

Team Teaching for Mathematics



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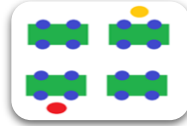
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Planning Template to Guide the Allocation of Additional Teaching Supports for Pupils with Special Educational Needs

Action 1: Identification of pupils with special educational needs	
Review existing information on pupils' needs, using school-based data, and any information from parents and external professionals. Engage in additional screening and data gathering as required, using informal and formal assessment approaches (e.g. teacher observations, information on social and emotional competence, standardised tests, diagnostic tests). Identify all pupils with SEN in the school. Match their needs to the appropriate level on the Continuum of Support.	Notes
Action 2: Setting targets	
Based on individual needs, set clear learning targets for each pupil at each level of the Continuum of Support.	
Action 3: Planning teaching methods and approaches	
Identify the level and type of intervention required to meet targets for each pupil on the Continuum of Support. Schools should consider methodologies best suited to promoting meaningful inclusion such as differentiation, heterogeneous grouping, team-teaching and small group teaching. They should also be mindful that the interventions and supports used are evidence-informed.	
Action 4: Organising early- intervention and prevention programmes	
Based on identified needs, choose evidence-informed early-intervention/prevention programmes to address concerns. Identify time needed and staffing commitment required.	
Action 5: Organising and deploying special education teaching resources	
Cross-reference the needs of pupils at School Support and School Support Plus levels and consider common needs that can be met by grouping to ensure effective and efficient teaching and learning approaches. Agree which teacher(s) will cater for these groups/individuals and when and where the teaching will take place. Be mindful of the requirement that pupils with the greatest level of need should receive the greatest level of support from teachers with relevant expertise.	
Action 6: Tracking, recording and reviewing progress	
Establish a tracking and recording system, to ensure that the progress of all pupils in meeting their identified targets is monitored: <ul style="list-style-type: none"> ● At Whole-school and Classroom Support level by all teachers ● At the School Support and School Support Plus levels by class teachers and special education teachers. 	

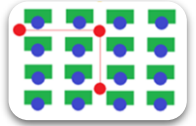
Models of Team Teaching

Station Teaching



- Heavily dependent on personnel
- Teachers divide the responsibility of planning and instruction
- Clear learning focus is important
- Pupils rotate from stations, either on the same day or on the next day of team teaching. With younger pupils they often rotate within the same day but older pupils might rotate over the duration of a week.
- Professional engagement
- Increased instructional intensity and individualization
- Assessment critical for teachers to identify learning achieved

Lead and Support Teaching



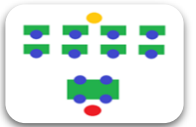
- 'Lead' teacher can take on role of the 'support' teacher and vice versa
- All pupils have access to the same curriculum and interventions are integrated
- Shared language and experience which makes collaboration easier and allows both teachers to be aware of the progress of pupils
- All pupils can access both teachers as required, teachers are not assigned to pupils
- Various forms of assessment can be done by the lead teacher, support, teacher or both teachers

Parallel Teaching



- Teachers teach the **same content** to two groups of pupils in the **same physical space**, a significant advantage being a reduced pupil-teacher ratio
- Suitable at all class levels
- Often very useful in a multi-grade setting
- Clear learning focuses important
- Co-planning important
- Assessment critical for teachers to identify learning achieved

Alternative Teaching



- One teacher manages the large group while the other teacher delivers an alternative lesson, or the same lesson with alternate materials or approaches, to a small group of pupils for a specific instructional purpose
- The smaller pupil-teacher ratio benefits the pupils when they are learning difficult concepts because they are better able to interact with the teacher to clarify misconceptions or extend understandings
- Teachers can also work with pupils of exceptional ability and challenge their specific needs while the remainder of the class is working under the direction of the second teacher
- Teacher collaboration may lead to more targeted lessons and pupils may benefit from being exposed to multiple teaching styles

