Alaska AK STAR 3rd Grade Math Workbook

Comprehensive Practice, Challenging Exercises, and Strategic Guidance for Complete Test-Day Confidence



- Strengthen Every Key Skill
- Sharpen Math Skills the Smart Way
- Essential Practice for Real Growth



Practice Master Achieve

Reza Nazari

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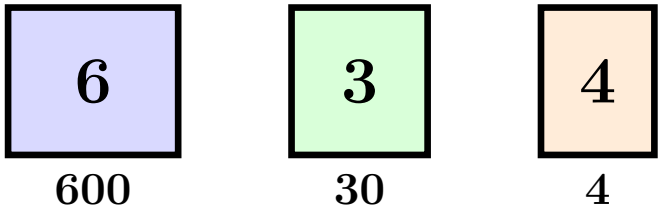
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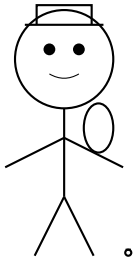
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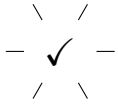
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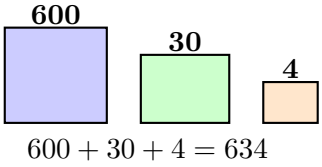
"The 3 is in the tens place, so it means 30!" Milo added.



"And the 4 is in the ones place, so it's just 4!" they said together.



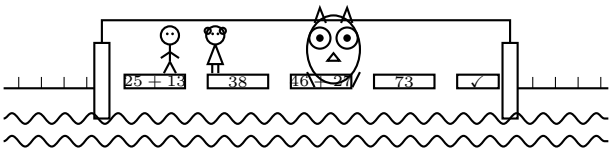
"Excellent!" Digit cheered. "$600 + 30 + 4 = 634$. You've unlocked the path!"



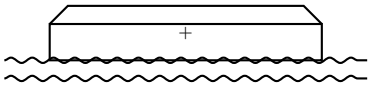
Place Value Snapshot

- Add each place to get the whole number: $600 + 30 + 4 = 634$.
- Each step to the left is $\times 10$ the place on its right.
- Example: $4{,}827 = 4{,}000 + 800 + 20 + 7$.

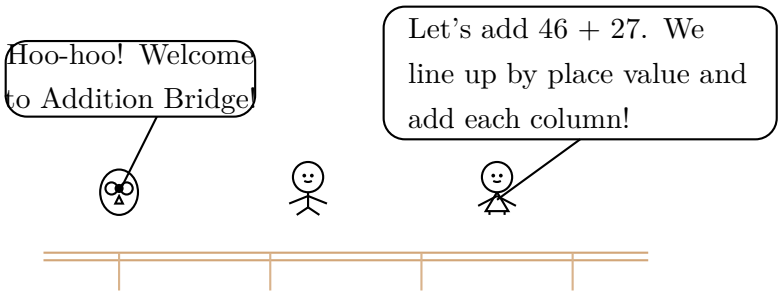
Addition Bridge



After climbing down Place Value Peak, Milo and Maya came to a wide river. The only way across was an old wooden bridge with math problems carved into each plank!



Professor Hoot was waiting for them. "Hoo-hoo! Welcome to Addition Bridge! Step only on the correct answers, or the planks will wobble!"



"I'll show you!" Maya said. "Let's add $46 + 27$. We line up the numbers by place value and add each column!"

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TIP: Lining Up Numbers

- Always line up numbers by place value!
- Ones under ones, tens under tens.
- This makes adding much easier!

$$\begin{array}{r} 4\ 6 \\ +\ 2\ 7 \\ \hline \end{array}$$

Adding with Regrouping (46 + 27)

- **Step 1: Add ones** — $6 + 7 = 13$. Write 3 in ones; carry 1 to tens.
- **Step 2: Add tens** — $1 + 4 + 2 = 7$. Write 7 in tens.
- **Answer:** $46 + 27 = 73$.

"$46 + 27 = 73$!" Milo cheered.

They carefully stepped on the correct answers and crossed the bridge safely!

