Hello,

I am so excited that you are downloading and trying out the new version of the Math Running Record. I have spent several years developing and piloting Math Running Records around the country. Today, people around the world are using them! I want to encourage everyone to read the book! You can get it online in several places. Routledge the publisher even has a 20% discount code!

> **Book Discount Code: FLA22**
>
> https://www.routledge.com/Math-Running-Records-in-Action-A-Framework-for-Assessing-Basic-Fact-Fluency/Newton/p/book/9781138927643
>
> john.defalco@taylorandfrancis.com (for larger quantities contact)

It is important to read the book to understand the framework of fluency and the reasoning and research behind Math Running Records. Fluency is a 4-legged stool, including accuracy, flexibility, efficiency and automaticity. Math Running Records helps you to figure out where your students are in terms of learning the basic facts (0-20 for addition and subtraction and 0 - 100 for multiplication and division). It tells you what strategies they know, what strategies they are struggling with and most importantly where to begin instruction. It also tells you what to do once you get the information. Creating activities for purposeful practice in each student's zone of proximal development is extremely important.

I have updated the first version of the Math Running Record based on the input of many different educators. Terri Ruyter, Janice Riggs, Christine Mulgrave King, and Alison Mello have helped me so much during the early pilots and the thinking along the way. Ann Elise Record has done a tremendous amount of work thinking about how to add different parts to the Math Running Record, especially the additions to Part 2, where we now very clearly record whether the student does not have the strategy, is emerging (meaning they are getting it but haven't mastered it) or yes they understand that strategy. I am very thankful and grateful that Ann Elise Record has spent endless hours with me thinking about the additions to Part 2. I have also added a section which is to be filled out at the end where everything is summarized. Again, Ann Elise Record helped to put this together.

I want to especially thank Ann Elise for starting a Math Running Records Facebook page, whose community just keeps growing! She is doing great work with videos and helping to organize games and activities that the community is contributing. (https://www.facebook.com/search/top/?q=math%20running%20records) and also there is a padlet! (https://www.tinyurl.com/MathRR)

I do *Professional Development on Math Running Records* at schools around the country and at seminars and conferences. Contact us today about coming to your school! We can do district and school level teacher workshops, grade level trainings, train the trainer and more! Here is information to contact me with any questions, comments or suggestions. I will skype in for 45 minutes to any group that is doing a book study on Math Running Records, for free. This offer applies to any of my books.

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I am also an avid pinner with several math fluency boards: https://www.pinterest.com/drnicki7/
Blogger: https://guidedmath.wordpress.com/
Youtuber: Nicki Newton   Twitter: @drnickimath
We have a Math Running Records Course Online!:
https://drnickinewton.thinkific.com/courses/math-running-records-in-action and over 20
other courses as well! For Credit and non-credit: https://www.drnickinewton.com/classes/

Happy Mathing,
Dr. Nicki

Instructions (PLEASE READ BEFORE ADMINISTERING-This is a quick guide).[It is highly recommended to read the book and watch the videos before you start].
When administering part 1 these are the important things:

1. Be sure to tell the students that you might not do all the problems. This lowers the anxiety for students who feel bad if they don't get to finish the test.

2. Remember, you are not trying to give the whole test. The point of the assessment is to find out where students are doing well and where they are stuck. You stop when they start struggling. So for instance, if a student misses a problem but self-corrects and they self-correct by counting on their fingers, code it and stop if you feel like that is where they struggle. When they miss a problem, that should raise a question. Was it a silly error, or did they really not know the problem? If they miss the next problem stop the test. If they don't miss the next problem keep going, and at the end if you feel like it was a silly error, go back and ask that question again. If students get a problem correct, but they are using an inefficient strategy (such as counting all or counting on) stop. This lets you know that this is where students need to work towards fluency.

3. When students get stuck, be sure to ASK them what they do when they get stuck. How do they solve the problem? If they say they solve it with pencil and paper, give it to them. If they say they use counters, give it to them. If they can't do it, just move on. BE SURE to ask students if there is any other problems on the page that they can solve. Sometimes, students know random facts.