Teaming Teaching



- Both teachers are responsible for planning and they share the instruction of all pupils.
- The lessons are taught by both teachers who actively engage in conversation, not lecture to encourage discussion by pupils.
- Both teachers are actively involved in the management of the lesson and behaviour management.
- Sometimes used along with another model of co-teaching, for example comprehension strategy, problem solving, mental maths. Each teacher has an active and equal role

Reflective Template Collaborative Relationships

Sample Team Teaching Weekly/Fortnightly Reflection

(Teachers can adapt as necessary to suit their context)

Elements of Successful Team Teaching Partnerships	Rarely	Sometimes	Usually	Consistently
Meeting times to organise and discuss Team Teaching are adhered to				
Team Teaching colleagues equally share and engage in planning and preparation of materials				
Team Teaching colleagues are clear about their roles at each phase				
Team Teaching colleagues are clear about the purpose of engaging in Team Teaching				
Team Teaching colleagues have equitable teaching roles in the classroom for teaching and assessing students				
Team Teaching colleagues are clear about individual pupil targets during the TT lessons				
Team Teaching colleagues communicate openly and reflect on how the TT is progressing				
Opportunities exist for team teaching colleagues to share good practice and strategies to promote inclusion for students with SEN				
A variety of appropriate team teaching models are utilised to maximise student learning				
Students consider all team teaching partners have equal status				
There is clarity among all team teaching colleagues as to the nature and purpose of homework given during team teaching lessons				
Team teaching colleagues adapt and make changes to the organisation and implementation of team teaching arising from regular reflection on the process				



Sample Collated Maths Test Results 3rd Class

Pupil	Drumcondra Results			Content Areas (%)				Process Areas (%)				
	SS	STEN	PR	Number/ Algebra	Shape/ Space	Measures	Data	Recall	Implement	Reason	Connects	Solve Problems
1.	95	5	37	36	67	50	67	56	55	52	60	34
2.	115	8	84	78	78	75	83	78	82	81	80	72
3.	97	5	42	56	56	46	50	56	73	57	40	41
4.	109	7	73	58	89	75	100	78	82	62	100	66
5.	81	3	10	37	44	39	52	44	56	52	66	56
6.	94	5	35	40	67	60	0	62	60	48	67	33
7.	79	3	8	43	46	38	12	44	48	52	40	33
8.	117	8	87	83	78	72	100	75	70	81	100	80
9.	92	4	30	31	44	64	17	38	50	29	33	53
10.	98	5	45	51	67	52	50	75	60	57	50	43
11.	95	5	37	43	44	60	33	38	50	52	33	50
12.	94	5	35	42	67	46	50	67	27	52	20	48
13.	103	6	58	54	89	68	33	75	80	52	67	57
14.	85	4	16	42	38	36	42	44	52	48	36	34
15.	84	3	14	29	44	32	17	38	70	24	33	20
16.	111	7	77	78	56	71	83	56	73	71	60	83
17.	85	4	16	33	33	29	17	44	27	43	20	21
18.	107	6	68	72	78	54	83	67	82	62	80	66
19.	97	5	42	56	44	46	67	56	64	57	80	38
20.	100	6	50	62	52	60	54	58	60	58	63	57
21.	82	3	12	44	38	42	17	38	50	29	33	50
22.	117	8	87	68	63	78	79	68	62	68	62	68
23.	84	3	14	42	38	44	38	44	52	44	42	36
24.	78	3	7	44	38	36	40	42	46	42	48	48
25.	108	7	70	68	71	68	62	60	74	62	66	52
26.	86	4	18	40	48	42	0	42	38	40	44	42
27.	123	9	94	64	76	58	68	70	68	54	68	64
Class Avg				53	58	53	49	56	60	53	55	50

