Number Sense Maths

NSM Number Facts
Facts and Strategies Across 10

Contents

- Stage 5 Assessment Overview

- Blank Stage 5 Assessment Sheets

- Example of Completed Stage 5 Assessment Sheet

- Stage 5 Assessment Fact Cards

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Assessment Guidance Overview

Resources needed (and included in this pack):

- One set of Stage 5 assessment fact cards (just print, laminate and cut up the sheets included in this pack).
- One Stage 5 assessment sheet per child (print one double sided sheet per child).

Purpose of conferencing

- While conferencing children on the Stage 5 facts, you need to make judgements about two things:
    1. Whether each child has an efficient strategy they can use to work out each fact.
    2. How fluently each child can apply the strategies.

Individual conferencing approach:

- Explain to the child that you are going to be showing them different facts to calculate and are interested in how they think about them. Take the 8 + 9 card and show it to them. Say, "For example, to calculate 8 + 9 you might double 8 and add 1, or you might think 8 add 2 makes 10 and 7 more makes 17, or you might do 8 add 10 and then take 1 off."
- Show the child each fact card in turn and ask them whether they can tell you the answer. When the child has answered, ask them how they know or how they worked it out. Discussion throughout with the children on the approaches they have used will be enormously valuable in informing next steps in teaching. If a child is struggling with a fact don't push them to calculate an answer, just move onto the next fact.
- As you go through, put the cards into two piles:
    - Pile 1: Fact which the child has a strategy for.
    - Pile 2: Fact which the child doesn't have a strategy for (any facts the children count in ones to calculate should be included in this pile).

Follow-up:

- Ring the facts in pile 1 on the assessment sheet, and mark the strategies you observed the child using (see example later in this pack).
- Jot down any observations or teaching points that arose during the conferencing.
- For children who had facts in pile 2, plan follow up teaching to address gaps. After this follow up teaching, reassess the children on gaps shown in the previous conferencing session.
- For the children who had no facts in pile 2, and particularly those who were slow in applying the strategies, plan follow up practice to increase the speed in the applied strategies. The factual fluency animations can support this practice. All children can sit on the carpet together, and write answers to calculations on their whiteboards as the calculations are shown.

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Addition Facts included in the Across 10 assessment

+	0	1	2	3	4	5	6	7	8	9	10
0											
1											
2											2 + 9
3										3 + 8	3 + 9
4									4 + 7	4 + 8	4 + 9
5								5 + 6	5 + 7	5 + 8	5 + 9
6							6 + 5	6 + 6	6 + 7	6 + 8	6 + 9
7						7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9
8				8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9
9			9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9
10											

To reduce conferencing time, we suggest using the facts highlighted in grey to assess which strategies children have mastered. These are included as printable cards in this pack. If you want to conference children on all of the addition across 10 facts, a full set of fact cards can be found on the Teacher Portal in Stage 5, Book 5.

Subtraction Facts included in the Across 10 assessment

-	0	1	2	3	4	5	6	7	8	9	10

	0	1	2	3	4	5	6	7	8	9	10
11			11 - 2	11 - 3	11 - 4	11 - 5	11 - 6	11 - 7	11 - 8	11 - 9	
12				12 - 3	12 - 4	12 - 5	12 - 6	12 - 7	12 - 8	12 - 9	
13					13 - 4	13 - 5	13 - 6	13 - 7	13 - 8	13 - 9	
14						14 - 5	14 - 6	14 - 7	14 - 8	14 - 9	
15							15 - 6	15 - 7	15 - 8	15 - 9	
16								16- 7	16 - 8	16 - 9	
17									17 - 8	17 - 9	
18										18 - 9	
19											
20											

To reduce conferencing time, we suggest using the facts highlighted in grey to assess which strategies children have mastered. These are included as printable cards in this pack. If you want to conference children on all of the subtraction across 10 facts, a full set of fact cards can be found on the Teacher Portal in Stage 5, Book 5.

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Assessment Guidance – FAQs

How many children should I conference?