4. Remember that you are giving a Math Running Record to find the instructional starting point. You are looking to see where students are struggling. Maybe they got the problems correct, but they are *counting all* or *counting on* to figure out facts within 10. You then know, that they need more efficient strategies. You should start with counting on by 1,2, and 3. Or maybe students did really well and then they started finger counting when they got to doubles plus 1. This should alert you to explore more about doubles plus 1. You will then go to Part 2 and ask questions up to that point. You will see exactly what students are doing and be able to decide on the instructional strategy to work with from that point.

5. After you find the point of instruction, you want to set up a series of experiences for students to work with that strategy. You should make exact notes of what students say when they get something incorrect so that you can analyze the error pattern. You want students to work through concrete, pictorial and abstract activities. This is the key part. The Math Running Record is the assessment that tells you where to start. You must do the work based on the information you get from the assessment. The Record alone is just the indicator of where to do the work.

In summation, Part 1 is a general overview. It allows you to see what students are doing, how they approach the math and what they are doing when they get stuck. Part 2 is the deeper dive. It allows you to ask questions and listen to what students are saying they are doing and what they are actually doing. It allows you to see what strategies students are using. It allows you to listen to what they are saying. It allows you to look for patterns in their mathematical behaviors. What errors are students making? What misunderstandings and misconceptions do students hold? Where are there inconsistencies in student thinking? It is important to record the incorrect responses so that you know exactly what students did and then can better scaffold their learning. Part 2 allows you to think about and write about what students are doing. Part 3 gives you a small peak into a student's mathematical disposition. We know from the research that the student's mathematical disposition impacts how they feel about math and how they participate as a mathematician.

A Word about Coding

Coding has been a part of the research on mathematical fluency for a long time. Codes help us to describe what students are doing. Use the codes that are listed. Do not change them. You need consistency across your school and district with the codes. These codes are built based on the historical codes, however adapted to meet the framework for the Math Running Record. Here is a brief explanation of the codes:

Part 1: In part 1 you are looking at the 4 aspects of fluency: flexibility, efficiency, accuracy and automaticity. So, the first codes give you a general overview of how students are approaching number combinations. You are only getting a preliminary look at how students are approaching problems in part 1. You can go back after you finish part 1 and ask any questions about it that you have. For example, you might ask a student: "I noticed that you were thinking in your head to do 2 + 6. Can you tell me what that sounded like? Say out loud how you did it." Also, you might have noticed that students counted on their fingers, but you are not sure where they

started from. You should definitely ask them, "I noticed that you counted on your fingers, which number did you start with?"

There are the codes:
Codes for Automaticity:
a – Automatic (within 3 seconds)
5s – A bit longer, it is used for students who do not know their facts automatically but only take a few seconds to retrieve facts
pth – Prolonged thinking time is for students who get stuck and/or take a really long time to answer. They might eventually give the correct answer or they might pass or give an incorrect answer. Also record if they say it automatically and it is incorrect.

Codes for Flexibility
These codes allow us to describe what students are doing. Remember that when students are stuck, they can ask for counters, number lines, or paper and pencil to do their work. This is completely acceptable because one of the goals of the Math Running Record is to determine whether or not students can solve the problem by any means.

ca – count all with fingers, drawings, manipulatives (i.e. for 15 ÷ 5 sounds like 1,2,3,4,5…6,7,8,9,10,….11, 12,13,14,15 or counting back those as well)
skf - skip counted on fingers (i.e. for 15 ÷ 5 sounds like 5, 10, 15 using fingers to keep track)
coh – counted on in head (i.e. for 25 ÷ 5 sounds like 4 x 5 is 20….21, 22, 23, 24,25)
skh – skip counted in head (i.e. for 25 ÷ 5 sounds like 5, 10, 15, 20, 25 usually while bobbing head)
urm – using related multiplication fact (i.e. for 25 ÷ 5 sounds like I know 5 x 5 = 25)
asc – attempted to self-correct (students tried to fix their thinking but are still incorrect)
sc - self- corrected
dk – didn't know

Codes for Efficiency
These codes help us to describe what types of strategies students are using.

- 0 – doesn't know
- 1 – counting strategies by ones or skip counting using fingers, drawings or manipulatives
- 2 - mental math/solving in head
- 3 - using known facts and strategies
- 4M - automatic recall from memory
- 4 – automatic recall and students have number sense
  - For both the automaticity and flexibility codes, you might take notes on these while doing part 2, especially if something stands out for you.

