

# HCMS Incoming 6th Grade Math Packet

Welcome incoming 6<sup>th</sup> grade students!

This packet will help prepare you for the skills in 6th grade so we can continue to build on these when you return in August!

If you are struggling with any of the skills in this packet, please search for the **skill topic (written in blue)** on the Khan Academy website:

<https://www.khanacademy.org/> . You can also use the suggested IXL skills to practice on IXL.com \*

\*One of the most important skills for success in 6<sup>th</sup> grade math is knowing your **MULTIPLICATION FACTS**. Please practice your basic facts over the summer! 😊 The table below offers suggestions:

Game or Practice	Link	Reminders
Kahoot Game	<a href="https://tinyurl.com/yac4xw33">https://tinyurl.com/yac4xw33</a>	Login on a device, then play from a second device (phones work!)
Sequence Practice	<a href="https://www.timestables.com/">https://www.timestables.com/</a>	Try the 6s, 7s, 8s, and 9s facts!
2 minute practice (Mixed Facts)	<a href="https://tinyurl.com/y8zdyl8a">https://tinyurl.com/y8zdyl8a</a>	Try to beat your previous score! Play as many times as you want!

The packet will not be graded, however, we highly recommend that you practice at least 3 to 4 days a week, even if it's only for 15 minutes! Every little bit helps! We look forward to meeting you in August.

6<sup>th</sup> Grade Math Teachers 😊

# Big 20 Study Guide

1.  $15 + 0.23 + 8.8$

$$\begin{array}{r} 15.00 \\ + 0.23 \\ + 8.80 \\ \hline 24.03 \end{array}$$

To add decimal numbers line up decimal points and bring one down for the answer. If there is no decimal point you may add one **behind** the number. Then you may add in zeros in the empty spaces.

[Khan Academy: Adding Three Decimals](#)  
IXL: G.1

2.  $45 - 4.2$

$$\begin{array}{r} 45 \\ - 4.2 \\ \hline 40.8 \end{array}$$

To subtract decimal numbers line up decimal points and bring one down for the answer. If there is no decimal point you may add one **behind** the number. Then you **MUST** add in zeros in the empty spaces.

[Khan Academy: Subtracting Decimals: 39.1-0.794](#)  
IXL: G1

3.  $0.2 \times 0.3$

$$\begin{array}{r} 0.2 \leftarrow 1 \text{ place} \\ \times 0.3 \leftarrow + 1 \text{ place} \\ \hline 0.06 \leftarrow 2 \text{ places} \end{array}$$

To multiply decimal numbers do **not** line up decimal points. Count how many digits are behind the decimal point in both numbers. The answer must have the same amount of digits behind the decimal point. [Khan Academy: Multiplying Decimals Example](#)  
IXL: H.2

4.  $0.612 \div 0.06$

$$\begin{array}{r} 10.2 \\ 0.06 \overline{)0.612} \quad 6 \overline{)61.2} \\ \underline{0.6} \phantom{00} \\ 0.012 \\ \underline{0.06} \\ 0.000 \end{array}$$

To divide decimal numbers move the decimal in the divisor to the end of the number. Move the decimal in the dividend the same amount of places. Bring the decimal straight up for the answer. Keep dividing until you get a zero remainder, or a repeating decimal.

[Khan Academy: Dividing by a multi-digit decimal](#)  
IXL: H.7

5.  $2.6 \times 100$

$$2.6 \times 100 = 260$$

6.  $0.06 \times 1000$

$$0.06 \times 1000 = 60$$

To multiply by 10, 100, 1000, etc. use the short cut. Move the decimal:  
1 place to the right for x10  
2 places to the right for x100  
3 places to the right for x1000  
Add on zeros when necessary. Drop off front end zeros. [Khan Academy: Multiplying a decimal by a power of 10](#)  
IXL: H.4

7.  $5.1 \div 100$

$$5.1 \div 100 = 0.051$$

8.  $18.6 \div 10$

$$18.6 \div 10 = 1.86$$

To divide by 10, 100, 1000, etc. use the short cut. Move the decimal :  
1 place left for  $\div 10$   
2 places left for  $\div 100$   
3 places left for  $\div 1000$   
Add on zeros when necessary.

[Khan Academy: Dividing a decimal by a power of 10](#)  
IXL: H.6

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9. Greatest Common Factor (GCF)

Find the GCF of 18 and 24.

$$\begin{array}{ll} 18: 1 \times 18 & 24: 1 \times 24 \\ & 2 \times 12 \\ & 3 \times 8 \\ & 4 \times 6 \\ 2 \times 9 & \\ 3 \times 6 & \end{array}$$

GCF: 6

To find the greatest common factor:

1. List all of the factors of each number
2. Circle the largest number

[Khan Academy: Greatest Common Factor Explained](#)  
IXL: E.7

10. Least Common Multiple (LCM)

Find the LCM of 12 and 8.

