Grade 3

Building Fluency with Multiplication

Overarching Student Learning Goals In this unit, your child will work to build an understanding of the following:	Resources/Tasks to support your child at home.
Understanding x2 Facts. Solve 2 x 7. ➢ *Skip-count by 2 seven times: 2, 4, 6, 8, 10, 12, (14)* ➢ *Double 7 to solve the expression.* ➢ *2 x 7 is the same as doubling 7, or adding 7 + 7= 14.*	• Look for real-world examples of situations with doubles. For example: tires on a bicycle, sets of eyes, pairs of socks, etc. • MatholiaChannel: Multiplying by 2 https://binged.it/2HiL9PE • Math Playground: Math Monster Multiplication (select x2 facts) https://goo.gl/L8VAZi • http://gregtangmath.com/breakapart (select "multiplication" then "x2")
Understanding x10 Facts. Solve 4 x 10. ➢ *Skip count by 10 four times: 10, 20, 30, (40)* ➢ *Connect multiplying by 10 to base-ten blocks and ten frames.* ➢ *4 x 10 is the same as 4 tens, or 40.*	• Look for real-world examples of skip counting by ten, such as finding the total value of dimes. • http://gregtangmath.com/breakapart (select "multiplication" then "x10") • Khan Academy: Multiplying numbers by 10s, 100s, and 1000s (stop after 10s!) https://goo.gl/hzx67H

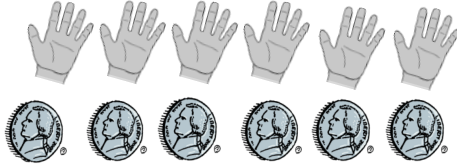| **Understanding x5 Facts.**	• Task: 6 dimes is $0.60. Explain how you can use this information to find out how many nickels have a value of $0.60.

Understanding x5 Facts.

Solve 6 x 5.

➢ *Skip-count by 5 six times: 5, 10, 15, 20, 25, (30)*
➢ *Use real-world connections, such as 5 fingers on each hand and 5 cents in a nickel.*

➢ *Identify patterns in products, for example, all of the products have either a 5 or a 0 in the ones place.*
➢ *Use understanding that, since 10 is 5 doubled, x5 facts can be found by cutting x10 products in half. For example, "Since 6 x 10 is 60, 6 x 5 must be 30, because 30 is half of 60."*

5 x 0	=	0	10 x 0 =	0
5 x 1	=	5	10 x 1 =	10
5 x 2	=	10	10 x 2 =	20
5 x 3	=	15	10 x 3 =	30
5 x 4	=	20	10 x 4 =	40
5 x 5	=	25	10 x 5 =	50
5 x 6	=	30	10 x 6 =	60
5 x 7	=	35	10 x 7 =	70
5 x 8	=	40	10 x 8 =	80
5 x 9	=	45	10 x 9 =	90
5 x 10	=	50	10 x 10 =	100

Right column:

• Task: 6 dimes is $0.60. Explain how you can use this information to find out how many nickels have a value of $0.60.

• When working towards fluency of x5 facts, ask how x10 facts can be used to help find the products of x5 facts.

• http://gregtangmath.com/breakapart (select "multiplication" then "x5")

Understanding x1 and x0 Facts.

Solve 3 x 1.

➢ *Create a visual model of 3 groups of 1.*
➢ *Apply the Commutative Property, and visualize 1 group of 3.*
➢ *Generalize that any factor multiplied by 1 will have that factor that is not 1 as the product.*

Solve 3 x 0.
Visualize 3 groups with nothing in them.
Generalize that any factor mutliplied by 0 will have a product of 0.

Right column:

• Pose the following questions to support continued development of understanding of multiplication:
   o Why is the product of any number and 0 always zero?
   o Why will the product of 1 and any other number always be that other number?

• Multiply by 0 and 1 Video: https://goo.gl/g8rLqM

• Ski Racer Game: Multiply by 1 https://goo.gl/mbZo4z

• Ski Racer Game: Multiply by 0 https://goo.gl/BYzqPd

For more information on the learning goals and your child's progress, please contact your child's teacher.