

**Worksheet On Percentage
Increase And Decrease**

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Percentage
Increase And
Decrease**

**Mastering
Percentage
Increase
And
Decrease:
A
Comprehensive
Guide
to
Worksheet
s on
Percentage
Increase
And
Decrease**

Decrease

Percentage increase and decrease are among the most practical mathematical concepts we encounter in everyday life. From calculating discounts during a sale to understanding tax hikes, salary

raises, or population growth, the ability to compute percent change is an essential skill. For students, educators, and lifelong learners, a well-structured worksheet on percentage increase and decrease serves as a powerful tool to build confidence and fluency in this topic. This article explores everything you need to know about these worksheets: why they matter, how to create or use them effectively, and the key concepts they should cover. Whether you are a teacher designing

lesson plans or a student looking for extra practice, understanding the mechanics behind percent change will transform the way you handle numbers.

The Importance of Practicing with Dedicated Worksheets

Mathematics is not a spectator sport. To truly grasp percent change, repeated practice is necessary. A thoughtfully crafted worksheet

Worksheet On Percentage

Increase And Decrease

on percentage

increase and decrease offers several advantages:

- **Structured Learning:**

Worksheets break down complex problems into manageable steps, guiding learners from basic to advanced scenarios.

- **Instant Feedback:**

Many worksheets include answer keys, allowing students to self-assess and identify weak areas.

- **Real-World**

Problems often mimic everyday situations, such as price changes, exam score improvement s, or population shifts, making math tangible.

- **Customizable Difficulty:**

Teachers can adjust the number of steps, introduce decimal percentages, or include multi-stage problems to suit different grade levels.

Moreover, a consistent practice

routine using worksheets helps cement the difference between percentage increase and percentage decrease, reduces calculation errors, and builds mental math agility.

Core Concepts: Understanding Percentage Change

Before diving into worksheets, it's essential to revisit the fundamental formulas and logic behind percent change. A strong foundation will

make worksheet exercises much more effective.

The Formula for Percentage Increase

Percentage increase measures how much a quantity has grown relative to its original value. The formula is:

$$\text{Percentage Increase} = ((\text{New Value} - \text{Original Value}) / \text{Original Value}) \times 100$$

For example, if a store's revenue rose from \$200,000 to \$240,000, the increase is $(\$40,000 / \$200,000) \times 100 = 20\%$. Each

Worksheet On Percentage

Increase And Decrease

worksheets on increase and decrease (\$240 / percentage increase and decrease should include multiple problems like this, gradually introducing larger numbers and decimals.

$(\$240 / \$1,200) \times 100 = 20\%$. Notice that the denominator always remains the original value—this is a common point of confusion that worksheets help clarify.

The Formula for Percentage Decrease

Percentage decrease works identically but with subtraction in the opposite order:

$$\text{Percentage Decrease} = ((\text{Original Value} - \text{New Value}) / \text{Original Value}) \times 100$$

If a laptop's price drops from \$1,200 to \$960, the understanding of

Reverse Percentages

Advanced worksheets often include reverse problems. For instance: "A jacket now costs \$85 after a 15% decrease. What was the original price?" Solving such problems requires students to think backwards, reinforcing their

the relationship between the original value, the percentage change, and the final value.

Key Elements of an Effective Worksheet on Percentage Increase and Decrease

Not all worksheets are created equal. The best ones incorporate a variety of problem types, clear instructions, and real-life contexts.

Here is what to look for or include when designing your own:

Gradual Progression

Start with simple problems using whole numbers and percentages like 10%, 25%, or 50%. Then move to more complex ones involving fractions (e.g., 12.5% increase) or multi-step changes (e.g., a 20% increase followed by a 10% decrease).

Contextual Scenarios

Use scenarios that students can relate to: shopping discounts,

Worksheet On Percentage

Increase And Decrease

population growth and a discount sale”
in their city, test problem.
score

improvements, or
sports statistics.
For example: “In
2020, a town had
15,000 residents.
By 2024, the
population grew
by 8%. How many
residents were
there in 2024?”

Mixed Operations

Include both
increase and
decrease problems
in the same
worksheet to
prevent students
from becoming
complacent. A
good worksheet on
percentage
increase and
decrease might
alternate between
a “price hike” and

Space for Work

Leave ample room
for calculations.
Encourage
students to write
the formula before
plugging in
numbers. This
builds procedural
memory.

Answer Key

Provide clear,
step-by-step
answers. This
allows for
independent study
and reduces
frustration.

