

To the Student (and Parent)

Sixth grade is an important year for developing math skills. All your work on math this year will help to prepare you for studying math in seventh grade, eighth grade, and in high school. How good you will become at math depends less on natural ability and more on your effort, determination, and organizational skills. Even students who feel that they aren't good at math can catch up by putting forth some extra effort. Don't give up! Almost anyone can become good at math if they really want to!

Here are some tips on how to use this workbook successfully:

- Make sure that your work is readable and easy to follow.
- If there isn't enough room on the worksheet, then show your work on a separate sheet of paper, making sure that you write down the worksheet number and problem number, so you can easily find it later.
- If you get stuck on one problem, then go on to another problem, and come back later to the one that you were stuck on.
- While working on a problem from one worksheet, it may be helpful to refer back to a problem that you did on a previous worksheet.
- *Fractions.* All answers to fraction problems should be reduced. Don't give answers as improper fractions, but, instead, convert them to mixed numbers (for example, $3\frac{1}{4}$ instead of $\frac{13}{4}$).
- *Division.* Answers for division problems may be rounded to three significant digits, unless the problem states that you should leave your answer as an exact decimal, in which case you must go until it repeats or ends. For example, $2579 \div 56$ has an exact answer of 46.053571428 . Rounding it to three significant digits means that we go to the fourth digit (which is the second place after the decimal point, and is a 5 in this case), and then round up the previous digit for an answer of 46.1.
- *Answers involving time.* Answers requiring a measure of time should be given in separated units. Examples of this are: 1 day 6 hours instead of 1.25 days and 3 hours 12 minutes instead of 3.2 hours.
- *Math Tricks!* A list of the math tricks can be found at the back of this workbook.
- Above all, homework is for learning! Try your best on every problem. Struggling and overcoming frustration are part of the process of doing math. Even if you don't get a problem correct, you will learn by trying it, and then later seeing how it should be done. *Do not fall into the trap of doing the homework just to get it done.*
- *Learn from your mistakes!* When you get a problem wrong, make sure you follow up on it; find your mistake, and learn how to do the problem correctly.

Getting Help. The problems in this workbook are based upon the material found in my curriculum book, titled: *Making Math Meaningful – A Middle School Math Curriculum for Teachers and Parents*, which can be purchased through Whole Spirit Press. Parents (or tutors) who are helping their children with the worksheets in this workbook will find helpful explanations and examples in the curriculum book.

6th Grade Math – Sheet #1

Do it in your head.

- 1) $80 \cdot 70$
- 2) $400 \cdot 60$
- 3) $5000 \cdot 400$
- 4) $120 \cdot 7$
- 5) $1100 \cdot 7000$
- 6) $3600 \div 900$
- 7) $42,000 \div 70$
- 8) $720,000 \div 120,000$
- 9) $48,000 \div 8$
- 10) $54 + 8$
- 11) $60 - 13$
- 12) $73 + 24$
- 13) $700 - 8$
- 14) $687 + 36$
- 15) $4000 - 38$

Arithmetic.

Show your work.

- 16)
$$\begin{array}{r} 5674 \\ - 839 \\ \hline \end{array}$$
- 17)
$$\begin{array}{r} 64008 \\ - 28285 \\ \hline \end{array}$$

18)

$$\begin{array}{r} 782 \\ \times 539 \\ \hline \end{array}$$

19)

$$\begin{array}{r} 587900 \\ \times 76300 \\ \hline \end{array}$$

20)

$$\begin{array}{r} 375 \\ 684 \\ 39 \\ 865 \\ 421 \\ 997 \\ + 516 \\ \hline \end{array}$$

Fractions.

- 21) $\frac{3}{11} + \frac{4}{11}$
- 22) $\frac{3}{8} + \frac{1}{2}$
- 23) $\frac{7}{12} - \frac{1}{12}$
- 24) $\frac{2}{3} \cdot \frac{3}{5}$
- 25) $\frac{3}{8} \cdot \frac{6}{7}$
- 26) $\frac{11}{12} \div \frac{2}{3}$
- 27) $\frac{5}{16} + \frac{1}{4}$
- 28) $\frac{7}{12} - \frac{1}{4}$
- 29) $\frac{45}{49} \cdot \frac{21}{25}$

$$30) \quad \frac{3}{16} + \frac{7}{12}$$

Reduce each fraction.

$$31) \quad \frac{6}{9}$$

$$32) \quad \frac{30}{120}$$

$$33) \quad \frac{35}{49}$$

$$34) \quad \frac{24}{60}$$

$$35) \quad \frac{36}{270}$$

$$36) \quad \frac{175}{225}$$

$$37) \quad \frac{540}{2880}$$

Division.

