

Use Compensation

Part A • Make 10, Solve, and Correct

AR-U1-WS5

I can add within 20 by changing a number to 10 and correcting the change.

Name: _____

Date: _____

Period: _____

Step 1: See Why Compensation Works

Example: $9 + 6$

$$\begin{array}{ccc} 9 & \xrightarrow{\text{add } 1} & 10 \end{array}$$

1. Change 9 to 10 by adding 1.

2. Solve the easier problem: $10 + 6 = 16$.

3. Remove the extra 1: $16 - 1 = 15$.

You added 1 to make the problem easier, so you must subtract that same 1 at the end.

Step 2: Complete Each Compensation Path

1. $9 + 5$

$$\begin{array}{ccc} 9 & \xrightarrow{\text{add } 1} & 10 \end{array}$$

Easy problem: $10 + 5 = \underline{\quad}$

Remove the extra 1: $\underline{\quad} - 1$

Answer: _____

2. $8 + 7$

$$\begin{array}{ccc} 8 & \xrightarrow{\text{add } 2} & 10 \end{array}$$

Easy problem: $10 + 7 = \underline{\quad}$

Remove the extra 2: $\underline{\quad} - 2$

Answer: _____

3. $9 + 9$

$$\begin{array}{ccc} 9 & \xrightarrow{\text{add } 1} & 10 \end{array}$$

Easy problem: $10 + 9 = \underline{\quad}$

Remove the extra 1: $\underline{\quad} - 1$

Answer: _____

4. $7 + 6$

$$\begin{array}{ccc} 7 & \xrightarrow{\text{add } 3} & 10 \end{array}$$

Easy problem: $10 + 6 = \underline{\quad}$

Remove the extra 3: $\underline{\quad} - 3$

Answer: _____

5. Which compensation equation correctly solves $8 + 9$?

A. $10 + 9 - 2 = 17$

B. $10 + 9 + 2 = 21$

C. $10 + 8 - 1 = 17$

Circle one. Explain: We subtract _____ because we added _____ to change 8 into 10.

Use Compensation

Part A · Use Compensation in Real Life

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Step 3: Solve Useful Problems

6. Shopping

A notebook costs \$9 and markers cost \$8.

Change \$9 to \$10. Then remove the extra \$1.

$$\text{\$}10 + \text{\$}8 - \text{\$}1 = \text{\$} \underline{\hspace{1cm}}$$

7. Game Score

You have 8 points and score 8 more.

Change the first 8 to 10. Remove 2 at the end.

$$10 + 8 - 2 = \underline{\hspace{1cm}} \text{ points}$$

8. Yardage

A team gains 9 yards, then 7 more yards. Find the total.

$$\begin{array}{ccc} 9 & \xrightarrow{\text{add 1}} & 10 \end{array}$$

$$\text{Easy total: } 10 + 7 = \underline{\hspace{1cm}}$$

$$\text{Correct it: } \underline{\hspace{1cm}} - 1 = \underline{\hspace{1cm}} \text{ yards}$$

Step 4: Choose and Fix

9. Which solves $7 + 9$ correctly?

- A. $10 + 9 - 3 = 16$
- B. $10 + 9 + 3 = 22$
- C. $10 + 7 - 1 = 16$

10. Fix Noah's mistake.

Noah says: $9 + 4 = 10 + 4 = 14$.

He forgot to .

$$\text{Correct answer: } 14 - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

TEACHER CHECKPOINT

Your teacher will tell you whether to stop here or continue to Part B.

Use Compensation

Part B • Apply, Analyze, and Explain

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Step 5: Match and Check

11. Match each problem to its path.

A. $9 + 6$ $\underline{\hspace{1cm}} 10 + 7 - 3 = 14$

B. $8 + 5$ $\underline{\hspace{1cm}} 10 + 6 - 1 = 15$

C. $7 + 7$ $\underline{\hspace{1cm}} 10 + 5 - 2 = 13$

12. Did Ava use compensation correctly?

She changes 8 to 10 by adding 2.

She solves: $10 + 9 = 19$.

She removes the extra 2: $19 - 2 = 17$.

Circle: **YES** **NO**

Step 6: Complete the Missing Steps

13. Solve $9 + 10$ with the path.

9 add 1 10
 $\xrightarrow{\hspace{2cm}}$

Easy total: $10 + 10 = \underline{\hspace{1cm}}$

Correct it: $\underline{\hspace{1cm}} - 1 = \underline{\hspace{1cm}}$

14. Complete $6 + 8$.

Change 6 to 10 by adding $\underline{\hspace{1cm}}$.

Easy total: $10 + 8 = \underline{\hspace{1cm}}$.

Correct it: $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

Step 7: Use Compensation in Context

15. Concert Tickets

One group buys 9 tickets. Another buys 10.

How many tickets do they buy in all?

I changed 9 to 10 by adding $\underline{\hspace{1cm}}$.

$10 + 10 = \underline{\hspace{1cm}}$.

I remove the extra $\underline{\hspace{1cm}}$, so the total is $\underline{\hspace{1cm}}$.

16. Basketball Score

Your team has 9 points and scores 11 more.

Find the new score using compensation.

Change 9 to 10: add $\underline{\hspace{1cm}}$.

$10 + 11 = \underline{\hspace{1cm}}$.

$\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ points