LEVELS A–F · ALIGNED TO US COMMON CORE

ANGL MATHEMATICS

Level D

Multiplication, Division & Fractions

Recommended ages 8–9

Lesson Book

Write-In Edition



ANGL EDUCATION

anglmath.com



ANGL Mathematics, Level D: Multiplication, Division & Fractions

Lesson Book, Write-In Edition

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Hello, Grown-Ups!

This book teaches equal groups, multiplication and division facts, fractions, area, perimeter, time and measurement. Your child writes right in it. You read the directions aloud and work beside them.

Every lesson has four pages

Learn	Builds On (what this lesson grows from), Goals, Key Ideas with pictures, and a Worked Example to do together.
Investigate	Hands-on work with counters, frames and objects: break things apart and put them back together.
Practice: Write	Writing practice: numbers, signs and short answers. Start at the green dot.
Practice	Problems to try, ending with a Think problem.

What you need

Counters, a ruler with inches and centimeters (one is on a workmat), a clock with hands, a few real coins, a set of number cards 0 to 10, crayons, a pencil and scissors.

Tips

- Keep sessions short: about 30 minutes, four days a week. Use real objects first, then pictures, then numbers.
- Read the **Grown-up note** at the bottom of each page before you start it.
- Ask "How do you know?" often. Explaining is part of learning math.
- **Writing is not the same as knowing.** Trouble writing a number is not trouble understanding it. Your child may point or say the answer while you write it.

Every ANGL book, from Level A to Calculus, uses these same parts in the same order. The Teaching Guide has a short script for every lesson, Quick Checks, Chapter Tests and all the answers.

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Chapter 1

Equal Groups and Multiplication Meaning



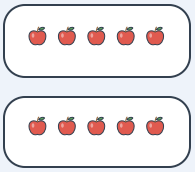
AT THE BAKE SALE. WRITE.

Trays with 4 cupcakes in each



3 × 4 = ___

Bags with 5 apples in each



2 × 5 = ___

Packs with 2 stars in each



4 × 2 = ___

YOU ALREADY KNOW

Adding equal rows, doubles, skip-counting by 2s, 5s and 10s, and facts within 20.

YOU WILL LEARN

Equal groups as multiplication: arrays, sharing and turnaround facts, and the 2s, 5s, 10s, 0s and 1s.

Grown-up note. Talk about the picture first. Ask "How many cupcakes in each tray? How many trays?" The trays are equal groups, and the stars show the turnaround: 4 packs of 2 is 8, and 2 packs of 4 is also 8. Accept counting for now, and listen for "three 4s."

Chapter 1 Am I Ready?

Readiness

1 · ADD EQUAL ROWS.

$4 + 4 + 4 = ___$ $2 + 2 + 2 + 2 = ___$

2 · USE A DOUBLE.

$6 + 6 = ___$ $6 + 7 = ___$ $7 + 7 = ___$

3 · COUNT BY 2S, 5S AND 10S.

2 , 4 , ___ , 8 , 10

5 , 10 , ___ , 20 , ___

4 · TURN IT AROUND.

$7 + 8 = ___$ $8 + 7 = ___$

Digital Tools for Chapter 1

Scan the code, or go to anglmath.com/ld

Counters in equal groups, an array maker and skip-counting

Grown-up note. Card 1 checks adding equal rows (Level C, Lesson 1.6), card 2 doubles (Level C, Lesson 1.5), card 3 skip-counting (Level C, Lesson 2.5) and card 4 turning a fact around (Level C, Lessons 1.1 and 1.2). If a card is hard, replay that Level C lesson with counters before Lesson 1.1.

Lesson 1.1 Equal Groups

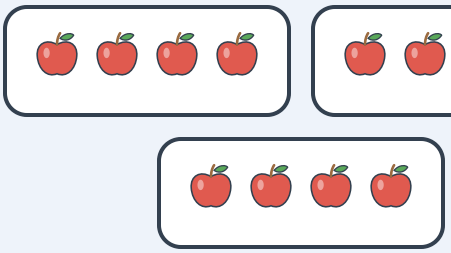
Learn

BUILDS ON Equal rows of counters (Level C, Lesson 1.6, Arrays). New: equal groups that are not rows, and the words "groups of" and "in all"

GOALS ★ **I can see equal groups and tell how many there are in all.**

KEY IDEAS

3 groups of 4

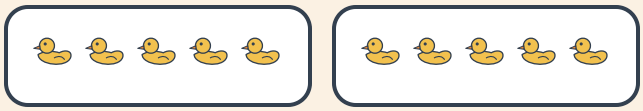


4 + 4 + 4

4 + 4 + 4 = 12

Each group has the **same** number. **3 groups of 4** is 12 in all.