Sample Problem Solving Rubric

	Level A	Level B	Level C	Level D
	<ul style="list-style-type: none"> Little or no engagement Lack of understanding 	<ul style="list-style-type: none"> Pupil started problem but was unable to complete task Some understanding 	<ul style="list-style-type: none"> Correct answer Strong understanding Appropriate solution 	<ul style="list-style-type: none"> Correct answer Exceptional understanding
Problem Solving	<ul style="list-style-type: none"> Pupil did not engage with task. No strategy is chosen or the strategy chosen that will not lead to a solution. 	<ul style="list-style-type: none"> A partially correct strategy is chosen. No evidence of monitoring effectiveness of strategy chosen. 	<ul style="list-style-type: none"> A correct strategy is chosen. Planning or monitoring of the strategy is evident. 	<ul style="list-style-type: none"> An efficient strategy is chosen. Adjustments in strategy, if necessary, are made along the way, and /or alternative strategies are considered.
Reasoning	<ul style="list-style-type: none"> Arguments are made with no mathematical basis. 	<ul style="list-style-type: none"> Arguments are made with some mathematical basis. 	<ul style="list-style-type: none"> Arguments are constructed with mathematical basis. 	<ul style="list-style-type: none"> Deductive arguments are used to justify decisions and may result in formal proofs.
Communicating and Expressing	<ul style="list-style-type: none"> No explanation is given as to how the problem was solved. Mathematical language is not used. Little or no mathematical notation. No use of pictures/tables/graphs to aid explanation. 	<ul style="list-style-type: none"> Some explanation of an approach is evident through verbal/written account. An attempt is made to use formal mathematical language. Some use of mathematical notation. Some use of pictures/tables/graphs to aid explanation. 	<ul style="list-style-type: none"> Explanation of approach is evident through coherent, sequenced response. Formal maths language is used to share and clarify ideas. Correct use of mathematical notation. Pictures/tables/graphs used to aid explanation and clearly labelled. 	<ul style="list-style-type: none"> Explanation lays out problem solution clearly and completely. More than one solution is indicated, or detail of solution shows deep understanding. Formal maths language is used to consolidate thinking and to communicate ideas. Correct use of mathematical notation.
Integrating and Connecting	<ul style="list-style-type: none"> No evidence of drawing on prior knowledge. No connections are made or connections made are mathematically or contextually irrelevant. 	<ul style="list-style-type: none"> Evidence of drawing on some relevant previous knowledge. A mathematical connection is attempted but is partially incorrect or lacks contextual relevance. 	<ul style="list-style-type: none"> Evidence of reinforcement of prior knowledge and applying it to the problem-solving task. A mathematical connection is made. Proper contexts are identified that link both the mathematics and the situation in the task. 	<ul style="list-style-type: none"> Mathematical connections are used to extend the solution to other areas of mathematics. Mathematic connections lead to a deeper understanding of the mathematics in the task.

Sample Weekly Team Teaching Planning Template 1

Skills:					
<input type="checkbox"/> Implementing	<input type="checkbox"/> Understanding and Recalling	<input type="checkbox"/> Communicating and Expressing	<input type="checkbox"/> Reasoning	<input type="checkbox"/> Applying and Problem Solving	<input type="checkbox"/> Integrating and Connecting
Strand:	Strand Unit:	Team Teaching Model:	Teachers:		
Pupil(s) Continuum of Support Target(s):					
Learning Objective(s):					
Differentiated Learning Experiences:	Group 1	Group 2	Group 3	Group 4	
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					

Sample Weekly Team Teaching Planning Template 1 (contd.)

Questioning / Language				
Assessment				
Resources				
Comments / Notes				

Sample Weekly Team Teaching Planning Template 2

Skills:			
<input type="checkbox"/> Implementing	<input type="checkbox"/> Understanding and Recalling	<input type="checkbox"/> Communicating and Expressing	<input type="checkbox"/> Reasoning
		<input type="checkbox"/> Applying and Problem Solving	<input type="checkbox"/> Integrating and Connecting
Strand:	Strand Unit:	Team Teaching Model:	Teachers:
Pupil(s) Continuum of Support Target(s):			
Learning Objective(s):			
Differentiated Learning Experiences:	Group 1	Group 3	
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

Sample Weekly Team Teaching Planning Template 2 (contd.)

Questioning / Language		
Assessment		
Resources		
Comments / Notes		

Notes