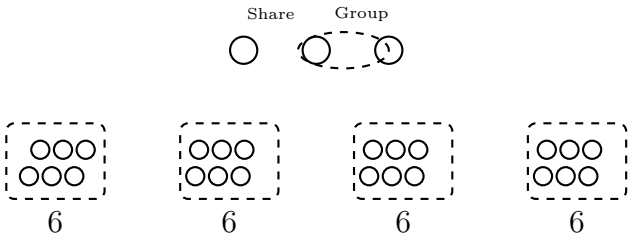
KEY POINT: Carrying

- When adding, if ones add up to 10 or more, carry to the tens place!
- Example: $6 + 7 = 13$, write 3 and carry 1 to tens.

$$\begin{array}{r} {\scriptstyle 1}\ 46 \\ +\ 27 \\ \hline 73 \end{array}$$

TIP

- Division is **sharing** or **grouping**.
- Example: $24 \div 4 = 6$ (4 friends each get 6).
- Or $24 \div 6 = 4$ (6 in a group makes 4 groups).



$24 \div 4 = 6$ apples in each basket

Quick Review: Division

Division = Sharing equally = Splitting into groups

$24 \div 4 = 6$ means "24 shared among 4 groups = 6 in each group"

Division is the opposite of multiplication:

- If $4 \times 6 = 24$, then $24 \div 4 = 6$ and $24 \div 6 = 4$
- If $5 \times 6 = 30$, then $30 \div 5 = 6$ and $30 \div 6 = 5$

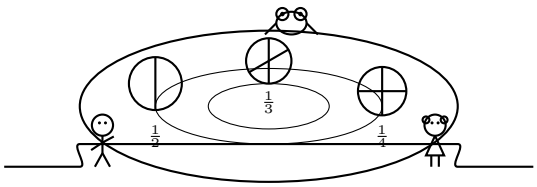
Key division facts:

$$10 \div 2 = 5 \quad 15 \div 3 = 5 \quad 20 \div 4 = 5 \quad 24 \div 6 = 4$$

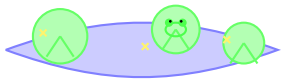
$$18 \div 2 = 9 \quad 21 \div 3 = 7 \quad 32 \div 4 = 8 \quad 36 \div 6 = 6$$

$$35 \div 5 = 7 \quad 42 \div 7 = 6 \quad 48 \div 8 = 6 \quad 54 \div 9 = 6$$

Fraction Pond



A sparkling pond appeared before them, with lily pads floating on the surface. Each lily pad was divided into equal parts!



A wise frog sat on one of the pads. "Ribbit! Welcome to Fraction Pond! A **fraction** shows parts of a whole!"

KEY POINT

- A fraction shows parts of a whole.
- Numerator = how many parts you have; denominator = total equal parts.
- Picture slicing a pizza into equal pieces.

"Look at these lily pads," Maya said. "This one is cut in half – that's $\frac{1}{2}$!"

"And this one is cut into 4 equal parts," Milo added. "Each piece is $\frac{1}{4}$, or one-fourth!"

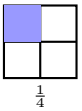
Fractions at a Glance

- **Half** ($\frac{1}{2}$): 1 part out of 2 equal parts.
- **Fourth** ($\frac{1}{4}$): 1 part out of 4 equal parts.

The frog smiled. "The **top number** (numerator) tells how many parts you have. The **bottom number** (denominator) tells how many equal parts make the whole!"

REMEMBER

- Numerator = parts you have. Denominator = total parts.
- $\frac{1}{4}$ is 1 out of 4 equal parts.



Quick Review: Fractions

A **fraction** represents parts of a whole:

$$\frac{\text{numerator (parts you have)}}{\text{denominator (total equal parts)}}$$

Examples:

- $\frac{1}{2}$ = 1 out of 2 equal parts (one half)
- $\frac{2}{3}$ = 2 out of 3 equal parts (two thirds)
- $\frac{3}{4}$ = 3 out of 4 equal parts (three fourths)

Comparing fractions with the same denominator:

$\frac{1}{4} < \frac{2}{4} < \frac{3}{4} < \frac{4}{4}$ (more parts = larger fraction)

Equivalent fractions: $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

Fraction Examples:



1 out of 2 2 out of 3 3 out of 4

Comparing Fractions

Rule: With the same-size whole, more shaded parts = larger fraction.

Examples: $\frac{1}{4} < \frac{2}{4} < \frac{3}{4} < 1$.