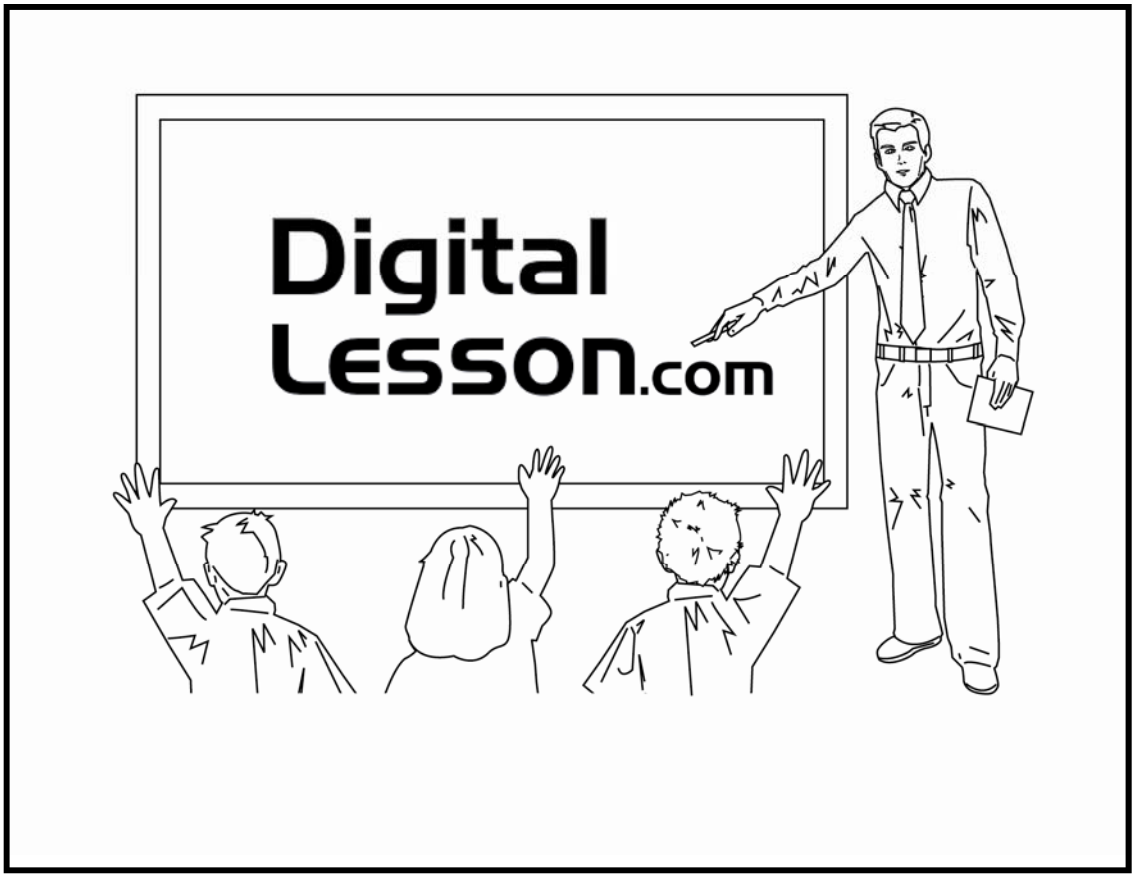
Mark P. Tully

Speed Skills Challenge

Foundational Fluency Program for Middle School Math



16 Different Speed Skill Topics
Five Speed Skill Tests Per Topic
Student Personal Progress Statistics
Student Personal Progress Line Graphs
Certificates, Leader Boards, and Answer Keys

Mark Tully is a mathematics teacher at Oak Middle School in the Los Alamitos Unified School District, Los Alamitos, California. He has been teaching for about 25 years and during that time has served as Mathematics Department Chairman and as a Mathematics Mentor Teacher. He enjoys developing activities that are designed to present the prescribed mathematics curriculum and standards in a way that is active and engaging.

Mark's website, **www.DigitalLesson.com**, is designed to meet the needs of middle school math teachers. DigitalLesson.com specializes in providing instant downloads of engaging, hands-on math activities. These middle school math activities are designed to enhance the middle school math program. Also included on the site are other math resources tailored for the middle school math teacher.

The **Complete Collection of Lessons, Projects, and Games** for middle school math is another one of our signature products. This 438 page eBook includes hands-on, exciting math activities in all of the major mathematical strands. View preview pages for all of the exciting activities on DigitalLesson.com

Mark also publishes the ***Middle School Math Treasures*** newsletter. The newsletter includes resources, ideas, and activities for middle school math teachers. A subscription ***to Middle School Math Treasures*** is free! Sign up on the home page of Digital Lesson.com. Unsubscribe at any time. We will never rent or sell your e-mail address. Enjoy this great, free resource!