Ideally all of them. You will find there are some patterns in the gaps children have but real differences too. However, we recognise the demands of individual conferencing so you might just conference 5 or 6 children to start with. We think that once you see how useful the assessment information that you get is, that you will start to find opportunities to conference more children.

Do I really have to conference the children individually? Can't I do it on whiteboards in a small group?

Talking to children to understand their mental processes is so important and you will miss out on so much by just looking at calculations on mini whiteboards. We are used to assessing children individually in phonics and we suggest that this is as important. Conferencing children who know the facts will be quite quick. For children who don't have strategies for the facts, you don't need to ask them to try to work it out, so you can keep these sessions short too.

How should I record the assessments?

Print out the sheets and annotate them during and immediately after conferencing. Keep the hard copy sheets in an easily accessible file. These should be live documents that you add to through the year.

How do I know what strategies a child is using?

Talk to them. Once children know you are interested in how they approach calculations they will really enjoy discussing their methods with you. As you will be talking about strategies regularly in class the children will get really familiar with doing this.

The child is answering really quickly but can't explain how they are doing it. Does that matter?

If the child can get an answer quickly with limited demands on working memory then that is a great place to be. However, being able to discuss your mental processes is a really useful skill in maths so aim to develop it. Modelling this is a good place to start. "Well, I do that using near doubles. I know that 6 + 6 = 12, so 1 more is 13".

When in the year should I conference the pupils?

We would suggest that you initially conference pupils straight after teaching Stage 5. However you will need to keep short practice sessions going through the year to develop fluency in the strategy. We recognise the demands of SATs in Year 2. We suggest that the time after SATs is heavily focused on making sure children are fluent in adding and subtracting across 10 prior to the children starting KS2. You will need to conference the children again during this period to be sure of this.

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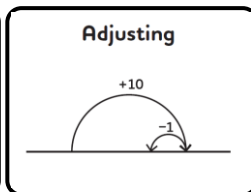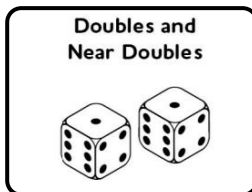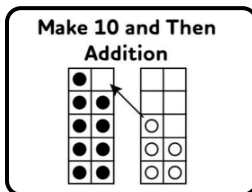
- Stage 5 Assessment Fact Cards

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Name _____ Class _____ Date _____

Assessment: Addition Across 10 – Facts Covered

+	0	1	2	3	4	5	6	7	8	9	10
0											
1											
2										2 + 9	
3									3 + 8	3 + 9	
4								4 + 7	4 + 8	4 + 9	
5							5 + 6	5 + 7	5 + 8	5 + 9	
6						6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	
7					7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	
8				8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	
9			9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	
10											

Strategies observed

Make 10 and Then Addition

Doubles and Near Doubles

Adjusting
+10
−1

Observation Notes

Follow-up plan

Name _____   Class _____ Date _____

Assessment: Subtraction Across 10 – Facts Covered

-	0	1	2	3	4	5	6	7	8	9	10

//

11	11 - 2	11 - 3	11 - 4	11 - 5	11 - 6	11 - 7	11 - 8		11 - 9
12		12 - 3	12 - 4	12 - 5	12 - 6	12 - 7	12 - 8	12 - 9	
13			13 - 4	13 - 5	13 - 6	13 - 7	13 - 8	13 - 9	
14				14 - 5	14 - 6	14 - 7	14 - 8	14 - 9	
15					15 - 6	15 - 7	15 - 8	15 - 9	
16						16- 7	16 - 8	16 - 9	
17							17 - 8	17 - 9	
18								18 - 9	
19									
20									

Strategies observed

Make 10 and Then Subtraction

Doubles and Near Doubles

Adjusting
+10
−1

Observation Notes

Follow-up plan

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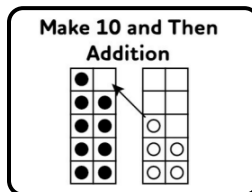
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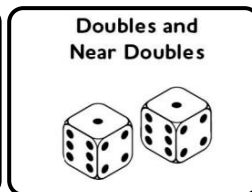# Name: *Maisy Edwards* Class: *2A* Date: *16/10* *23/6*

