Reviewing and improving teacher-written assessments

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Primary & EC Mathematics Education Conference

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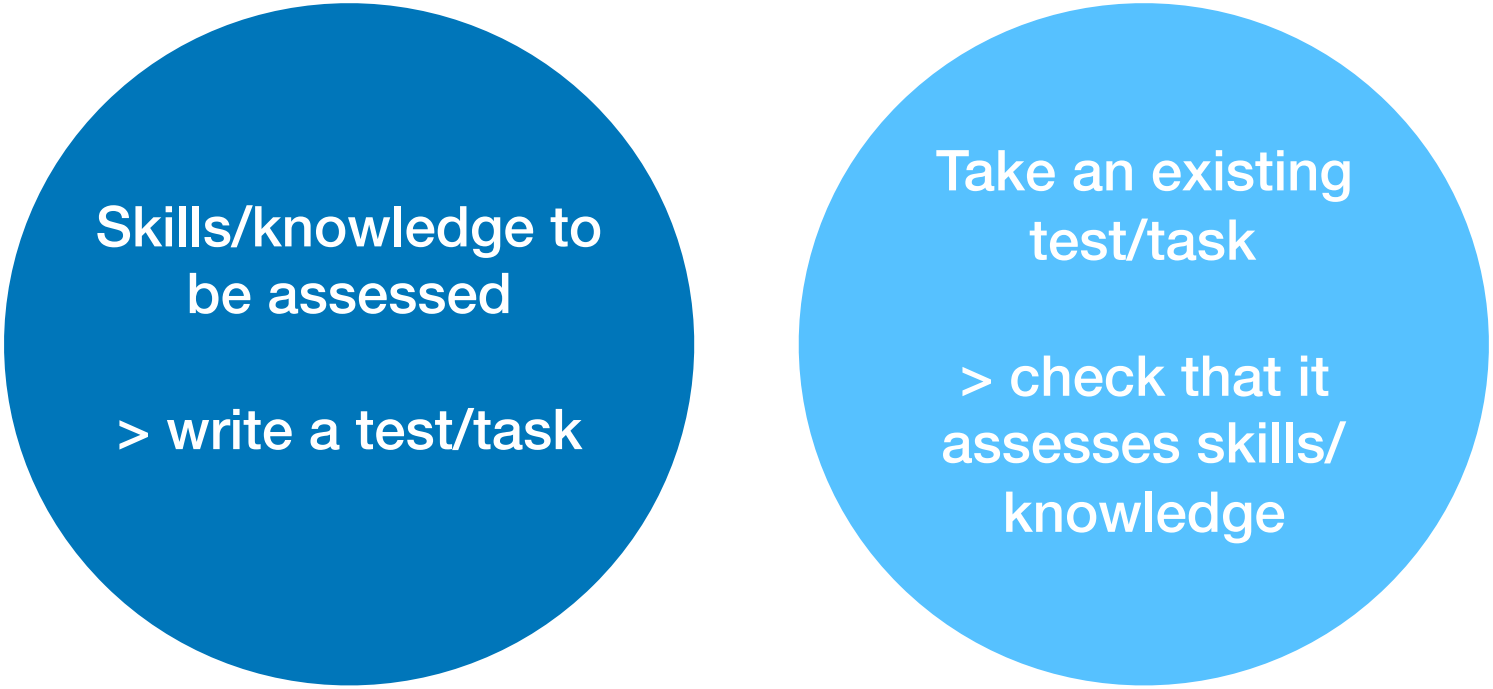
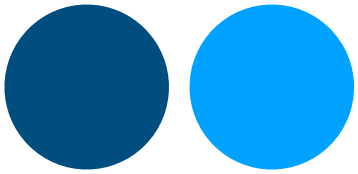
Teacher-written tests

Low-stakes teacher-written tests





3 minutes: Partner discussion

What does teacher test-writing currently look like in your context?

You’re already deep into this work.

Today is about getting clarity on quality.