We would love to hear about your experiences using this book, **Speed Skills Challenge, Foundational Fluency Program for Middle School Math** in your classroom. Please e-mail us with any comments at mark@digitallesson.com.

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Speed Skills Challenge
Free Sample Module

Teacher Benefits, Instructions, and Tips (pages 1-16)

See the Table of Contents on the next page to view all of the teacher support for the Speed Skills Challenge Foundational Fluency Program. Pages 1-16 in this sample module contain nearly all of these teacher resources so that you can take a comprehensive look at this program.

Speed Skills Module - Percent of Change (pages 17-27)

In this sample module you have access to the complete Percent of Change module, which is one of 16 modules in the Speed Skills Challenge Foundational Fluency Program.

You can print it out and use it in your classroom or just examine it, along with the titles of the other 15 modules, to see how this program will help you in the classroom.

For more details about this program, visit our web page at http://www.DigitalLesson.com/speed-skills.

Unconditional, 30-Day Money Back Guarantee

As with all of our downloadable products, DigitalLesson.com offers a 30-Day, Risk Free Guarantee. If you are not 100% satisfied with your purchase for any reason, just let me know and I will refund your money in full.

Enjoy Using the Speed Skills Foundational Fluency Program!

I believe that you will experience the same positive results that I have using this program. Try it and see for yourself.

All my best wishes to you for a wonderful year teaching math!

Mark P. Tully
Founder, DigitalLesson.com

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Speed Skills Challenge

Foundational Fluency Program for Middle School Math

Common Core Standards Correlations

	Module	Common Core Standard
1.	Rounding Numbers	5.NBT.4
2.	Divisibility Rules	6.NS.2
3.	Tipping	7.RP.3
4.	GCF and LCM	6.NS.4
5.	Adding Integers	7.NS.1
6.	Subtracting Integers	7.NS.1
7.	Multiplying Integers	7.NS.2
8.	Dividing Integers	7.NS.2
9.	Perimeter and Area of a Rectangle	6.G.1, 7.G.6
10.	Exponents	6.EE.1
11.	Exponent Operations	8.EE.1
12.	Percent of a Number	7.RP.3
13.	Powers of Ten	5.NBT.2, 6.EE.1
14.	Two-Step Equations	7.EE.4
15.	Scientific Notation	8.EE.4
16.	Squares and Square Roots	8.EE.2

Speed Skills Challenge Fluency Program

Background and Benefits

The creation of the Speed Skills Challenge Foundational Fluency Program was **my response to a problem that was increasingly a frustration** to me. I saw many students who understood the math that they were being tested on, yet were unable to demonstrate that mastery because they were **tripped up** by the **underlying mathematical skills**.

Specifically, I saw many students who **missed problems because they had not yet mastered integer rules**. They could not easily subtract a negative number from another negative number or multiply negative numbers together. My mind went back to the old multiplication speed drills that I used to do in school. I asked myself whether or not I could create similar drills, which I named **Speed Skills**, that would **cement in students' minds some of the foundational mathematical concepts** that are required for success in middle school math.

That's where I started, with integer operations Speed Skills. I scoured textbooks and soon had identified 16 crucial skills that I believe would be strengthened through the practice of a Speed Skill module. **My goal** with this program is to **build fluency and automaticity** within our students that will be foundational to their success in middle school math.

Just as a person who is fluent in a foreign language doesn't have to search for their words, a student fluent in the foundational mathematical skills will be able to **confidently approach mathematics** without being tripped up by the basic skills required to succeed in middle school math. Percent of a Number, Exponents, Rounding Numbers, GCF and LCM, Integer Operations, Powers of 10, Scientific Notation, and many other skills need to become automatic for **our students to thrive in mathematics**.

The Speed Skills Challenge utilizes a **two-pronged approach** to learning these skills. Both **speed and accuracy** are important in cementing mathematical concepts into memory. The beauty of this program is that even students that can answer all 50 problems correctly on Day 1 can still improve their speed. Each student has the opportunity each day to improve their speed and accuracy.

This program includes **16 modules with 250 problems in each module**, for a total of **4,000 practice problems**. If used consistently it can be a great facilitator of skill-based learning in your classroom. As a result of taking 5 Speed Skill Challenges in each module, you should expect your students to become faster and more accurate in these 16 key skills. This, then, will **propel them into further success** in the problem or activity based lessons since they will not be slowed down by low skill levels.

Several of the Speed Skills Challenges require continuously switching back and forth between different problem types. This kind of switching, for instance from GCF to LCM, requires a higher level of understanding to be able to quickly do two or more types of problems.

