



# MATH DITTOS 2:

Fact Controlled

**ADDITION & SUBTRACTION**

for Special Learners

*Version 2.9.2*

The **MATH DITTOS 2** series is a unique, fact supported approach to teaching computation. Each page in the series presents a limited number of problems with plenty of workspace. The facts necessary to complete each problem are always presented on the page in a fact reference and practice section.

The **MD2** series currently consists of three "workbooks" published as computer documents in the Adobe PDF format, requiring only the free Adobe Reader. A fourth is under development.

- MATH DITTOS 2: Fact Controlled **ADDITION & SUBTRACTION** for Special Learners teaches addition and subtraction simultaneously using a unique "cluster" approach.
- MATH DITTOS 2: Fact Controlled **MULTIPLICATION** for Special Learners presents multiplication in a careful, step-by-step, fact supported approach.
- MATH DITTOS 2: Fact Controlled **SUBTRACTION** for Special Learners can be effectively used for initial instruction in subtraction with fact support and word problems. It is quite effective for the reteach that older students beginning long division frequently need.
- MATH DITTOS 2: Fact Controlled **DIVISION** for Special Learners is still under development. A few pre-release pages are available for registered users of other MD2 products.

The concept behind the MD2 series is the same one we've used for years in reading, using a "controlled vocabulary." The vocabulary in this context is the basic facts. Each page is limited to only the facts (much like new vocabulary) presented in a fact cluster. The facts are presented, practiced, and applied to computation.

MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners (FCAS) is a remedial, "ground-up" reteach of addition and subtraction. It is unique in that it supplies comprehensive fact support. Addition & subtraction facts are presented in 45 "clusters," including the fact and its complement. Practice problems are controlled, or limited, to the clusters shown on each page, allowing for review of the facts, a prompt for unknown facts, and, most importantly, allowing the student to progress operationally even though facts are not mastered. Students who have not, or **can not**, master their facts may continue to learn the processes of addition and subtraction with fact control. While designed specifically with special learners in mind, FCAS is also a valid tool for teaching computation skills to regular education students.

Each regular cluster includes only three digits. For example, cluster 19 is comprised of 3, 4, and 7 only. Students quickly learn to look for the three-number pattern. The 9 short clusters (such as cluster 18, also pictured at the right) use the same three-number pattern. Initial instruction can be enhanced with any

MATH						15
Name _____			Date _____			
CLUSTER 14 2 4 +8 +2 8 8 -2 -6	987 -264	CLUSTER 15 2 4 +8 +2 7 7 -2 -6	976 -243	CLUSTER 16 2 7 +5 +2 9 9 -2 -7		
293 +423	1,180 -938	79 +22	117 -93	722 +248		
362 +428	811 -202	236 +732	910 -708	242 +736		
238 +632	990 -762	459 +322	908 -222	372 +329		
CLUSTER 18 2 8 +6 +2 10 10 -2 -8	978 -242	CLUSTER 19 2 4 +8 +2 11 11 -2 -8	771 -432	CLUSTER 17 2 9 +8 +2 11 11 -2 -8		

#### CLUSTER 19

$$\begin{array}{r} 3 \\ +4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -3 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ -4 \\ \hline \end{array}$$

#### CLUSTER 18

$$\begin{array}{r} 3 \\ +3 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$

manipulative. Facts are presented sequentially, omitting the zeros, from the 1+'s to the 9+'s.

Subtraction facts are included with their addition complement.

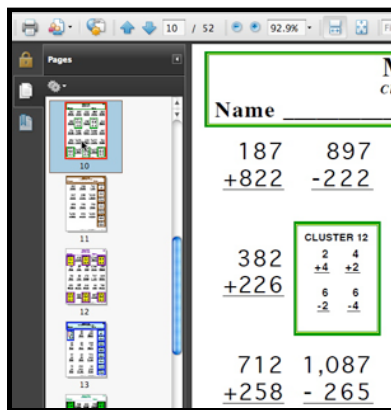
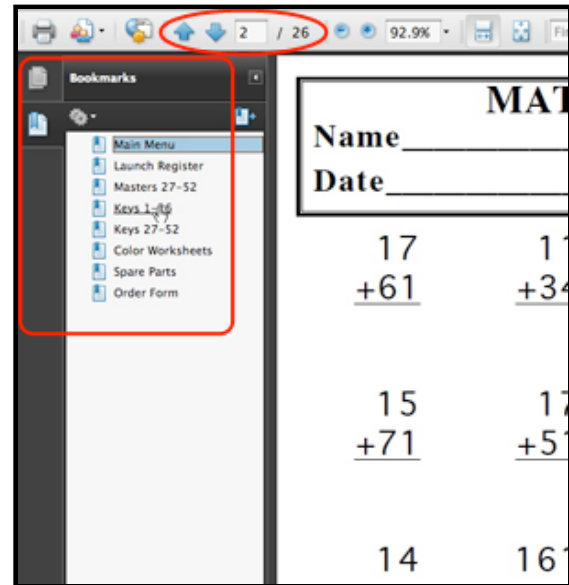
After initial fact drill, clusters should be completed and checked **before** completion of the page problems. A quick examination of each page prior to assignment should reveal anything new (ie., carrying, borrowing, long column addition). A set of No Fact pages that follow the cluster fact presentation order are included for checking student performance.