12: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144

8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96

To find the least common multiple:

1. List the multiples of each number
2. Circle the first number that matches

[Khan Academy: Least Common Multiple](#)  
IXL: E.8

11.  $3\frac{1}{3} \times 2\frac{3}{4}$

$$\begin{array}{r} 6\overline{)55} \\ \underline{-54} \\ 1 \end{array}$$
$$\frac{5}{3} \times \frac{11}{4} = \frac{55}{12} = 9\frac{1}{6}$$

[Khan Academy: Multiply Mixed Numbers](#)  
IXL: K.11

To multiply mixed numbers:

1. Change the mixed numbers to improper fractions.
2. Cross cancel when possible.
3. Multiply the numerators, multiply the denominators.
4. Change any improper fractions back to mixed numbers.
5. Make sure answer is simplified! (reduced)

12.  $2\frac{1}{4} \div 1\frac{1}{2}$

$$\begin{array}{l} 2\frac{1}{4} \div 1\frac{1}{2} \\ \frac{9}{4} \div \frac{3}{2} \\ \frac{3}{2} \times \frac{2}{3} = \frac{3}{2} = 1\frac{1}{2} \end{array}$$

[Khan Academy: Dividing Mixed Numbers](#)  
IXL: L.7

To divide mixed numbers :

1. Change the mixed numbers to improper fractions.
2. Take the reciprocal of the 2<sup>nd</sup> fraction.
3. Cross cancel if possible.
4. Multiply the numerators, multiply the denominators.
5. Change any improper fractions back to mixed numbers.
6. Make sure answer is simplified! (reduce)

13.  $(1.2)^2$

$$\begin{array}{r} 1.2 \\ \times 1.2 \\ \hline 24 \\ 12 \\ \hline 1.44 \end{array}$$

To do powers multiply the number as many times as indicated by the exponent (power).

[Khan Academy: Exponents of Decimals](#)  
IXL: D.4

14.  $(\frac{3}{5})^2$

$$\left(\frac{3}{5}\right)^2 = \frac{3 \times 3}{5 \times 5} = \frac{9}{25}$$

To do powers with fractions multiply both the numerator and denominator as many times as indicated by the exponent (power).

[Khan Academy: Powers of Fractions](#)  
IXL: D.5

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15. Distributive Property  
Simplify  $7(a + 4)$  using the distributive property.  
 $7(a + 4) = (7 \times a) + (7 \times 4) = 7a + 28$

[Khan Academy: Distributive Property with Variables](#)  
IXL: Y.10

Find the missing number using the distributive property:  $15 + 18 = (\underline{\quad} \times 5) + (\underline{\quad} \times 6)$   
 $15 = 3 \times 5$   
 $18 = 3 \times 6$   
The missing number is **3**.

16. Round \$6.3572 to the nearest cent

$\$6.3572 \rightarrow \$6.36$

[Khan Academy: Rounding decimals on the number line](#)  
IXL: F.7

To simplify by using distributive property:

1. Distribute the number on the outside of the parentheses.
2. Multiply.

To find the missing number:

1. Divide the original number by the number in parentheses.
2. Make sure the number is the same for both blank spaces.

To round a decimal or whole number:

1. Circle the place value you are rounding.
2. If the digit to the right is 0, 1, 2, 3 or 4 the circled number stays the same.
3. If the digit to the right is 5, 6, 7, 8 or 9, add one to the circled number.
4. Cents are hundredths of a dollar! Dimes are tenths of a dollar!

17.  $\frac{3}{8} = ?$  (decimal)

$$\begin{array}{r} 0.375 \\ 8 \overline{)3.000} \\ \underline{-24} \phantom{00} \\ 60 \phantom{0} \\ \underline{-56} \phantom{0} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

To convert a fraction to a decimal, divide the denominator into the numerator. Keep dividing until you get a zero remainder or a repeating answer.

[Khan Academy: Fraction to Decimal: 11/25](#)  
IXL: I.10

18.  $0.73 = ?$  (fraction)  
 $0.73 = \frac{73}{100}$  hundredths

To convert a decimal number to a fraction just read the decimal and write as a fraction.

[Khan Academy: Rewriting decimals as fractions: 0.15, 0.8, 0.36](#)  
IXL: I.10

19.  $\frac{1}{2} = ?$  (percent)

$$\begin{array}{r} .50 \\ 2 \overline{)1.00} \end{array}$$

$$.50 = 50\%$$

First convert to a decimal (as you do in #17) then move the decimal 2 places right and add a percent sign (%).

[Khan Academy: Converting percent to decimals and fractions example](#)  
IXL: S.1

20. 3% of 820  
 $0.03 \times 820$   
 $\begin{array}{r} 820 \\ \times .03 \\ \hline 24.60 \end{array}$

1. Change the percent to a decimal number by moving the decimal (at the end) 2 places to the left.
2. Multiply.

[Khan Academy: Percent of a whole number](#)  
IXL: S.4