Take an existing test/task

> check that it assesses the skills/ knowledge

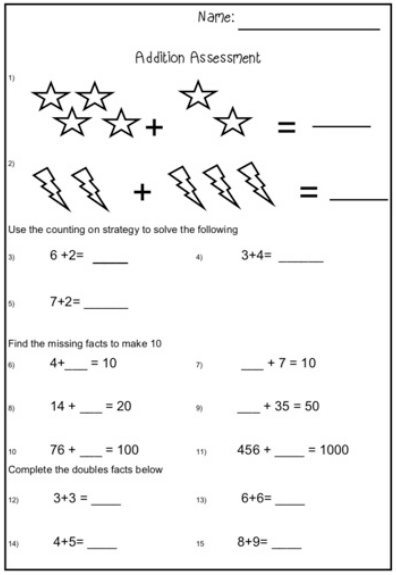
Take an existing test/task

> check the extent to which the data will be reliable

Reliability of data

Validity of inferences

Teachers need skills/knowledge to consider this relationship



Name: _____

Addition Assessment

1) ☆☆☆☆ + ☆☆ = ____

2) ⚡⚡ + ⚡⚡⚡ = ____

Use the counting on strategy to solve the following

3) 6 +2= ____ 4) 3+4= _____

5) 7+2= _____

Find the missing facts to make 10

6) 4+___ = 10 7) ___ + 7 = 10

8) 14 + ___ = 20 9) ___ + 35 = 50

10) 76 + ___ = 100 11) 456 + ____ = 1000

Complete the doubles facts below

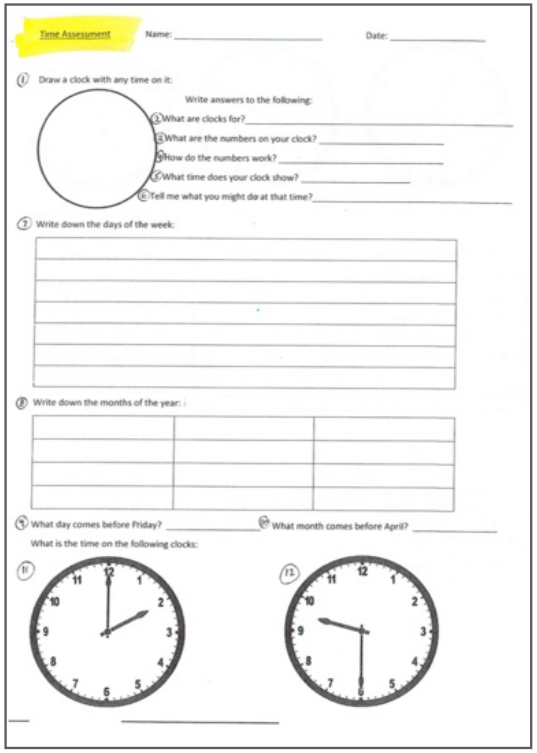
12) 3+3 = ____ 13) 6+6= ____

14) 4+5= ____ 15 8+9= ____

Reliability of data

Validity of inferences

3 minutes: What is this test assessing?


Time Assessment

Name: _____ Date: _____

1. Draw a clock with any time on it:

Write answers to the following:

2. What are clocks for? _____
3. What are the numbers on your clock? _____
4. How do the numbers work? _____
5. What time does your clock show? _____
6. Tell me what you might do at that time? _____

7. Write down the days of the week:

8. Write down the months of the year: :

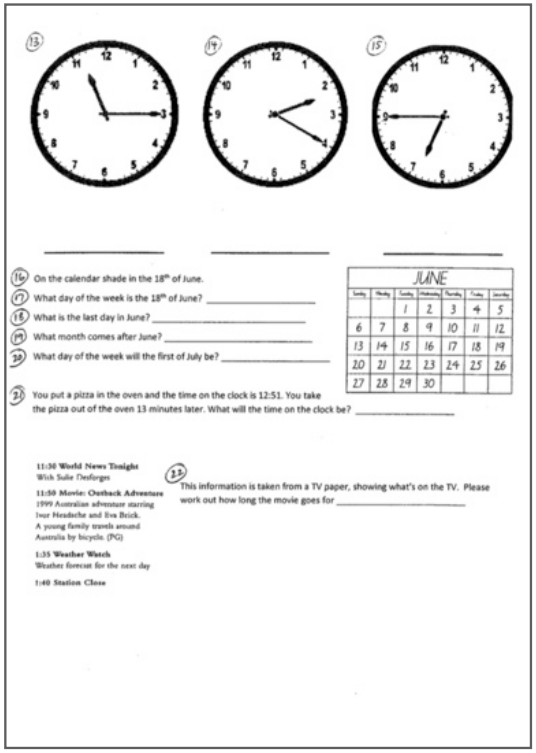
9. What day comes before Friday? _____ 10. What month comes before April? _____

What is the time on the following clocks:

11.

12.

_____ _____


13.

14.

15.

_____ _____ _____

16. On the calendar shade in the 18th of June.
17. What day of the week is the 18th of June? _____
18. What is the last day in June? _____
19. What month comes after June? _____
20. What day of the week will the first of July be? _____

JUNE

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

21. You put a pizza in the oven and the time on the clock is 12:51. You take the pizza out of the oven 13 minutes later. What will the time on the clock be? _____