WORKED EXAMPLE · 2 GROUPS OF 5



2 groups of 5 is 10

5 + 5 = 10

2 × 5 = 10

Two bags with 5 ducks in each: **5 + 5 = 10**. We can also say **2 groups of 5**, and write it **2 × 5 = 10**.

The multiplication sign shows equal groups. You will use it from here on.

Grown-up note. Equal groups are the idea behind every multiplication fact. Watch Out: a child may count the groups instead of the things in all. Ask "How many are in each group? How many groups? How many in all?" and point to each part.

Lesson 1.1 Equal Groups

Investigate

INVESTIGATE · MAKE THE GROUPS

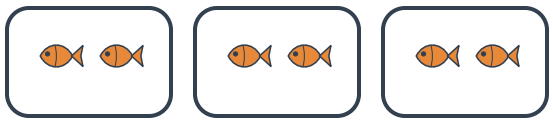
Make **4** groups with **3** in each.



4 × 3 = ___

INVESTIGATE · GROUPS OF TWO

3 groups of **2**. How many in all?



3 × 2 = ___

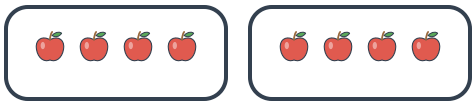
INVESTIGATE · MY WAY

Write the groups as an addition, then say how many in all.

5 + 5 + 5 = ___ **2 × 4 = ___**

Grown-up note. Use counters or the workmat. In Make the Groups, the child builds 4 groups of 3 and reads the total. Ask "How many are in each group?" before "How many in all?" The groups must be equal; "I can make the groups as I like" is only true when they match.

WRITE HOW MANY GROUPS AND HOW MANY IN ALL.



$2 \times 4 = ___$

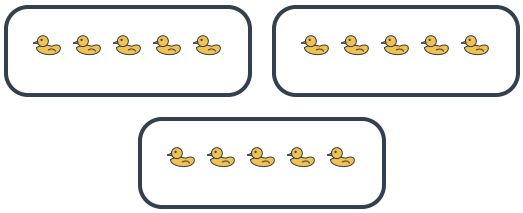
$4 + 4 = ___$



$3 \times 3 = ___$

$3 + 3 + 3 = ___$

1 Count the equal groups, then the total.



$3 \times 5 = ___$

2 How many in all?



$4 \times 2 = ___$

Grown-up note. Read each row aloud: "2 groups of 4 is 8, and 4 plus 4 is also 8." In problem 1, the child writes 3 × 5 and counts the total. Accept either order of the factors (5 × 3 is also right) and ask which order matches the groups.

Lesson 1.1 Equal Groups

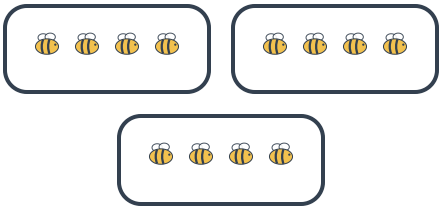
Practice

1 Count the equal groups, then the total.



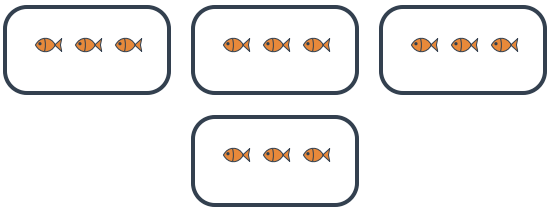
$2 \times 6 = ___$

2 Write the addition for the equal groups.



$4 + 4 + 4 = ___$

3 How many in all?



$4 \times 3 = ___$

4 Write how many in all.

$5 \times 2 = ___$

$2 \times 7 = ___$

5 Draw 3 equal groups of 4.

$3 \times 4 = ___$

Think Is Ana right?

> Ana says: 4 groups of 3 is the same as 3 groups of 4.

Yes **No**

Grown-up note. Problem 5 asks for drawn groups: any 3 groups of 4 is right, as long as each group has 4. For the Think problem, ask "How do you know?" A full answer draws 4 groups of 3 and turns them over to see 3 groups of 4.