pulled together in a simple summary with quantities that can be benchmarked
- 2) The finance information is in a simple form that can be discussed with non finance staff and the curriculum information is in a simple form that can be discussed with non curriculum staff
- The key point being that this is not only a basis for strategic planning it is also a method of facilitating meaningful team work and progress.

**The bottom line is then shown in the section between the finance and curriculum areas**

	A	B	C	D	E	F	G	H	I	J	K	L	M
9	'Equation of life' quantities	Value	Comment										
10													
11	Average teacher cost	£44,000	This is copied from the user input in the previous section										
12	Proportion of revenue available for teacher cost	0.43	This is calculated from the values in the previous section										
13	Per pupil revenue	£4,500	This is calculated from the values in the previous section										
14	Average class size (this is actually the pupil to teacher ratio in the timetable)	30.77	This is calculated from the teacher deployment plan (see support notes for the detail)										
15	Teacher contact ratio	0.74	This is copied from the quantities derived from the teacher contact detail section below.										
16	'Equation of life' calculation results and the 'bottom line'	Value	Comment										
17													
18	Affordable PTR in a balanced budget	22.56	This is the (PTR) pupil to teacher ratio the school can afford if the in year budget is balanced.										
19	Affordable number of teachers (FTE) following from this value	17.73	This is the expected pupil roll divided by the affordable PTR										
20	Required PTR using teacher contact ratio and average class size	22.86	This is the PTR the school would need if teacher teaching loads and teacher deployment are as defined below.										
21	Required number of teacher following from this value	17.50	This is the pupil roll divided by the required PTR										
22	Equivalent number of FTE teachers difference ( overspend shows negative)	0.23	This is the difference between the PTR values. A negative value indicates an overspend on teachers										
23	Bottom line ( in year balance if required number of teachers are appointed)	£10,000	This is the potential in year budget impact calculated at the average teacher cost										

- In this case the school plan shows a surplus of £10,000. This may be planned. Alternatively the school could increase its expenditure in areas other than teaching or its teacher total.
- The values in the 'Equation of life' section drive the overall result and can be compared with similar schools on the GOV.UK website.

## There are always choices

- Adjust the curriculum or the finance parameters or both to achieve an in year balance of zero
  - Adjust the parameters to show an in year positive balance
  - Adjust the parameters to show an in year deficit.
- 
- In the last case it is probably wise to work out how such a deficit will eventually be recovered and if running with a deficit for the year in question is a wise move.

# Questions

- What curriculum do we want to deliver ? FTE required?
- What curriculum must we deliver? FTE required?
- What curriculum can we afford to deliver? FTE required?
- In a balanced in-year budget

**Curriculum FTE = Affordable FTE (school specific)**

**Curriculum PTR = Affordable PTR (can be benchmarked)**



# Making informed choices

- Agree on a set of success criteria
  - Sustainable curriculum
  - Access to adequate resources
  - Sufficient support staff
  - Buildings that are safe, warm and dry

# Available resources Gov.uk

- [A 7 step guide to ICFP](#)
- [Basic principles of ICFP](#)
- [School and academy financial management and assurance](#)

## Final note

- The worksheet provided is a template for any user to adapt and modify
- It is not intended as a final fully checked product so care must be taken to check carefully for errors before use.
- In the case of email support for the sheet please contact [sam.ellis@ascl.org.uk](mailto:sam.ellis@ascl.org.uk)
- For all other support in the funding and ICFP area or in relation to this webinar please contact ASCL directly



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