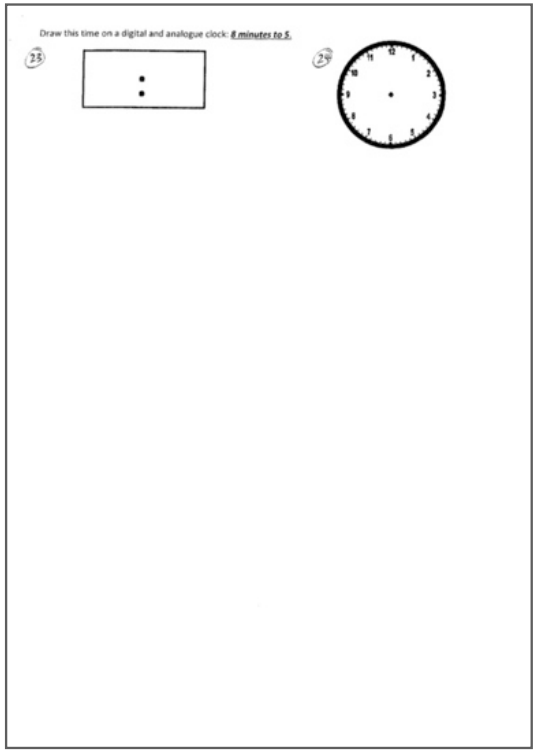
11:30 World News Tonight
With Suke Desforges

11:50 Movie: Outback Adventure
1999 Australian adventure starring Ivor Headache and Eva Brick. A young family travels around Australia by bicycle. (PG)

1:35 Weather Watch
Weather forecast for the next day

1:40 Station Close

22. This information is taken from a TV paper, showing what's on the TV. Please work out how long the movie goes for _____


Draw this time on a digital and analogue clock: ***8 minutes to 5.***

23.

24.

We have general ideas about what we are testing.

Now let's determine the exact skills being assessed.

In pairs, match each skill to a test item.