Look at the list of Speed Skill Challenges and **imagine the strong foundation that will be produced** as students master these key math skills. The personal progress statistics and personal line graph clearly show students **the improvement and learning** that has taken place for them individually during each 5-day module. Your students will learn and that learning will be reconfirmed by their **personal data**.

Speed Skills Challenge Fluency Program

How to Use This Program

The Speed Skills Challenge is designed as a supplement to strengthen your students' foundational math skills **without taking significant time away** from your regular instruction. These Speed Skills cover 16 different math skills that are important to the success of your students.

The first time that you use the Speed Skills Challenge it will take a little longer since students will not be familiar with the processes involved. However, once your students have experienced Speed Skills the challenges **should only take about 5 minutes** at the very beginning of your class.

To prepare to use Speed Skills **I suggest duplicating two double-sided sheets of paper** for each student. The first paper will have Speed Skills 1 and 2 on the front and Speed Skills 3 and 4 on the back. The second sheet (not handed out until the final day) will have Speed Skill 5 and Personal Progress Stats on the front and each student's personal progress line graph on the back.

Hand out the **Speed Skills 1-4 on the first day**. After students complete Speed Skill 1 have them keep it in their notebook to use during the next three Speed Skills. Have them fold the paper in half while they are taking the remaining Speed Skills so that they are not tempted to refer back to their previous work.

Use a website like **www.Online-Stopwatch.com to set up a clock that counts UP** from zero and project it on your screen. Tell students that when they complete each Speed Skill they should look up on the screen and then record their individual Speed Skill time at the top of their paper.

Remember that, in order to accurately compare their progress during the five Speed Skills, **you must keep the time limit constant for all 5 Speed Skills**. Tell students before they start whether they will have 3 minutes or some other amount of time that you determine. You can always adjust this time for another class or in another year.

See the **5-Day Schedule on the following page** for specific details for each day of the Speed Skill Challenge.

It will take a little longer the first time that you review the Personal Progress Stats and the Personal Progress Line Graph with the students. You may even want to collect and record Speed Skill 5 and then return the sheet for students to complete their personal stats and graph. See the **Explanation of Personal Stats and Personal Line Graph** on page 13.

The Personal Stats and Personal Line Graph are both **powerful tools for students to see their growth** and achievement over the course of the five days. Those students who practice at home and spend a little extra time will exhibit even more growth.

Enjoy using Speed Skills! Choose the specific Speed Skill Challenges that you think will best prepare your students for the year in your math class. I usually do other warm-ups or activities in between Speed Skill modules just to change it up for the students.

Speed Skills Challenge Fluency Program

5-Day Schedule

(Note: This 5-day schedule works well on Monday through Friday, but any 5-day period would be fine.)

Day 1 - Determining Student Baselines (5-7 minutes)

1) Distribute Speed Skill 1. You may want to give a very brief explanation of the type of problem on this Speed Skill but **do not pre-teach it**. This first Speed Skill will provide a baseline score so that you can see what students know prior to any teaching or practice.
2) Determine the time allowed for that specific Speed Skill. Vary times by the difficulty of the given Speed Skill and the level of the students.
3) Prepare the visible timer and cue the students. I say, "Ready, set, GO!"
4) If students finish before you say, "Stop" they should record their time from the visible timer.
5) Read the answers out loud. Have students **fill in unanswered problems** and correct missed problems **in pen** by drawing a line through an incorrect answer and writing the correct answer beside it. Students write their time and score at the top of the Speed Skill.
6) Have student volunteers share their Day 1 results.

Days 2, 3, 4 - Practice Days (3-5 minutes each day)

1) If you double-sided your copies of the Speed Skills, students should already have their paper.
2) Prepare the visible timer and cue the students. I say, "Ready, set, GO!"
3) If students finish before you say, "Stop" they should record their time from the visible timer.
4) Read the answers out loud. Have students **fill in unanswered problems** and correct missed problems **in pen** by drawing a line through an incorrect answer and writing the correct answer beside it. Students write their time and score at the top of the Speed Skill.
5) Have student volunteers share their Day 2, 3, or 4 results. You can have them compare their results to the previous day or to Day 1. They can also share mental math strategies aloud.

Day 5 - Race Day! (Show us what you've got!) (5-15 minutes)

1) Build up to the final race day and get everyone excited for this event. Distribute Speed Skill 5.
2) Prepare the visible timer and cue the students. I say, "Ready, set, GO!"
3) After Speed Skill 5 is completed students record their time and then exchange papers prior to correcting. They write CB (corrected by) and their name (in ink) beneath Speed Skill 5. As the teacher reads answers, they correct the Speed Skill and fill in any answers that were not completed. Then they score the paper and return it to the other student.
4) Decide which Personal Stats you wish your students to complete. You can determine the mean, median, percent change, speed in seconds per correct problem, and complete the line graph.
5) Have student volunteers share their Day 5 results, comparing them to Day 1. WOW!!
6) You may want to recognize Speed Skill Leaders. You can recognize these students with the included Outstanding Speed Skills certificate, the included Speed Skills Leader Board, or other prizes.

