S3G Super Simple Study Guide

Chapter 2

This study sheet provides students and parents with the *basic concepts* of each chapter. Students still need to apply these skills in context. They need to know *when* to apply each concept, often after working through a word problem, table, chart, or graph. Some problems may be more challenging than the ones shown here, but students first need to understand these basic concepts. There are usually several ways to solve a math problem, but this guide will show you the easiest way for 6th graders. The sections are listed in the order that I plan on teaching them, and that is subject to change. We do not use every section of the textbook.

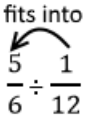
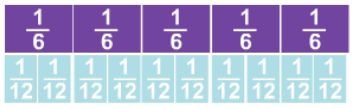
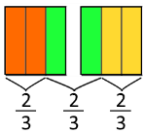
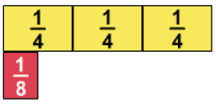
Click on the blue links to navigate through the study guide. You can also view videos at Khan Academy and Virtual Nerd.

Section 2.1	Topic: Convert Fractions and Decimals	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
Converting Fractions to Decimals -Divide the numerator by the denominator. $\frac{5}{8}$ ÷ $5 \div 8 = 0.625$ Converting Decimals to Fractions -Say the number out loud. 0.58 = "Fifty-eight hundredths" = $\frac{58}{100}$ Then simplify to $\frac{29}{50}$		Don't forget to simplify! 0.28 = "Twenty-eight hundredths"= $\frac{28}{100}$ But, the answer choice will be in the simplest form of $\frac{7}{25}$	Convert $\frac{7}{20}$ to a decimal. Answer	Fruit Splat Super Hero Decimals Puppy Chase

Section 2.2	Topic: Compare and Order Fractions and Decimals	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
The *easiest* way to do compare and order fractions and decimals is to convert them all to decimals. Just divide the numerators by their denominators. Put these numbers in order from least to greatest: $\frac{12}{20}$, 0.45, $\frac{2}{5}$, $\frac{1}{2}$, 0.55 work: *12÷20 = 0.6* *leave it* *2÷5 = 0.4* *0.5* *leave it* answer: $\frac{2}{5}$, 0.45, $\frac{1}{2}$, 0.55, $\frac{12}{20}$		Pay attention to the order that is being asked for. Is it least to greatest, or greatest to least? Read carefully.	Order these numbers from least to greatest: $\frac{27}{30}$, 0.84, $\frac{41}{50}$ Answer	IXL Scooter Quest Dolphin Racing Ordering (go to Options, & choose fractions or tricky decimals)

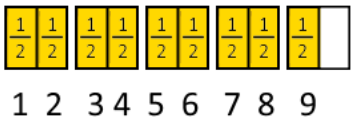
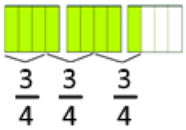
Section 2.3	Topic: Multiply Fractions	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
$\frac{3}{4}$ of $\frac{1}{2}$ means $\frac{3}{4} \times \frac{1}{2}$ Just multiply straight across. $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$ Then simplify if possible. If you multiply a fraction by a whole number, change the whole number to a fraction, with 1 as the denominator. $\frac{3}{4} \times 24 = \frac{3}{4} \times \frac{24}{1}$ That way, you have a numerator and a denominator, and you can multiply straight across, and simplify at the end.		Be sure to check that your answer is written in simplest form. Use you calculator to check! 	Find the product: $\frac{2}{3}$ of 48 Answer	Snow Sprint Math Playground

Section 2.4	Topic: Simplify before Multiplying	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
Regular way: $\frac{3}{10} \times \frac{5}{27} = \frac{15}{270}$, but then you have to simplify. Instead, you can use the "butterfly method" to simplify before multiplying. It's an easy way to use mental math to multiply fractions. These can both be divided by 3. These can both be divided by 5. Then, just multiply straight across. $\frac{1}{2} \times \frac{1}{9} = \frac{1}{18}$	This only helps if you know your math facts! Keep practicing your multiplication and division facts.	Find the product. Simplify before you multiply. $\frac{4}{7} \times \frac{7}{16}$ Answer	Video 1 Video 2

Section 2.5	Topic: Model Fraction Division	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
$\frac{5}{6} \div \frac{1}{12}$ is asking "How many times does $\frac{1}{12}$ fit into $\frac{5}{6}$?"  Draw what you have, and break it into the appropriate sized parts. So the answer is 10.  	Sometimes it is necessary to use pieces from more than one whole to form a fraction. $2 \div \frac{2}{3} = 3$  	Use the model to find the quotient: $\frac{3}{4} \div \frac{1}{8}$  Answer	IXL Divide with Models Fraction Tiles