e on a calendar

Reads 2.00 on a clock face

Writes months of the year

Shades single da

Names day before Friday

Shades single date on a calendar

Reads 6.45 on a clock face

on a clock face

Reads 2.00 on a clock face

Writes months of the year

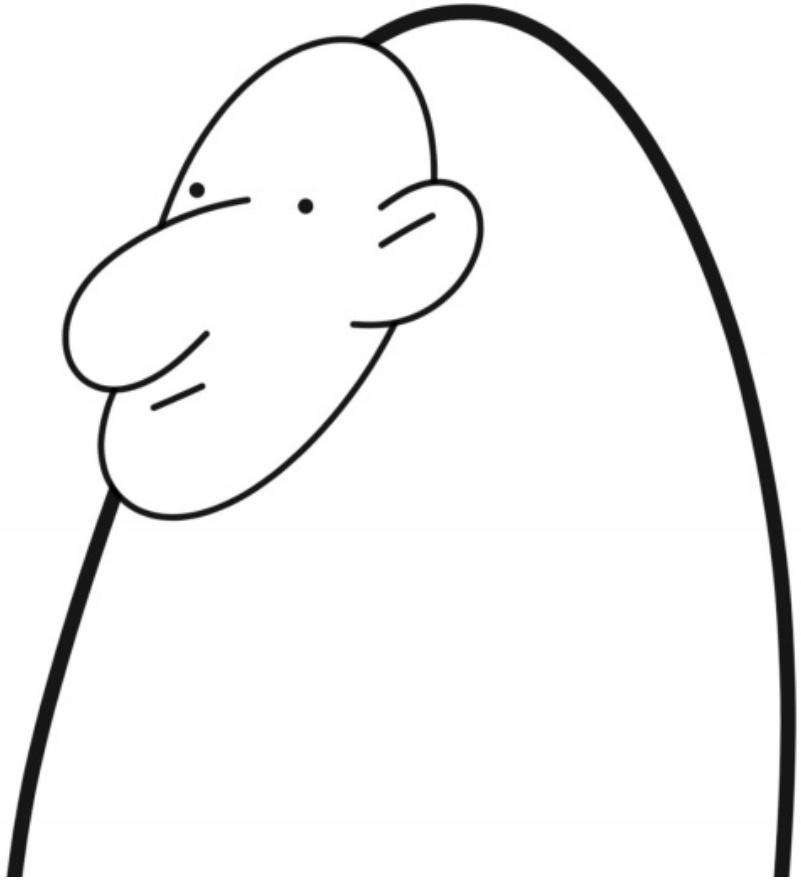
Names day befo

Names day before Friday

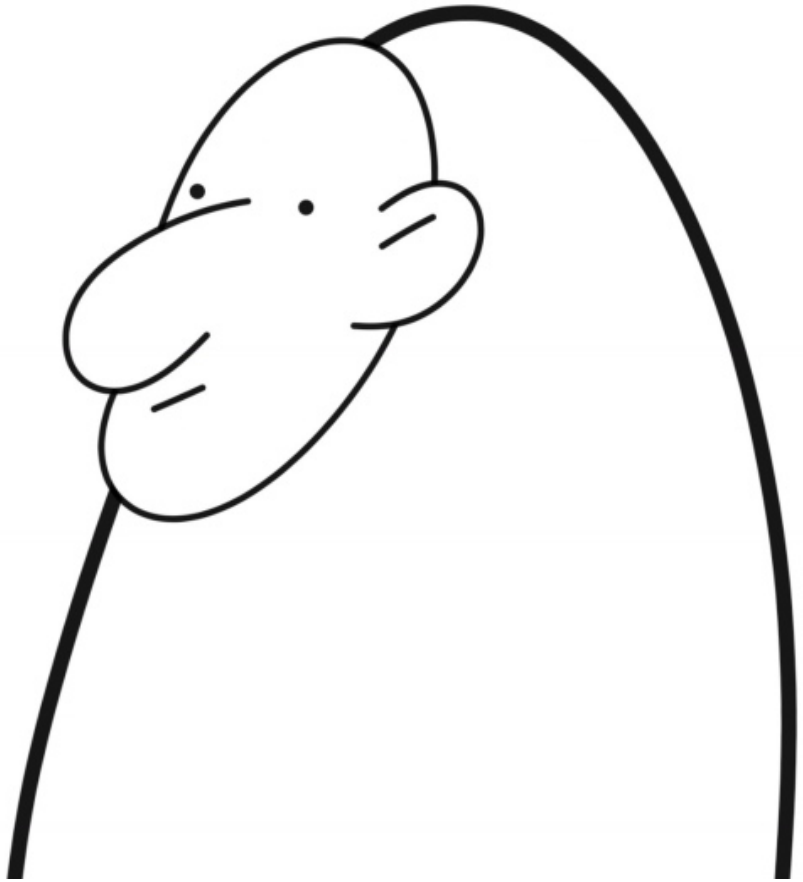
Shades single date on a calendar

Reads 6.45 on a clock face

Hunch about quality?



A close look at a test can support a range of hunches.



Data analysis tells us more.

		1. Draws time on an analogue clock	2. States use of clock	3. Recalls numbers on clocks	4. Describes function of numbers on a clock	5. Reads time of clock (chosen by student)	6. Identifies activity linked to a time	7. Writes all days of the week	8. Writes months of the year	9. Names day before Friday	10. Names month before April	11. Reads 2.00 on a clock face	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	15. Reads 6.45 on a clock face	16. Shades single date on a calendar	17. Links date to a day given on calendar	18. Identifies last day of month on a calendar	19. Names month after June	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	22. Identifies duration between two given times	23. Represents 4.52 on a digital clock	24. Represents 4.52 on a clock face	Total
1																										
2	Gouri A																									0
3	Avia B																									0
4	Claudia C																									0
5	Samuel D																									0
6	Mitchell E																									0
7	Nayomey F																									0
8	Amy J																									0
9	Kate A																									0
10	Nathaniel L																									0
11	Aaliyah P																									0
12	Maya P																									0
13	Hamish W																									0
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

1		1. Draws time on an analogue clock	2. States use of clock	3. Recalls numbers on clocks	4. Describes function of numbers on a clock	5. Reads time of clock (chosen by student)	6. Identifies activity linked to a time	7. Writes all days of the week	8. Writes months of the year	9. Names day before Friday	10. Names month before April	11. Reads 2.00 on a clock face	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	15. Reads 6.45 on a clock face	16. Shades single date on a calendar	17. Links date to a day given on calendar	18. Identifies last day of month on a calendar	19. Names month after June	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	22. Identifies duration between two given times	23. Represents 4.52 on a digital clock	24. Represents 4.52 on a clock face	Total
2	Gouri A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	**17**
3	Avia B	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	**17**
4	Claudia C	1	1	1	0	1	0	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	0	0	**16**
5	Samuel D	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	**21**
6	Mitchell E	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	**8**
7	Nayomey F	1	1	1	1	1	1	1	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	**11**
8	Amy J	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	1	0	0	0	0	0	**13**
9	Kate A	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	**10**
10	Nathaniel L	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	0	**18**
11	Aaliyah P	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	**14**
12	Maya P	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	0	**20**
13	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	0	**16**
14		**11**	**12**	**11**	**6**	**8**	**9**	**12**	**10**	**12**	**10**	**10**	**6**	**4**	**4**	**3**	**11**	**8**	**10**	**11**	**4**	**4**	**0**	**4**	**1**	

Easiest items → Hardest items

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	21
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	20
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	18
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	17
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	17
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	16
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	16
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	14
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	13
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	11
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	10
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8
14		12	12	12	11	11	11	11	10	10	10	10	9	8	8	6	6	4	4	4	4	4	3	1	0	

Most competent

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
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3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	**20**
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	**18**
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	**17**
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	**17**
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	**16**
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	**16**
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	**14**
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**13**
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**11**
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	**10**
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**8**
14		**12**	**12**	**12**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**4**	**3**	**1**	**0**	

Least competent

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What do we look for at first glance?