Speed Skills Challenge Fluency Program

Explanation of Personal Progress Stats and Personal Line Graph

Personal Progress Stats

(see sample answer page in each Speed Skill module)

Mean and Median Scores

In this section students write their five Speed Skill scores in order and then divide them by 5 to determine the mean. This number should be **rounded to the nearest tenth**. To find the median they puts their 5 scores in order from least to greatest. The middle (median) score will appear inside the box. (Note: Students who were absent should have made up any Speed Skills that they missed so that they have 5 numbers to use in these calculations.)

Percent Change

Students record their Speed Skill 1 and Speed Skill 5 scores. Then they calculate the Amount of Change between these scores and place it on the line. Dividing the Amount of Change by the Original Amount will yield the Percent Increase (or possibly decrease). Round this number to the **nearest tenth of a percent**.

Rate and Unit Rate

For Speed Skill 1 students record the number of seconds that they used and the number of problems that were correct. Then they divide to find the unit rate, the **number of seconds per correct problem**. This number, which should be **rounded to the nearest tenth**, shows them their actual Speed Skill speed. They repeat these steps for Speed Skill 5 and then compare their speeds, recording their increase in speed.

Personal Line Graph

On their Personal Line Graph students record their scores and times for each of the 5 Speed Skills. To record their scores they simply place a point on each vertical line above the corresponding Speed Skill number.

Help students to see that the **Number Correct scale increases by 2's**. For odd numbers they will need to place points between two line segments.

Students then use a ruler or straight edge to connect their 5 points and create a line graph of their progress. **Many students will show a significant increase** over the 5-day period which will be visually represented on their graphs.

Teacher Tips (p. 1)

How to Effectively Use Speed Skills in Your Classroom (Read This First!)

The following teacher tips are based upon my experience using Speed Skills in the classroom. Of course you should **modify these suggestions as needed** to fit your students and your own teaching preferences.

Time: Three minutes is the best amount of time to use with most Speed Skills, although with some top classes you may want to try two minutes. If you go longer students may lose focus. Use your knowledge of your students and the Speed Skill topic to decide how much time to give students on each Speed Skill. Taking a timed Speed Skill yourself may help you to determine the correct time for your classes. Even if students cannot finish in the time you select, they will get faster during the 5-day module. If you have advanced students be careful not to give too much time. It is preferable if every student cannot finish the Speed Skills on Day 1. That way students can improve in two areas: the number complete and their personal time.

The time you select should remain constant for the entire 5 days. You do not want to change the time after the first day since this will invalidate the student personal data you calculate at the end of the Speed Skills Module. The great thing about Speed Skills is that even students that correctly answer all problems on Day 1 can still be challenged to significantly decrease their times over the course of the module.

Visual Timer for Students: Find a way to visually display the time so that students are able to easily record their individual time at the conclusion of each Speed Skill. I suggest using the website www.online-stopwatch.com and then projecting it up on your screen. Online-stopwatch allows you to select a full screen digital timer that will count up or down. On Speed Skills you want to count up from zero and then say "stop" when the timer reaches your selected time period of two or three minutes. Many students are motivated by the opportunity to increase their speed as well as their number correct.

Correcting Speed Skills: At the conclusion of each Speed Skill I read off the correct answers to each problem. When I read the actual answers I read, "Number 1, -12 and 4" for the two answers on line 1. Then I read, "Number 2, 42 and 120" and so on down through line 25. Students put a line through any answer they miss and add the correct answer in colored ink next to it. I also require students to copy any unfinished answers onto their papers in colored ink. This engages students in the process, shows them the correct answers, and enables them to **use the completed Speed Skill to practice**.

Save Paper: You can complete each 5-day Speed Skills Module with only two sheets of paper per student by printing on both sides of the paper. On Day 1 give the students the first paper with Speed Skills 1 and 2 on the front of the page and Speed Skills 3 and 4 on the back of the page. Do not worry if they study up-coming Speed Skills and get faster and stronger mathematically. That is our goal as math teachers! On Day 5 give students Speed Skill 5 (which they will not have seen before) and the attached Personal Stats sheet. On the back you can include the line graph for that Speed Skill. I have them staple the two together and turn them in that day.

Teacher Tips (p. 2)

How to Effectively Use Speed Skills in Your Classroom (Read This First!)