Few examples are included in these worksheets. These are guided practice sheets designed to be used by those who already understand the progression of computation instruction. If you're just starting out teaching and feel the need for a manual or good examples, I recommend the Spectrum Math Series, available from SRA-McGraw-Hill. It's an old Laidlaw basic math workbook series that has short, understandable examples at the top of each page.

## Navigation

To move from section to section (i.e., from blacklines to answer keys) inside MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners, use the bookmarks on the left of the Adobe Reader window. Use the up or down arrows

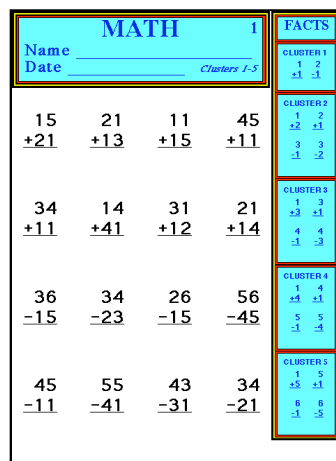
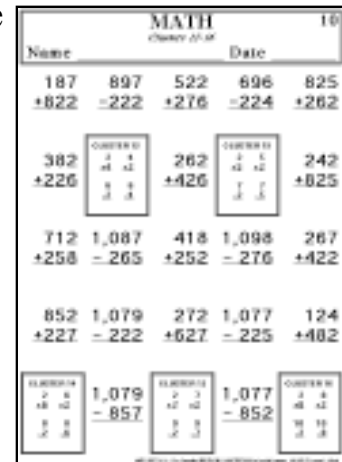
on the toolbar to move from page to page. Within sections, you may also just type in the desired page number and hit return to access a specific page.



You may also use the thumbnail guide on the left of the page to navigate to specific pages within a section.

## What do you get?

**Blackline Masters:** A set of 52 blackline worksheets is the core of MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners. Each page presents students with a set of fact clusters to be completed and checked before attempting the practice problems on the page. Practice problems employ only the facts presented in the clusters on that page.



**Color Masters:** A matching set of color worksheets with identical numerical content to the blackline masters is also provided. I found that my students who could handle the color on the page seemed more enthusiastic in doing the color pages over the black and white ones.

**Answer Keys:** A set of full-size answer keys is also provided. Answers are set in red outline type, but will print nicely in black and white if you wish. I keep a couple of printed answer books available for both my use and for student grading.

## SPARE PARTS:

This is where I've placed all the extras.

MATH			
Name	Date		
43	63	83	35
+33	+35	+37	+93
28	27	34	93
+63	+43	+84	+34
86	127	108	119
-43	-34	-35	-83
80	119	82	101
-37	-86	-39	-33

**“No Fact” pages:** Although no clusters appear on these pages, facts are still controlled following the clusters in the regular masters. The no fact pages make a great posttest for each set of facts.

**Novelty Pages:** These are a few pages where I gave in and jazzed them up a bit. The “Dino” review pages were created to add a bit of zip to the subtraction review pages.

They appear at the end of the spare parts section.

3
+6
Actual size

**Small Flashcards:** A set of small addition and subtraction flashcard masters are included. There are 18 facts per page. The inverse of each fact is also included (i.e., 2+3, 3+2, and 5-2, 5-3).

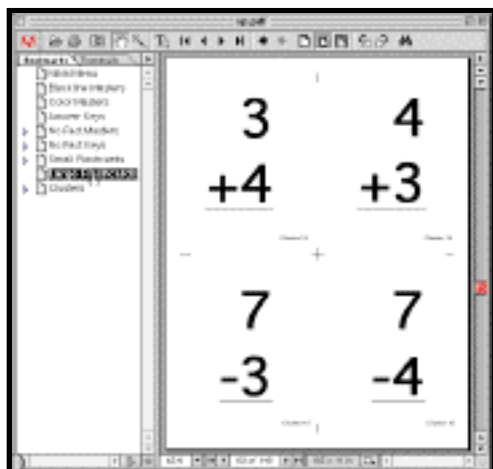
The individual cards cut to approximately 2” x 3”, so that they can easily fit in a student’s pocket. That gives them at least a 50-50 chance of making it home with

the student.