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
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4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	**18**
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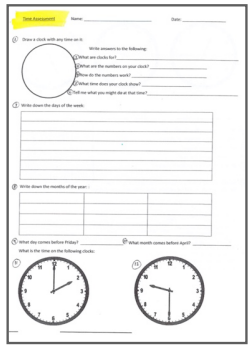
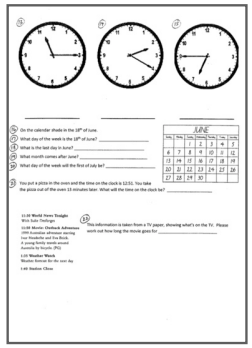
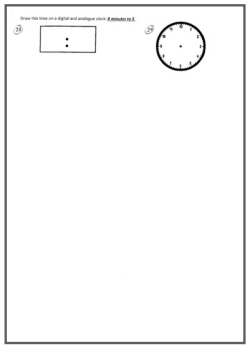
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	**17**
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	**16**
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	**16**
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	**14**
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**13**
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**11**
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	**10**
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**8**
14		**12**	**12**	**12**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**4**	**3**	**1**	**0**	







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3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	20
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	18
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	1	0	0	17
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	17
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	16
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	16
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10	Amy J	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	13
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	11
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	10
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	8
14		12	12	12	11	11	11	11	10	10	10	10	9	8	8	6	6	4	4	4	4	4	3	1	0	

We will now consult <u>both</u> the test and the data.

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Quick-fire discussion questions

1. From a first glance, does the data look “reliable”? Why/why not?
2. This was a pre-test. Was it too easy or too hard for this cohort? Why?
3. What does the data tell you about the students?
4. What doesn’t this data tell you about the students?
5. Identify 2 students who you think you have valuable information about. What do you know about them that would inform your teaching?
6. Identify one test item that you thought was problematic. To what extent does the data support your thinking?
7. Compare the data of Claudia and Hamish. What do you notice?

Let's review the discussion questions

1		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	**21**
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	**20**
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	**18**
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	**17**
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	**17**
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	**16**
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	**16**
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	**14**
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**13**
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**11**
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	**10**
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**8**
14		**12**	**12**	**12**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**4**	**3**	**1**	**0**	

Mostly affirmed Teach Teach

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	**21**
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	**20**
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	**18**
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	**17**
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	**17**
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	**16**
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	**16**
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	**14**
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**13**
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**11**
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	**10**
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**8**
14		**12**	**12**	**12**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**4**	**3**	**1**	**0**	

Affirmed Teach Teach

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	**21**
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	**20**
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	**18**
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	**17**
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	**17**
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	**16**
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	**16**
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	**14**
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**13**
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**11**
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	**10**
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**8**
14		**12**	**12**	**12**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**4**	**3**	**1**	**0**	

Affirmed | Teach | Teach | Can't do

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	21
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	20
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	18
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	17
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	17
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	16
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	16
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	14
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	13
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	11
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	10
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8
14		12	12	12	11	11	11	11	10	10	10	10	9	8	8	6	6	4	4	4	4	4	3	1	0	

A Guttman chart = new pair of glasses

		2. States use of clock	7. Writes all days of the week	9. Names day before Friday	1. Draws time on an analogue clock	3. Recalls numbers on clocks	16. Shades single date on a calendar	19. Names month after June	8. Writes months of the year	10. Names month before April	11. Reads 2.00 on a clock face	18. Identifies last day of month on a calendar	6. Identifies activity linked to a time	5. Reads time of clock (chosen by student)	17. Links date to a day given on calendar	4. Describes function of numbers on a clock	12. Reads 9.30 on a clock face	13. Reads 11.15 on a clock face	14. Reads 2.20 on a clock face	20. Links date to a day (not given on calendar)	21. Adds time across an hour (12.51 + 13)	23. Represents 4.52 on a digital clock	15. Reads 6.45 on a clock face	24. Represents 4.52 on a clock face	22. Identifies duration between two given times	Total
2	Samuel D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	21
3	Maya P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	20
4	Nathaniel L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	18
5	Gouri A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	0	17
6	Avia B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	17
7	Claudia C	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	16
8	Hamish W	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	16
9	Aaliyah P	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	14
10	Amy J	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	13
11	Nayomey F	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	11
12	Kate A	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	10
13	Mitchell E	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8
14		12	12	12	11	11	11	11	10	10	10	10	9	8	8	6	6	4	4	4	4	4	3	1	0	

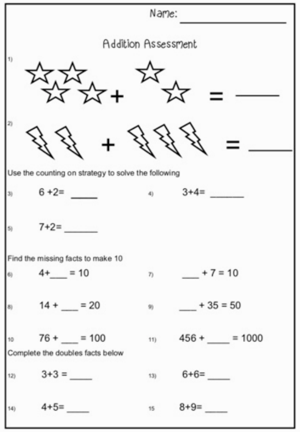
3 take-aways!