Skipping: Some students will wander through the 50 problems looking for the simpler problems to answer first. The danger here is that they will continually spend their time filling in answers that they already know and not improving their skills by adding new skill fluency. As the teacher, you may want to set a policy not allowing "skipping" if you see this becoming a widespread habit. At the very least encourage your students to practice an earlier Speed Skill to increase their math skill fluency and decrease the need for skipping.

Encourage Personal Growth over Comparing Themselves to Others: Encourage students to continue to practice so that they can answer more problems correctly in less time. Each day after our Speed Skills I call on volunteers to share out their progress since the previous day. After Day 5 students will all compare their progress since Day 1. They will calculate their Percent Change and their Unit Rate (where they determine their increase in speed). Rather than worry about "winning," encourage students to improve their own personal scores.

Accountability/Grading: I have told students (you may want to also) that the Day 5 Speed Skill will count as a quiz grade. My intention here is to encourage student practice during the given module. Without accountability, some students will not put in a full effort. I would consider Speed Skill improvement and accuracy of the student personal statistics and line graph as factors in such a grade. Some students will score very well on Day 1, while others will have to work to bring up a lower Day 1 score. You may also decide to just count them for completion and award homework points.

Hide Previous Speed Skills from View: Before students begin Speed Skills 2 and 4 you may want to have them fold their paper in half vertically to hide the previous Speed Skill. I noticed some of my students referring back to the previous Speed Skill rather than trying to calculate the answers.

Practice Problems: You can set the standard for your classes regarding how you expect them to practice their Speed Skills each day. Covering up the answers for a previous Speed Skill and then uncovering answers after performing each problem mentally will help students learn and increase in math fluency. You may also choose to provide a numerical goal that they should be able to reach at the end of the module.

How to Account for Absences: I instruct students that are absent to time themselves at home or in class (with the help of another student) and complete any Speed Skills that they are absent for. The mean, median, and line graph will not be able to be fully completed (easily) without 5 Speed Skill scores. If students are absent on Day 5 you could time them for 2 or 3 minutes while other students begin an assignment.

Speed Skill Instruction: Other than briefly explaining the type of problem, **DO NOT** offer any instruction before administering Speed Skills Day 1. You want this to serve as a baseline that identifies students initial skill level. Additional instruction after Day 1 is completed, that would benefit the students, is highly encouraged. We want these Speed Skills to become automatic in the minds of our students. If there are concepts that you can teach the students that will help them understand the given Speed Skill better, take the time to do this. Some Speed Skills require very little teaching and will instead require some time spent by the students to increase their speed and fluency.

Teacher Tips (p. 3)

Effectively Use Speed Skills in Your Classroom (Read This First!)

Pencil and Ink: I have students complete all Speed Skills in pencil and correct them all in colored ink. I want to be able to easily differentiate between the problems answered during the Speed Skill and the problems that were filled in after the fact for students to practice later. I also want to be able to easily identify which problems were completed but missed.

Record Keeping: You may decide to keep a separate page in your grade book where you have all of the student Speed Skill 5 final scores. This will allow you, at a glance, to see which students are falling behind in their foundational skills and how their scores compare to the rest of your class.

Student Recognition: Leader Board and Certificates: In certain classroom situations competition can be rewarding and fun for the students. A "Leader Board" has been included with each Speed Skill. If you decide to use it you may want to include **student name, number correct, and time** on each line. There is also a certificate (on page 17) that you can reproduce and use to recognize top students in each Speed Skill or you may choose to award other prizes instead.

The Teacher's Role: Your role in creating a classroom atmosphere where the Speed Skill Challenge is fun and exciting will make the program even more effective. Challenge your students to better their previous scores and times, encourage them to practice at home, give them tips that will lead to stronger performance, and celebrate their progress. Show your enthusiasm and it will be infectious!

Mathematical Fluency and Amazing Growth: You will be amazed at the growth that students can make in 5 short days to really cement these key mathematical concepts into their minds. Increased speed will be the mark of fluency, as they begin to answer many of these problems automatically and show that they have internalized the learning. Of course the growth will be more pronounced for students who practice their Speed Skills.

Modify These Instructions and Teacher Tips as Needed: Finally, feel free to alter these tips and directions to fit your needs and the needs of your students. It is my goal to share my experience and to shorten your learning curve for using Speed Skills in any way that I can. However, you know your teaching style and your students and may need to adjust the Speed Skills so they work best for you. Do it!

Enjoy using the Speed Skills Challenge and watching your students learn!

Mark P. Tully

Founder, DigitalLesson.com
Middle School Math Teacher

I would love to receive any feedback or stories about your use of the Speed Skills Challenge in your classroom. You can email me at mark@digitallesson.com. Thank you!