*In part 2 you can record the automaticity and flexibility codes so that you have more information. This can help inform the overall analysis.

*The difference between 4M and 4 is that you have some students who can give you the answers to problems but everything is memorized and they have no number sense. You will only be able to figure this out when you get to Part 2 and start asking questions about strategies.

Division Running Record Recording Sheet

Student: _____ Teacher: _____ Date: _____

Part 1	Codes: What do you notice?	Initial Observation of Strategies	Data Code Names
$0 \div 3$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D0 – divide 0 by a #
$7 \div 1$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D1 – divide by 1
$4 \div 4$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	DNN – divide a number by itself
$18 \div 2$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D2 – divide by 2
$14 \div 7$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	DH – divide a number by half
$45 \div 5$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D5 - divide by 5
$50 \div 10$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D10 – divide by 10
$27 \div 3$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D3 – divide by 3
$42 \div 6$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D6 – divide by 6
$28 \div 4$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D4 – divide by 4
$64 \div 8$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D8 – divide by 8
$54 \div 9$ a 5s pth	ca skf coh skh urm sc asc dk wo	0 1 2 3 4M 4	D9 divide by 9

Codes for Automaticity:	Types of Strategies	Strategy Levels
a -automatic 5s- 5 seconds pth- prolonged thinking time	ca – count all with fingers, drawings, manipulatives skf - skip counted on fingers coh – counted on in head skh – skip counted in head urm – using related multiplication fact sc - self- corrected asc – attempted to self-correct dk - didn't know wo – wrong operation	0 – doesn't know 1 – counting strategies by ones or skip counting using fingers, drawings or manipulatives 2 - mental math/solving in head 3- using known facts and strategies 4M- automatic recall from memory 4 - automatic recall and students have number sense

Part 2: Flexibility/Efficiency

Teacher: We are now going to administer Part II of the Running Record. In this part of the Running Record we are going to talk about what strategies you use when you are solving basic division facts. I am going to tell you a problem and then ask you tell me about how you think about it. I am also going to ask you about some different types of facts. Take your time as you answer and tell me what you are thinking as you see and do the math. I am going to take notes so that I can remember everything that happened during this Running Record.

Dividing 0 by a number 0 ÷ 3	**Dividing by 1 7 ÷ 1**	**Dividing a Number by itself 4 ÷ 4**	**Dividing by 2 18 ÷ 2**
What happens when you divide zero by any number? ___ quotient is 0 ___ other ___ can't articulate For example, 0 ÷ 8 0 ÷ 1 0 ÷ 2 Do they know this strategy? No/Emerging/Yes D0 Level 0 1 2 3 4M 4	What happens when you divide a number by 1? _____ same # ___ other ___ can't articulate For example, 10 ÷ 1 5 ÷ 1 7 ÷ 1 Do they know this strategy? No/Emerging/Yes D1 Level 0 1 2 3 4M 4	What happens when you divide a number by itself? _____ always is 1 ___ other ___ can't articulate For example, 2 ÷ 2 8 ÷ 8 3 ÷ 3 Do they know this strategy? No/Emerging/Yes DNN Level 0 1 2 3 4M 4	What strategy do you use when you divide a number by 2? ___halving it ___ other ___ can't articulate For example, 10 ÷ 2 16 ÷ 2 12 ÷ 2 Do they know this strategy? No/Emerging/Yes D2 Level 0 1 2 3 4M 4
Dividing by Half 14 ÷ 7	**Dividing by 5 45 ÷ 5**	**Dividing by 10 50 ÷ 10**	**Dividing by 3 27 ÷ 3**
What strategy do you use when you see a problem like this? ___ relate to doubles ____ other ___ can't articulate For example, 8 ÷ 4 18 ÷ 9 16 ÷ 8 Do they know this strategy? No/Emerging/Yes DH Level 0 1 2 3 4M 4	What strategy do you use when you divide a number by 5? ___urm ___other ___ can't articulate For example, 15 ÷ 5 35 ÷ 5 50 ÷ 5 Do they know this strategy? No/Emerging/Yes D5 Level 0 1 2 3 4M 4	What strategy do you use when you divide a number by 10? ___urm ___other ___ can't articulate For example, 80 ÷ 10 20 ÷ 10 100 ÷ 10 Do they know this strategy? No/Emerging/Yes D10 Level 0 1 2 3 4M 4	What strategy do you use when you divide by 3? ___urm ___other ___ can't articulate For example, 18 ÷ 3 24 ÷ 3 12 ÷ 3 Do they know this strategy? No/Emerging/Yes D3 Level 0 1 2 3 4M 4