1. Develop assessments collegiately. Talk across levels.
2. Map out the big picture, then improve one test (or task) at a time.
3. If possible, consider skills/knowledge first, then develop test material.

Grade 1/2 Pre-test in Addition: Skills Audit

Items	Skills
1	Uses visual representation to solve 4 + 2
2	Uses visual representation to solve 2 + 3
3	Uses counting-on to solve 6 + 2
4	Uses counting-on to solve 3 + 4
5	Uses counting-on to solve 7 + 2
6	Finds missing number using bridge to 10 (4 + X = 10)
7	Finds missing number using bridge to 10 (X + 7 = 10)
8	Finds missing number using bridge to 20 (14 + X = 20)
9	Uses partitioning strategy to solve to tens (X + 35 = 50)
10	Uses partitioning strategy to solve to hundred (76 + X = 100)
11	Uses partitioning strategy to solve to thousand (456 + X = 1000)
12	Solves doubles fact (3 + 3)
13	Solves doubles fact (6 + 6)
14	Solves near doubles fact (4 +5)
15	Solves near doubles fact (8 + 9)
16	Uses numberline to solve 4 + 11
17	Uses numberline to solve 13 + 5
18	Labels numberline to solve 35 + 24
19	Finds missing addend to solve 3 + X = 7
20	Finds missing addend to solve 12 + X = 18
21	Finds missing addend to solve X + 5 = 9
22	Solves 6 + 2 from a worded problem
23	Uses vert addition to solve 23 + 11 (no regrouping)
24	Uses vert addition to solve 43 + 25 (no regrouping)
25	Uses vert addition to solve 56 + 32 (no regrouping)
26	Uses vert addition to solve 234 + 152 (no regrouping)
27	Uses vert addition to solve 541 + 423 (no regrouping)
28	Solves 4 + 3 + 7
29	Solves 10 + 6 + 8
30	Uses vert addition to solve 25 + 37 (regrouping)
31	Uses vert addition to solve 67 + 26 (regrouping)
32	Uses vert addition to solve 28 + 39 (regrouping)
33	Uses vert addition to solve 246 + 128 (regrouping in units)
34	Uses vert addition to solve 378 + 246 (regrouping in units/tens)
35	Solves 24 + 25 from a worded problem (no regrouping)
36	Solves 36 + 52 from a worded problem (no regrouping)

>


Name: ______

Addition Assessment

Use the counting on strategy to solve the following

6 +2= ____ 3+4= ____

7+2= ____

Find the missing facts to make 10

4+___ = 10 ___ + 7 = 10

14 + ___ = 20 ___ + 35 = 50

76 + ___ = 100 456 + ___ = 1000

Complete the doubles facts below

3+3 = ____ 6+6= ____

4+5= ____ 8+9= ____

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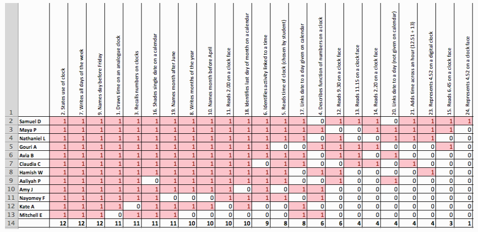

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Validity of inferences

So you've written the test

Grade 1/2 Pre-test in Addition: Skills Audit

Items	Skills
1	Uses visual representation to solve 4 + 2
2	Uses visual representation to solve 2 + 3
3	Uses counting-on to solve 6 + 2
4	Uses counting-on to solve 3 + 4
5	Uses counting-on to solve 7 + 2
6	Finds missing number using bridge to 10 (4 + X = 10)
7	Finds missing number using bridge to 10 (X + 7 = 10)
8	Finds missing number using bridge to 20 (14 + X = 20)
9	Uses partitioning strategy to solve to tens (X + 35 = 50)
10	Uses partitioning strategy to solve to hundred (76 + X = 100)
11	Uses partitioning strategy to solve to thousand (456 + X = 1000)
12	Solves doubles fact (3 + 3)
13	Solves doubles fact (6 + 6)
14	Solves near doubles fact (4 +5)
15	Solves near doubles fact (8 + 9)
16	Uses numberline to solve 4 + 11
17	Uses numberline to solve 13 + 5
18	Labels numberline to solve 35 + 24
19	Finds missing addend to solve 3 + X = 7
20	Finds missing addend to solve 12 + X = 18
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22	Solves 6 + 2 from a worded problem
23	Uses vert addition to solve 23 + 11 (no regrouping)
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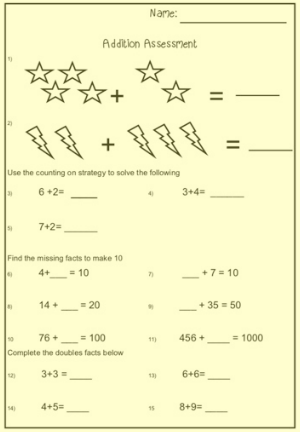
25	Uses vert addition to solve 56 + 32 (no regrouping)
26	Uses vert addition to solve 234 + 152 (no regrouping)
27	Uses vert addition to solve 541 + 423 (no regrouping)
28	Solves 4 + 3 + 7
29	Solves 10 + 6 + 8
30	Uses vert addition to solve 25 + 37 (regrouping)
31	Uses vert addition to solve 67 + 26 (regrouping)
32	Uses vert addition to solve 28 + 39 (regrouping)
33	Uses vert addition to solve 246 + 128 (regrouping in units)
34	Uses vert addition to solve 378 + 246 (regrouping in units/tens)
35	Solves 24 + 25 from a worded problem (no regrouping)
36	Solves 36 + 52 from a worded problem (no regrouping)