Section 2.6	Topic: Estimate Quotients	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
Round each number, then divide with mental math. $47\frac{7}{9} \div 8\frac{1}{3} \approx 48 \div 8 = 6$ Done!	Don't do all the tough work and then just round your answer. Instead, round *all* the numbers, and make it easy mental math from start to finish.	Estimate. Round before you divide. $34\frac{7}{10} \div 5\frac{3}{8}$ Answer	Choose the Sign

Section 2.7	Topic: Divide Fractions	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
Since we already know how to multiply fractions, we can just turn this division expression into a multiplication expression. Step 1: Flip the sign to multiplication. $\frac{3}{5} \div \frac{3}{10} \rightarrow \frac{3}{5} \times \frac{3}{10}$ Step 2: Flip the 2nd fraction into its reciprocal (turn it upside down). $\frac{3}{5} \times \frac{3}{10} \rightarrow \frac{3}{5} \times \frac{10}{3}$ Step 3: Mutliply across like normal. $\frac{3}{5} \times \frac{10}{3} = \frac{30}{15}$ Step 4: Simplify if possible. $\frac{30}{15} = 2$	Only flip the 2nd fraction (the divisor). The 1st fraction never changes! Problem: $\frac{1}{2} \div \frac{1}{8}$ *Wrong* way: $\frac{2}{1} \times \frac{1}{8}$ Right way: $\frac{1}{2} \times \frac{8}{1}$	Find the quotient: $\frac{3}{4} \div \frac{1}{16}$ Answer	Math Playground Dividing Fractions

Section 2.8	Topic: Model Mixed Number Division	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
$4\frac{1}{2} \div \frac{1}{2}$ means "How many times does $\frac{1}{2}$ fit into $4\frac{1}{2}$?" Draw what you have, then break it into the appropriate sized parts.  So, the quotient is 9, because ½ fits into 4 ½ nine times	Sometimes it is necessary to use pieces from more than one whole to form a fraction. $2\frac{1}{4} \div \frac{3}{4} = 3$  	Draw a model to find the quotient: $2\frac{1}{3} \div \frac{1}{3}$ Answer	Fraction Tiles Video

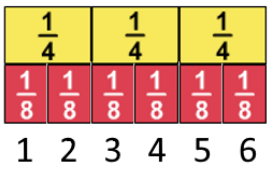
Section 2.9	Topic: Divide Mixed Numbers	Common errors to avoid:	Try this problem on another sheet of paper:	Practice more at these websites:
Make both numbers into fractions. One or both may be improper fractions. That's ok! We can simplify at the end. $5\frac{3}{5} \div 2\frac{1}{2} = \frac{28}{5} \div \frac{5}{2}$ Then change it to a multiplication problem, and flip the 2nd fraction to its reciprocal. $\frac{28}{5} \div \frac{5}{2} = \frac{28}{5} \times \frac{2}{5}$ Then multiply straight across, and simplify. $\frac{28}{5} \times \frac{2}{5} = \frac{56}{25} = 2\frac{6}{25}$	Don't forget to flip the sign to multiplication! Also, only flip the 2nd fraction (the divisor) to form its reciprocal.	Find the quotient: $9\frac{3}{4} \div 3\frac{1}{4}$ Answer	Math Man Mixed to Improper

Section	Answer	Return to Study Guide
2.1	7 ÷ 20 = 0.35	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.2	$\frac{41}{50}$, 0.84 , $\frac{27}{30}$	Click to return to the study guide.

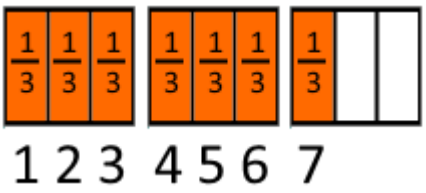
Section	Answer	Return to Study Guide
2.3	32	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.4	$= \frac{1}{4}$	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.5	 So the quotient is 6	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.6	$34\frac{7}{10} \div 5\frac{3}{8} \approx 35 \div 5 =$ 7	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.7	$\frac{3}{4} \div \frac{1}{16} = \frac{3}{4} \times \frac{16}{1} = \frac{48}{4} = 12$	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.8	 So, the quotient is 7.	Click to return to the study guide.

Section	Answer	Return to Study Guide
2.9	3	Click to return to the study guide.