Dividing by 6 42 ÷ 6	Dividing by 4 28 ÷ 4	Dividing by 8 64 ÷ 8	Dividing by 9 54 ÷ 9	Dividing by 7 14 ÷ 7
If a friend did not know how to divide by 6, what would you tell them to do?	What strategy do you use when you divide by 4?	If a friend got stuck dividing by 8, what would you tell them to do?	What strategy do you use when you are dividing by 9?	What strategy do you use when you are dividing by 7?
___urm ___other ___ can't articulate	___urm ___other ___ can't articulate	___urm ___other ___ can't articulate	___urm ___other ___ can't articulate	___urm ___other ___ can't articulate
For example, 24 ÷ 6 54 ÷ 6 36 ÷ 6	For example, 36 ÷ 4 24 ÷ 4 16 ÷ 4	For example, 32 ÷ 8 48 ÷ 8 56 ÷ 8	For example, 63 ÷ 9 27 ÷ 9 72 ÷ 9	For example, 21 ÷ 7 56 ÷ 7 49 ÷ 7
Do they know this strategy? No/Emerging/Yes D6 Level 0 1 2 3 4M 4	Do they know this strategy? No/Emerging/Yes D4 Level 0 1 2 3 4M 4	Do they know this strategy? No/Emerging/Yes D8 Level 0 1 2 3 4M 4	Do they know this strategy? No/Emerging/Yes D9 Level 0 1 2 3 4M 4	Do they know this strategy? No/Emerging/Yes D7 Level 0 1 2 3 4M 4

Part 3	Question Prompts:
Do you like math? What do you find easy? What do you find tricky? What do you do when you get stuck?	That's interesting/fascinating: tell me what you did. That's interesting/fascinating: tell me how you solved it. That's interesting/fascinating: tell me what you were thinking. How did you solve this problem? Can you tell me more about how you solve these types of problems? What do you mean when you say _____? (i.e. ten friends/neighbor numbers etc.)

Instructional Response:
Fluency Focus areas (circle all that apply): flexibility   efficiency   accuracy   automaticity
What division strategy should the instruction focus on?

D0 D1 DNN D2 DH D5 D10 D3 D6 D4 D8 D9 D7
For their current instructional level, what is the predominant way in which students are arriving at the answers? 0 1 2 3 4M 4 _____
Overall, what is the way in which students calculated the answers?: 0 1 2 3 4M 4
Comments/Notes about gestures, behaviors, remarks:

Student Page

$0 \div 3$	$50 \div 10$
$7 \div 1$	$27 \div 3$
$4 \div 4$	$42 \div 6$
$18 \div 2$	$28 \div 4$
$14 \div 7$	$64 \div 8$
$45 \div 5$	$54 \div 9$

These are cards for Part 2. You can either ask the questions just verbally or show the students the expressions on cards.

0 ÷ 8	0 ÷ 1	0 ÷ 2
10 ÷ 1	5 ÷ 1	7 ÷ 1
2 ÷ 2	8 ÷ 8	3 ÷ 3
10 ÷ 2	16 ÷ 2	12 ÷ 2
8 ÷ 4	18 ÷ 9	16 ÷ 8
15 ÷ 5	35 ÷ 5	50 ÷ 5

$80 \div 10$	$20 \div 10$	$100 \div 10$
$18 \div 3$	$24 \div 3$	$12 \div 3$
$24 \div 6$	$54 \div 6$	$36 \div 6$
$36 \div 4$	$24 \div 4$	$16 \div 4$
$32 \div 8$	$48 \div 8$	$56 \div 8$
$63 \div 9$	$27 \div 9$	$72 \div 9$
$21 \div 7$	$56 \div 7$	$49 \div 7$