>


Name: ____

Addition Assessment

1) + = ____

2) + = ____

Use the counting on strategy to solve the following

3) 6 +2= ____ 4) 3+4= ____

5) 7+2= ____

Find the missing facts to make 10

6) 4+___ = 10 7) ___ + 7 = 10

8) 14 + ___ = 20 9) ___ + 35 = 50

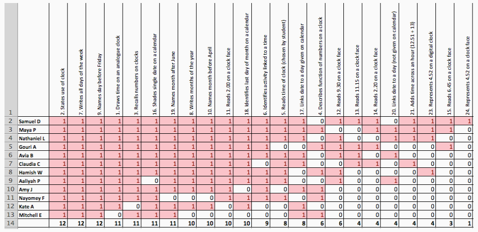
10 76 + ___ = 100 11) 456 + ___ = 1000

Complete the doubles facts below

12) 3+3 = ____ 13) 6+6= ____

14) 4+5= ____ 15 8+9= ____

>



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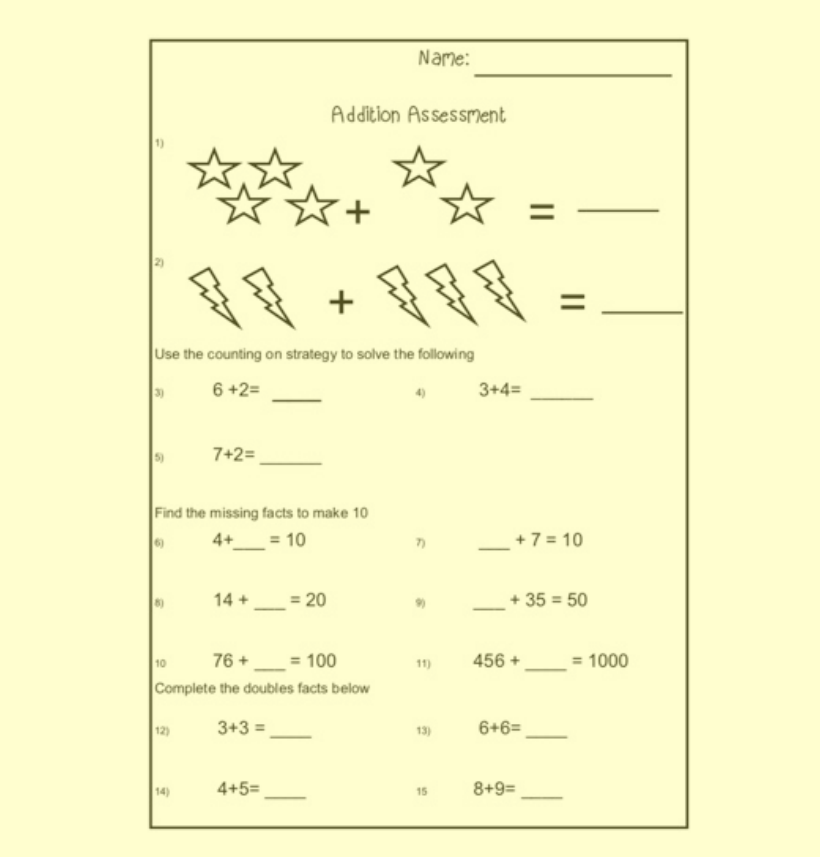
Validity of inferences

Let's examine it at the **item-level** and identify possible improvements



Name: _____

Addition Assessment

1) ☆☆☆☆ + ☆☆ = ____

2) ⚡⚡ + ⚡⚡⚡ = ____

Use the counting on strategy to solve the following

3) 6 +2= ____

4) 3+4= _____

5) 7+2= _____

Find the missing facts to make 10

6) 4+___ = 10

7) ___ + 7 = 10

8) 14 + ___ = 20

9) ___ + 35 = 50

10) 76 + ___ = 100

11) 456 + ____ = 1000

Complete the doubles facts below

12) 3+3 = ____

13) 6+6= ____

14) 4+5= ____

15) 8+9= ____

Spacing
Counting on?