Hints:

- The second number goes outside "the house".
- All division problems on this sheet work out exactly.

$$38) \quad 3456 \div 6$$

$$39) \quad 48424 \div 8$$

$$40) \quad 5394 \div 62$$

$$41) \quad 49441 \div 49$$

6th Grade Math – Sheet #2

Do it in your head.

- 1) $60 \cdot 90$
- 2) $500 \cdot 120$
- 3) $36,000 \div 600$
- 4) $42,000 \div 70$
- 5) $60,000 \div 2,000$
- 6) $34 + 28$
- 7) $70 - 33$
- 8) $83 + 56$
- 9) $700 - 36$
- 10) $7.2 \cdot 1000$
- 11) $7.2 \div 1000$
- 12) $0.054 \cdot 100$

Arithmetic.

Show your work.

- 13)
$$\begin{array}{r} 732 \\ 674 \\ 789 \\ 468 \\ 927 \\ + 316 \\ \hline \end{array}$$
- 14)
$$\begin{array}{r} 50607 \\ - 18639 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \quad 32 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \quad 35 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 17) \quad 43 \\ \times 11 \\ \hline \end{array}$$

- 18) By looking at #15, #16 and #17, what is the *trick* for multiplying by 11?

Cast out nines to check your answer.
Ignore ending zeroes!

$$\begin{array}{r} 19) \quad 765300 \\ \times 82600 \\ \hline \end{array}$$

$$\begin{array}{r} 20) \quad 4785 \\ \times 1589 \\ \hline \end{array}$$

Reduce each fraction.

$$21) \quad \frac{2}{8}$$

$$22) \quad \frac{14}{35}$$

$$23) \quad \frac{3600}{4500}$$

$$24) \quad \frac{48}{600}$$

Decimals.

$$25) \quad 87.5 + 7.35$$

$$26) \quad 302.47 - 4.6$$

$$27) \quad 51.8 - 4.26$$

$$28) \quad 212 - 0.03$$

Fractions.

$$29) \quad \frac{2}{15} + \frac{4}{15}$$

$$30) \quad \frac{4}{5} + \frac{2}{15}$$

$$31) \quad \frac{7}{11} - \frac{3}{5}$$

$$32) \quad \frac{5}{12} - \frac{3}{20}$$

$$33) \quad \frac{3}{8} \div \frac{6}{7}$$

$$34) \quad \frac{3}{4} \cdot \frac{14}{15}$$

$$35) \quad \frac{15}{16} \cdot \frac{20}{21}$$

$$36) \quad \frac{8}{12} \div \frac{49}{77}$$

Division. Leave your answers as mixed numbers (e.g. $3\frac{2}{5}$), and use short division if the divisor is only one digit.

Show your work on a separate sheet, if needed.

$$37) \quad 3745 \div 4$$

$$38) \quad 25257 \div 9$$

$$39) \quad 4300 \div 63$$

$$40) \quad 32900 \div 81$$

Make Flashcards!

Your teacher should tell you which of the below multiplication facts you need to make into flashcards. You should practice them *every day* until two weeks past the point that you know them *really well*, and then continue practicing them once per week. This will help you to do calculations quickly and accurately in the years ahead.

2•2 = 4	9•2 = 18
3•2 = 6	9•3 = 27
3•3 = 9	9•4 = 36
4•2 = 8	9•5 = 45
4•3 = 12	9•6 = 54
4•4 = 16	9•7 = 63
5•2 = 10	9•8 = 72
5•3 = 15	9•9 = 81
5•4 = 20	11•2 = 22
5•5 = 25	11•3 = 33
6•2 = 12	11•4 = 44
6•3 = 18	11•5 = 55
6•4 = 24	11•6 = 66
6•5 = 30	11•7 = 77
6•6 = 36	11•8 = 88
7•2 = 14	11•9 = 99
7•3 = 21	11•11 = 121
7•4 = 28	12•2 = 24
7•5 = 35	12•3 = 36
7•6 = 42	12•4 = 48
7•7 = 49	12•5 = 60
8•2 = 16	12•6 = 72
8•3 = 24	12•7 = 84
8•4 = 32	12•8 = 96
8•5 = 40	12•9 = 108
8•6 = 48	12•11 = 132
8•7 = 56	12•12 = 144
8•8 = 64	

13•2 = 26	16•2 = 32
13•3 = 39	16•3 = 48
13•4 = 52	16•4 = 64
13•13 = 169	16•16 = 256
14•2 = 28	18•2 = 36
14•3 = 42	18•18 = 324
14•14 = 196	25•2 = 50
15•2 = 30	25•3 = 75
15•3 = 45	25•4 = 100
15•4 = 60	25•5 = 125
15•5 = 75	25•6 = 150
15•15 = 225	25•25 = 625

Optional:

13•5 = 65	18•3 = 54
14•4 = 56	18•4 = 72
14•5 = 70	18•5 = 90
16•5 = 80	25•8 = 200

6th Grade Math – Sheet #3

Do it in your head.