Speed Skills Challenge

Foundational Fluency Program

Percent of a Number

Speed Skills Challenge

Foundational Fluency Program

Percent of a Number

In this module:

* five Speed Skills Challenges
* student personal progress statistics sheet
* student progress line graph
* printable leader board

Also included in the front of this program:

* Speed Skills Challenge program directions
* 5-day implementation plan
* student achievement certificate
* teacher tips

Speed Skills Challenge

Foundational Fluency Program

Percent of a Number

Suggested Time: 3 minutes (vary as needed)

Common Core Standard: 7.RP.3

Types of Problems Included:

Problem Type: 1%, 2%, 3%, 4%, 5%	Example: 3% of 300 =
Problem Type: 10%, 20%, 30%, 40%, 50%	Example: 40% of 110 =
Problem Type: 100%, 200%, 300%, 400%, 500%	Example: 200% of 250=

Math Concepts that Drive Success:

Finding the percent of a number is a skill that is used often in real life and in math class. This Speed Skill Challenge module helps students reach fluency in finding the percent of a number mentally. As students learn methods for determining 15 different percent levels they become well-prepared to mentally calculate tips, discounts, markups, taxes, and a number of other percent-based applications.

Specific Percent of a Number Tips:

After allowing students to complete Percent of a Number 1 on their own, you will be able to help them increase their speed and accuracy by showing them the following mental math tips:

To find 10% of a number simply move the decimal point one place to the left. For example, 10% of 32 = 3.2, 10% of 400 = 40, and 10% of 7 = 0.7. Then, teach students to find 20%, 30%, 40%, and 50% of a number by first calculating 10% and then multiplying that number by 2, 3, 4, or 5.

To find 100% of a number simply multiply the number by 1 (100% of a number is that number). With this foundation students can be shown that to find 200%, 300%, 400%, and 500% they just need to multiply the number by 2, 3, 4, or 5. (Example: since 100% of 9 = 9 then 300% of 9 = 27 because 3 x 9 = 27.)

To find 1% of a number simply move the decimal point two places to the left. For example, 1% of 420 = 4.2, 1% of 900 = 9, and 1% of 76 = 0.76. Then, teach students to find 2%, 3%, 4%, and 5% of a number by first calculating 1% and then multiplying that number by 2, 3, 4, or 5.

I make sure that I have covered these concepts before Percent of a Number 4 and 5.

Name _____
Date _____
Score ____ Time _____

Percent of a Number 1

1% of 2300 =	20% of 420 =	1
300% of 20 =	5% of 800 =	2
2% of 800 =	1000% of 5 =	3
10% of 40 =	3% of 400 =	4
400% of 12 =	30% of 220 =	5
200% of 42 =	4% of 500 =	6
50% of 120 =	100% of 62 =	7
40% of 20 =	2% of 150 =	8
200% of 13 =	500% of 10 =	9
5% of 480 =	400% of 8 =	10
20% of 500 =	50% of 420 =	11
100% of 85 =	1000% of 14 =	12
3% of 300 =	40% of 40 =	13
30% of 110 =	4% of 200 =	14
300% of 50 =	10% of 750 =	15
500% of 6 =	1% of 4500 =	16
100% of 33 =	20% of 800 =	17
400% of 20 =	10% of 380 =	18
2% of 400 =	500% of 2 =	19
1% of 900 =	200% of 250 =	20
5% of 300 =	1000% of 70 =	21
3% of 600 =	40% of 200 =	22
50% of 240 =	4% of 700 =	23
30% of 40 =	300% of 120 =	24
100% of 19 =	50% of 860 =	25

Name _____
Date _____
Score ____ Time _____

Percent of a Number 2

1% of 300 =	20% of 70 =	1
300% of 20 =	5% of 200 =	2
2% of 100 =	1000% of 12 =	3
10% of 250 =	3% of 1200 =	4
400% of 4 =	30% of 50 =	5
200% of 12 =	4% of 800 =	6
50% of 220 =	100% of 23 =	7
40% of 60 =	2% of 800 =	8
200% of 5 =	500% of 8 =	9
5% of 700 =	400% of 10 =	10
20% of 40 =	50% of 10 =	11
100% of 120 =	1000% of 43 =	12
3% of 500 =	40% of 110 =	13
30% of 80 =	4% of 100 =	14
300% of 9 =	10% of 80 =	15
500% of 200 =	1% of 4200 =	16
100% of 12 =	20% of 320 =	17
400% of 100 =	10% of 10 =	18
2% of 2400 =	500% of 30 =	19
1% of 700 =	200% of 200 =	20
5% of 900 =	1000% of 5 =	21
3% of 400 =	40% of 20 =	22
50% of 50 =	4% of 1100 =	23
30% of 120 =	300% of 500 =	24
100% of 1 =	50% of 880 =	25