Use the counting on strategy to solve the following

3) 6 +2= _____

4) 3+4= _____

5) 7+2= _____

Make 10?

Find the missing facts to make 10

6) $4+\_\_\_ = 10$

7) $\_\_\_ + 7 = 10$

8) $14 + \_\_\_ = 20$

9) $\_\_\_ + 35 = 50$

10 $76 + \_\_\_ = 100$

11) $456 + \_\_\_\_ = 1000$

Alignment

23)
$$\begin{array}{r} 23 \\ +\ 11 \\ \hline \end{array}$$

24)
$$\begin{array}{r} 43 \\ +\ 25 \\ \hline \end{array}$$

25)
$$\begin{array}{r} 56 \\ +\ 32 \\ \hline \end{array}$$

26)
$$\begin{array}{r} 234 \\ +\ 152 \\ \hline \end{array}$$

27)
$$\begin{array}{r} 541 \\ +\ 423 \\ \hline \end{array}$$

35)

1/2S has 24 students and 1/2D has 25 students. How many student are there altogether?

1/2 looks like half
Consistency of item wording

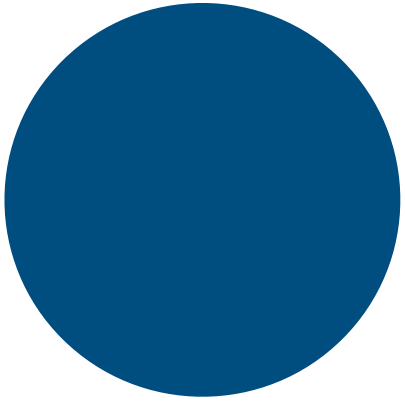
36)

Hakea has 36 house points. They get 52 more. How many house points do they have?

Realistic worded problems

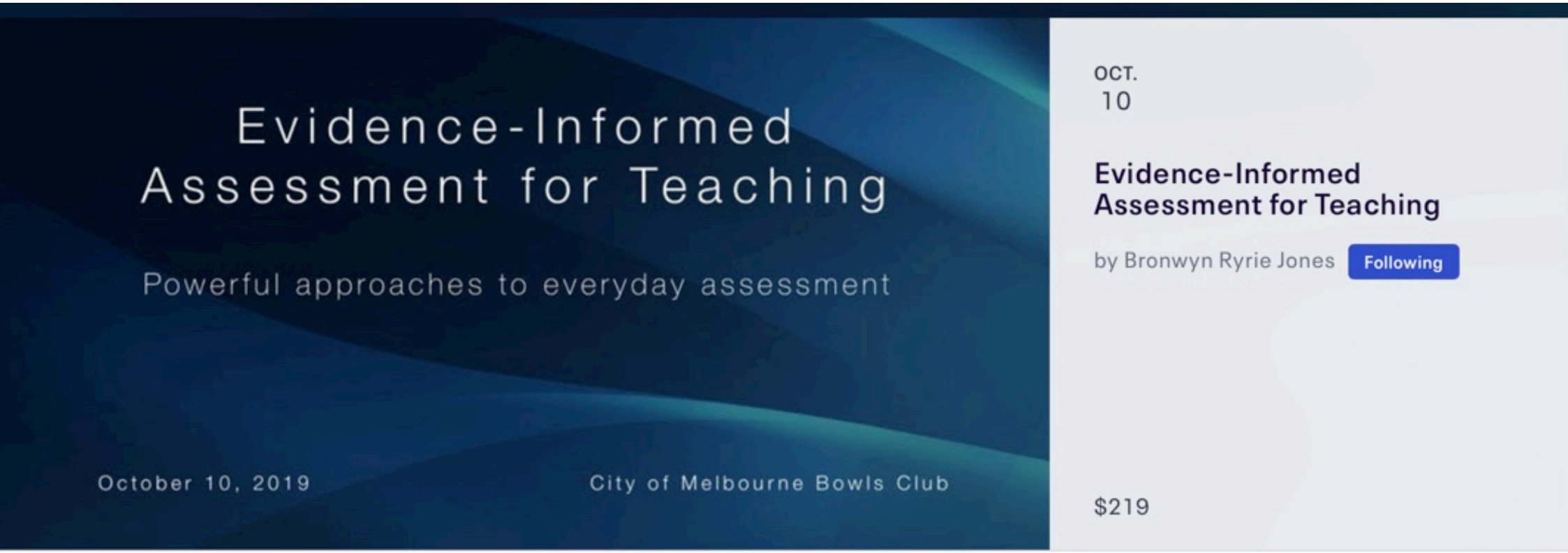
38)

Ben had 127 paint brushes. He found 598 more. How many paint brushes does Ben have?



Reflections for practice

What small improvements can you make to your test writing?



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