- 1) $60 \cdot 400$
- 2) $500 \cdot 800$
- 3) $45000 \div 5000$
- 4) $720,000 \div 800$
- 5) $84 + 38$
- 6) $2000 - 38$
- 7) $2851.2 \div 1000$
- 8) $0.45 \div 1000$
- 9) $0.0003 \cdot 100$
- 10) $11 \cdot 42$
- 11) $11 \cdot 76$
- 12) $110 \cdot 930$
- 13) $16 \cdot 4$
- 14) $150 \cdot 4$

- 15)
$$\begin{array}{r} 749 \\ 524 \\ 602 \\ 347 \\ 996 \\ 283 \\ + 418 \\ \hline \end{array}$$

Decimals.

- 16) $30.5 + 5.26$

- 17) $92.4 - 0.286$

- 18) $51.893 - 4.26$

- 19) $0.04 \cdot 0.7$

- 20) $0.006 \cdot 0.03$

- 21) $6 \cdot 0.03$

- 22) $0.06 \cdot 8000$

- 23) $0.07 \cdot 2.3$

Cast out nines to check your answer.

$$\begin{array}{r} 24) \quad 7823000 \\ \quad \times 95600 \\ \hline \end{array}$$

$$\begin{array}{r} 25) \quad 4.38 \\ \quad \times 0.974 \\ \hline \end{array}$$

Reduce each fraction.

$$26) \quad \frac{540}{720}$$

$$27) \quad \frac{280}{44000}$$

Fractions.

28) $\frac{7}{10} + \frac{2}{25}$

29) $\frac{27}{37} + \frac{9}{37}$

30) $\frac{3}{8} \div \frac{11}{16}$

31) $\frac{18}{25} \cdot \frac{15}{16}$

32) Convert to a mixed number (e.g. $3\frac{2}{5}$).

a) $\frac{23}{3}$

b) $\frac{77}{12}$

33) Convert to an improper fraction. (e.g. $\frac{12}{7}$)

a) $5\frac{2}{3}$

b) $11\frac{7}{8}$

Long Division.

Example:

$$280139 \div 583$$

With difficult divisors like 583 we should *not* first ask ourselves, "How many times does 583 go into 2801?", but rather, we round 583 to 600, drop off the zeroes, and then ask the easier question, "How many times does 6 go into 28?" The answer to this question is 4, so we *estimate* that 4 is the first digit in our answer (it may be off by one!) and then we multiply 4 times 583 to see if it works.

$$\begin{array}{r} 4 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 469 \end{array}$$

Since 469 is less than 583, we can tell that 4 is correct as the first digit of our answer. After bringing down the 3, we then find the next digit in our answer by asking, "How many times does 6 go into 47?"

(Notice that we rounded 46 to 47 because the next digit, 9, was 5 or greater.) The answer to this question is 7, so we *estimate* that 7 is the next digit in our answer.

$$\begin{array}{r} 47 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 4693 \\ \underline{-4081} \\ 612 \end{array}$$

But since 612 is greater than 583, we know that 7 is too small. So instead, we try 8 as the second digit, which works fine.

$$\begin{array}{r} 48 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 4693 \\ \underline{-4664} \\ 29 \end{array}$$

(This problem is unfinished.)

Fill in the Blanks.

34) With $3745 \div 738$, we first ask, "How many times does _____ go into _____?"

35) With $45800 \div 76$, we first ask, "How many times does _____ go into _____?"

36) With $92538 \div 274$, we first ask, "How many times does _____ go into _____?"

Now, using your above answers, do the below division problems. Leave your answers as mixed numbers. *You must show your work on a separate piece of paper.*

37) $3745 \div 738$

38) $45800 \div 76$

39) $92538 \div 274$

Short Division.

40) $6583 \div 4$

41) $26618 \div 7$

Mixed numbers.

42) $4\frac{7}{11} + 3\frac{8}{11}$

43) $8\frac{5}{12} + 9\frac{7}{8}$