MATH			
Name	Date		
CLUSTER 15	109	CLUSTER 20	698
-87	-87	-375	-375
22	22	323	323
238	90	543	1,181
+732	-32	+335	-239
970	58	878	942
529	897	233	107
+342	-523	+953	-24
871	374	1166	83
237	1,176	248	80
+852	-943	+732	-38
1089	233	980	42
CLUSTER 17	918	CLUSTER 18	869
-325	-325	-332	-332
593	593	587	587

MATH		
NAME	DATE	
1,754	10,000	3,106
-897	-4,601	-1,129
90,183	25,220	80,121
-59,092	-717	-9,037
8,426	46,003	12,715
-4,768	-45,994	-4,815

+1	-2	+2
1	2	1
-2	-1	+1
3	3	3
-1	+3	+1
4	4	4
-3	+4	+4
4	4	4
+1	-4	-1
5	5	5
-5	-5	-5

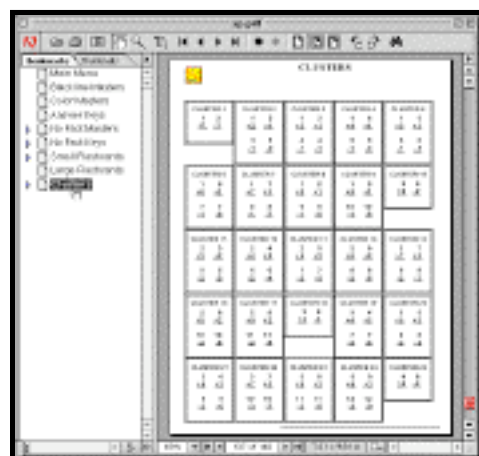


**Large Flashcards:** The large flashcard masters have just 4 facts per page. They're excellent for group drill and instruction.

I print our flashcards on heavy cardstock and laminate them. I've found that anything lighter, and the kids can read the answers through the cards!

**Clusters:** I've included the 45 addition and

subtraction clusters on which MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners is based. They may serve as an additional resource.



Why am I locked out of some pages?

Complete, active versions of the MATH DITTOS 2 series have been offered in the past. Registrations effectively stopped with such releases! What a sad comment on all of us!

Once registered for a particular workbook, you will receive the unlocking code (or password) by email. You will also have the option of downloading the workbook again, but in a version that only requires you to use the password once - when you decompress it onto your hard drive.

## Registration

Kagi (Shareware) has efficiently handled most of the MATH DITTOS 2 registrations for years. You may register any MATH DITTOS 2 product on my Kagi MATH DITTOS 2 online store at:

[http://store.kagi.com/?SL\\_LIVE&lang=en](http://store.kagi.com/?SL_LIVE&lang=en)

Alternately, you may use the Mail Order Form included with these files or the old Register program. (Hint: **Online registration is far easier and faster!**)

Volume discounts are available for the MATH DITTOS 2 series, but are not as yet available online. (Volume discounts are available via the included Register program and Mail Order Form.)

Pricing is as follows:

1- 9 single user licenses, \$10 per user;

10+ licenses, \$9 each;

Site License, \$125; (covers all locations for your organization within a 100 mile radius of your site)

World-Wide License, \$350 (covers all locations for your organization on the planet earth)

I haven't changed or raised prices in years. I actually considered turning the whole series loose as freeware for a time, but decided against it since in retirement, I'm once again working on it.

## **DISCLAIMER**

No warranties are made with this product. If it blows your machine, printer, or budget totally out-of-the water, you're on your own. However, if you are dissatisfied with this product, it may be returned for a full refund. I don't need unhappy customers!

## **LEGAL STUFF**

MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners is shareware. Shareware is material that can be tried, without charge, for up to 30 days. After that period, you are expected to either pay the shareware fee or delete the materials from your hard drive. MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners is protected by U.S. Copyright registration, ©1995-2009 Steven L. Wood. The "distribution version" may be freely copied and distributed in its original form with all accompanying documentation. Registered users may generate paper copies for their own individual classroom use. Registration of MATH DITTOS 2: Fact Controlled ADDITION & SUBTRACTION for Special Learners includes a license to install and use the above on the computer(s) on which you work, whether at school and/or at home, providing that only one copy is in use at any one time. Distribution to a whole staff, school, or system is prohibited. Site licenses are available.

## Some personal observations

These materials were originally created when I began teaching special education in 1994. After years of teaching mostly regular education, I took my school's LD job for a change-of-pace/new challenge. I had no money to purchase appropriate materials, few supplies, a hostile principal, and what my kids needed simply didn't exist on the market anyway. These pages are the result of that experience.

The series is designed to give fact support and to present just a few practice problems so that students won't be overwhelmed by the usual page of 25-30 itty-bitty problems with no work space. At times the series may be used with little initial instruction. It really wasn't designed as a programmed material or tutorial. It was designed to give achievable, meaningful practice/seatwork for students after direct instruction had taken place. The old truism of "Teach, Practice, and Apply" holds true here. I find when my kids performance falls off, I have often forgotten the "Teach" part and have gone directly to "Practice!"

If you have questions, comments, or suggestions, please contact me.

## Contact

Questions and comments can be emailed to me at:

[swood@mathdittos2.com](mailto:swood@mathdittos2.com)

The MATH DITTOS 2 series is available at:

<http://www.mathdittos2.com/>

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I don't post my phone number with these distribution numbers, but registered users do receive that information.

The original versions of the first three MATH DITTOS 2 workbooks were written on a 33 MHz Macintosh Performa 575. It sported a 13" screen and a whopping 36 MB of RAM!



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