Assessment: Addition Across 10 – Facts Covered

+	0	1	2	3	4	5	6	7	8	9	10
0											
1											
2										2 + 9	
3									3 + 8	*MTAT* 3 + 9	
4							*10+1* 4 + 7	4 + 8	4 + 9		
5						5 + 6	5 + 7	*MTAT* 5 + 8	5 + 9		
6					6 + 5	*D* 6 + 6	*MTAT* 6 + 7 *NO*	6 + 8	6 + 9		
7				7 + 4	*MTAT* 7 + 5	7 + 6	*D* 7 + 7	*MTAT* 7 + 8 *NO*	7 + 9		
8			*10+1* 8 + 3	8 + 4	8 + 5	*MTAT* 8 + 6	8 + 7	*D* 8 + 8	8 + 9		
9		9 + 2	9 + 3	*MTAT* 9 + 4	9 + 5	9 + 6	*MTAT* 9 + 7	9 + 8	*D* 9 + 9		
10											

Strategies observed

Make 10 and Then Addition ✓

Doubles and Near Doubles D ✓ NO ✗ ✓ HD ✗
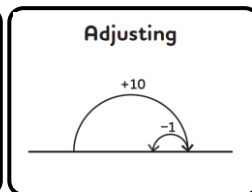
Adjusting +10 −1 ✗ from 10 ✓

Observation Notes

<u>Very</u> quick on all doubles.
Used adjusting for 4 + 7. 8 + 3 (1 more than 10)
Used make 10 and then for all others (incl near doubles/hidden doubles).
Always chose most efficient way using commutativity.
Was slow at make 10 and then – needs to just practice for fluency.
Not using near doubles at all on own – when said "Can I use 6 + 6 to help me?" could quickly calc 6 + 7 but still needs that strat prompting.

Now using near doubles for relevant facts.
Using make 10 and then for rest.
Much quicker at applying make 10 and then.

Follow-up plan

More fluency practice needed.
Prompt 'remember near doubles' at start of practice sessions.

Name Maisy Edwards Class 2A Date 16/10 23/6

Assessment: Subtraction Across 10 – Facts Covered

-	0	1	2	3	4	5	6	7	8	9	10

//

odd no. neighbours

11			11 – 2	11 – 3	MT AT 11 – 4	11 – 5	11 – 6	11 – 7	11 – 8	11 – 9
12				MTAT 12 – 3	12 – 4	12 – 5	MTAT 12 – 6 [1]	12 – 7	12 – 8	12 – 9
13					13 – 4	MTAT 13 – 5	13 – 6	13 – 7	MTAT 13 – 8	13 – 9
14						14 – 5	MTAT 14 – 6	MTAT 14 – 7 H	14 – 8	14 – 9
15							15 – 6	15 – 7	15 – 8	MTAT 15 – 9
16								MTAT 16 – 7	MTAT 16 – 8 H	16 – 9
17									17 – 8	17 – 9
18										MTAT 18 – 9
19
20

Strategies observed

Make 10 and Then Subtraction ✓

Doubles and Near Doubles D X ✓

Adjusting +10 –1

Observation Notes

Used MTAT for all except 11 - 9.
No halves recognised (v quick at doubles facts but not recognising can use these for halves)
MTAT is fairly slow still.

Now using halves for relevant facts.
Speed in MTAT has improved

Follow-up plan

Prompt to reference halves facts on classroom wall before practice so can pick these out.
Class mixed fact practice – prompt "what known fact can I used to solve this" for halves facts.
More MTAT practice to improve fluency.

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8 + 3	8 + 6	9 + 7	3 + 9
9 + 4	4 + 7	5 + 8	9 + 9
7 + 5	6 + 7	7 + 8	
6 + 6	7 + 7	8 + 8	

Print, laminate, cut

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12 - 3	14 - 6	16 - 8	
11 - 4	14 - 7	11 - 9	
13 - 5	16 - 7	15 - 9	
12 - 6	13 - 8	18 - 9	

Print, laminate, cut

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