Name _____
Date _____
Score ____ Time _____

Percent of a Number 1 - Key

1)	23	1)	84
2)	60	2)	40
3)	16	3)	50
4)	4	4)	12
5)	48	5)	66
6)	84	6)	20
7)	60	7)	62
8)	8	8)	3
9)	26	9)	50
10)	24	10)	32
11)	100	11)	210
12)	85	12)	140
13)	9	13)	16
14)	33	14)	8
15)	150	15)	75
16)	30	16)	45
17)	33	17)	160
18)	80	18)	38
19)	8	19)	10
20)	9	20)	500
21)	15	21)	700
22)	18	22)	80
23)	120	23)	28
24)	12	24)	360
25)	19	25)	430

Name _____
Date _____
Score ____ Time _____

Percent of a Number 2 - Key

1)	3	1)	14
2)	60	2)	10
3)	2	3)	120
4)	25	4)	36
5)	16	5)	15
6)	24	6)	32
7)	110	7)	23
8)	24	8)	16
9)	10	9)	40
10)	35	10)	40
11)	8	11)	5
12)	120	12)	430
13)	15	13)	44
14)	24	14)	4
15)	27	15)	8
16)	1000	16)	42
17)	12	17)	64
18)	400	18)	1
19)	48	19)	150
20)	7	20)	400
21)	45	21)	50
22)	12	22)	8
23)	25	23)	44
24)	36	24)	1500
25)	1	25)	440

Name _____
Date _____
Score ____ Time _____

Percent of a Number 3

1% of 1600 =	20% of 240 =	1
300% of 30 =	5% of 100 =	2
2% of 400 =	1000% of 15 =	3
10% of 500 =	3% of 100 =	4
400 % of 3 =	30% of 30 =	5
200% of 20 =	4% of 700 =	6
50% of 20 =	100% of 15 =	7
40% of 200 =	2% of 3600 =	8
200% of 6 =	500% of 7 =	9
5% of 1000 =	400% of 20 =	10
20% of 60 =	50% of 60 =	11
100% of 580 =	1000% of 82 =	12
3% of 600 =	40% of 50 =	13
30% of 210 =	4% of 1000 =	14
300% of 400 =	10% of 70 =	15
500% of 40 =	1% of 500 =	16
100% of 2 =	20% of 10 =	17
400% of 200 =	10% of 20 =	18
2% of 700 =	500% of 100 =	19
1% of 800 =	200% of 110 =	20
5% of 600 =	1000% of 8 =	21
3% of 1500 =	40% of 40 =	22
50% of 300 =	4% of 200 =	23
30% of 40 =	300% of 10 =	24
100% of 127 =	50% of 260 =	25

Name _____
Date _____
Score ____ Time _____

Percent of a Number 4

1% of 900 =	20% of 500 =	1
300% of 10 =	5% of 1100 =	2
2% of 1800 =	1000% of 17 =	3
10% of 30 =	3% of 1000 =	4
400% of 30 =	30% of 110 =	5
200% of 7 =	4% of 300 =	6
50% of 80 =	100% of 3 =	7
40% of 70 =	2% of 200 =	8
200% of 30 =	500% of 400 =	9
5% of 500 =	400% of 120 =	10
20% of 20 =	50% of 30 =	11
100% of 460 =	1000% of 51 =	12
3% of 700 =	40% of 300 =	13
30% of 60 =	4% of 600 =	14
300% of 600 =	10% of 60 =	15
500% of 50 =	1% of 400 =	16
100% of 18 =	20% of 50 =	17
400% of 2 =	10% of 750 =	18
2% of 600 =	500% of 6 =	19
1% of 3200 =	200% of 300 =	20
5% of 400 =	1000% of 7 =	21
3% of 300 =	40% of 30 =	22
50% of 440 =	4% of 1200 =	23
30% of 10 =	300% of 5 =	24
100% of 715 =	50% of 70 =	25

Name _____
Date _____
Score ____ Time _____

Percent of a Number 3 - Key

1)	16	1)	48
2)	90	2)	5
3)	8	3)	150
4)	50	4)	3
5)	12	5)	9
6)	40	6)	28
7)	10	7)	15
8)	80	8)	72
9)	12	9)	35
10)	50	10)	80
11)	12	11)	30
12)	580	12)	820
13)	18	13)	20
14)	63	14)	40
15)	1200	15)	7
16)	200	16)	5
17)	2	17)	2
18)	800	18)	2
19)	14	19)	500
20)	8	20)	220
21)	30	21)	80
22)	45	22)	16
23)	150	23)	8
24)	12	24)	30
25)	127	25)	130

Name _____
Date _____
Score ____ Time _____

Percent of a Number 4 - Key

1)	9	1)	100
2)	30	2)	55
3)	36	3)	170
4)	3	4)	30
5)	120	5)	33
6)	14	6)	12
7)	40	7)	3
8)	28	8)	4
9)	60	9)	2000
10)	25	10)	480
11)	4	11)	15
12)	460	12)	510
13)	21	13)	120
14)	18	14)	24
15)	1800	15)	6
16)	250	16)	4
17)	18	17)	10
18)	8	18)	75
19)	12	19)	30
20)	32	20)	600
21)	20	21)	70
22)	9	22)	12
23)	220	23)	48
24)	3	24)	15
25)	715	25)	35

Name _____
Date _____
Score ____ Time _____

Percent of a Number 5

1% of 500 =	20% of 80 =	1
300% of 11 =	5% of 300 =	2
2% of 300 =	1000% of 21 =	3
10% of 800 =	3% of 1100 =	4
400% of 1 =	30% of 20 =	5
200% of 120 =	4% of 400 =	6
50% of 70 =	100% of 4 =	7
40% of 80 =	2% of 2200 =	8
200% of 40 =	500% of 5 =	9
5% of 800 =	400% of 110 =	10
20% of 410 =	50% of 500 =	11
100% of 370 =	1000% of 35 =	12
3% of 200 =	40% of 10 =	13
30% of 330 =	4% of 500 =	14
300% of 6 =	10% of 40 =	15
500% of 300 =	1% of 3700 =	16
100% of 24 =	20% of 30 =	17
400% of 50 =	10% of 50 =	18
2% of 500 =	500% of 60 =	19
1% of 600 =	200% of 8 =	20
5% of 1200 =	1000% of 7 =	21
3% of 800 =	40% of 210 =	22
50% of 40 =	4% of 900 =	23
30% of 70 =	300% of 700 =	24
100% of 116 =	50% of 210 =	25

Personal Progress Stats

Name _____
Date _____

Percent of a Number Stats

Mean and Median Scores
(round to the nearest tenth)

Mean

(____+____+____+____+____) ÷ 5 = _____

Median

_____, _____, _____, _____, _____

Percent Change
(round to the nearest tenth of a percent)

Percent of a Number 1 Score: _____

Percent of a Number 5 Score: _____

Amount of Change: _____

Amount of Change _____ = %
Original Amount (#1) (increase)

Rate and Unit Rate
(round to the nearest tenth)

Speed Skill # 1 Unit Rate # 1

Time in seconds: _____ = _____
Number correct 1

Speed Skill # 5 Unit Rate # 5

Time in seconds: _____ = _____
Number correct 1

I increased my speed by _____ seconds for each correct answer.

Name _____
Date _____
Score ____ Time _____

Percent of a Number 5 - Key

1)	5	1)	16
2)	33	2)	15
3)	6	3)	210
4)	80	4)	33
5)	4	5)	6
6)	240	6)	16
7)	35	7)	4
8)	32	8)	44
9)	80	9)	25
10)	40	10)	440
11)	82	11)	250
12)	370	12)	350
13)	6	13)	4
14)	99	14)	20
15)	18	15)	4
16)	1500	16)	37
17)	24	17)	6
18)	200	18)	5
19)	10	19)	300
20)	6	20)	16
21)	60	21)	70
22)	24	22)	84
23)	20	23)	36
24)	21	24)	2100
25)	116	25)	105

Personal Progress Stats

Name _____
Date _____

Percent of a Number Stats - Key

Mean and Median Scores
(round to the nearest tenth)

Mean

(24 + 32 + 29 + 42 + 47) ÷ 5 = 34.8

Median

__24__, __29__, **32**, __42__, __47__

Percent Change
(round to the nearest tenth of a percent)

Percent of a Number 1 Score: __24__

Percent of a Number 5 Score: __47__

Amount of Change: __23__

$\frac{\text{Amount of Change}}{\text{Original Amount (\#1)}} = \frac{23}{24} = 95.8\ \%$ (increase)

Rate and Unit Rate
(round to the nearest tenth)

	Speed Skill # 1		Unit Rate # 1
Time in seconds:	112	=	4.7
Number correct	24		1

	Speed Skill # 5		Unit Rate # 5
Time in seconds:	100	=	2.1
Number correct	47		1

I increased my speed by ____2.6____ seconds for each correct answer.

Speed Skills Challenge

Foundational Fluency Program

Percent of a Number
Leader Board

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

Percent of a Number Line Graph

Name _____ Dates: From _____ to _____

Time	Time	Time	Time	Time