Sample Problems

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[tracker.dreammachineusa.org](https://www.tracker.dreammachineusa.org) by Mariana &
Carrillo • Knowledge is power. • Page 7

Practice Worksheet

Below is a set of example problems that mirror what you might find in a comprehensive worksheet. These illustrations also show how to structure the work.

Increase Problems

1. A book originally cost \$18. The price increased by 15%. What is the new price?

Solution:

$$\begin{aligned} \text{Increase} &= \\ \$18 * 0.15 &= \\ \$2.70; \text{New} \end{aligned}$$

for a $\begin{aligned} \text{price} &= \$18 \\ + \$2.70 &= \\ \$20.70. \end{aligned}$

2. Last year a factory produced 50,000 units. This year production increased by 12.5%. How many units were produced this year?

Solution:

$$\begin{aligned} \text{Increase} &= \\ 50,000 * & \\ 0.125 &= \\ 6,250; \text{New} & \\ \text{total} &= \\ 56,250 \text{ units}. \end{aligned}$$

Decrease Problems

1. A television priced at \$800 is on sale with a 25%

Worksheet On Percentage

Decrease And Increase

What is the sale price?

Solution:

Decrease =
 $\$800 * 0.25 =$
 $\$200$; *Sale*
price = $\$800$
 $- \$200 =$
 $\$600$.

2. After applying a 10% decrease, a car's fuel efficiency becomes 36 mpg. What was the original mpg?

Solution: 36
 mpg is 90%
 of original.
 $\text{Original} = 36$
 $/ 0.9 = 40$
 mpg.

price of a dress by 20%, then later offered a 10% discount on the new price. If the original price was \$50, what is the final price?

Solution:

After increase: $\$50$
 $* 1.2 = \$60$.

After discount: $\$60$
 $* 0.9 = \$54$.

The net change is an 8% increase overall.

2. The population of a city was 200,000. It decreased by 5% one year,

1. A store first then

Mixed and Multi-Step

increased by 8% the next year. What is the final population?

Solution:

Year 1:

$200,000 \times$

$0.95 =$

$190,000.$

Year 2:

$190,000 \times$

$1.08 =$

$205,200.$

How to Use a Worksheet Effectively

A worksheet on percentage increase and decrease is not just a sheet of paper; it's a learning tool. Here are strategies for maximizing its

benefit:

For Teachers

- **Warm-Up:**
Start with a quick mental math drill (e.g., "10% of 50, 20% of 30"). Then distribute the worksheet.
- **Pair Work:**
Have students solve problems in pairs, discussing each step. This promotes collaborative learning and verbalizing the math.
- **Challenge Problems:**
Include one or two

Worksheet On Percentage

“Increase” “Decrease”

problems that require multiple operations or reverse thinking.

- **Error Analysis:**
After completion, review common mistakes—like using the new value as the denominator—and discuss why they’re incorrect.

For Students

- **Read Carefully:**
Identify whether the problem asks for an increase or a

Underline keywords like “raised,” “discount,” “growth,” or “reduction.”

- **Write the Formula:**
Before calculating, write the appropriate formula. This habit reduces errors.
- **Check Reasonableness:** Ask: “Does my answer make sense?” A 50% increase should roughly double the number; a 50% decrease should halve it.

Downloaded from

- **Use Estimation:** Round numbers to check if your exact answer is plausible. For example, when finding 15% of \$83, estimate 10% (\$8.30) plus 5% (\$4.15) to get about \$12.45.

Common Pitfalls and How Worksheet s Address Them

Learners often trip over the same obstacles when dealing with percent change. A

well-designed worksheet can help overcome these hurdles.

Confusing the Base Value

Many students mistakenly use the new value as the denominator in percentage decrease problems.

Repeated practice, especially with reverse problems, clarifies that the original value always serves as the base.

Adding/Subtracting Percentages Directly

A 10% increase followed by a 10% decrease does not

Worksheet On Percentage

~~return to the original number.~~ **Increase And Decrease**

Ignoring Context
This is a classic trap. Worksheets that include multi-step scenarios help internalize the concept of compounding, which is a precursor to more advanced topics like interest rates.

Forgetting to Convert Percentages to Decimals

Especially with percentages like 12.5% or 0.5%, students may misplace the decimal.

Worksheets that require explicit decimal

conversion steps reinforce this skill.

When faced with a problem about population growth, students might compute a percentage but forget to add it to the original. Worksheets using real-world stories naturally embed the necessary operations within a narrative, making it harder to skip steps.

Real-Life Applications Beyond the Classroom

The beauty of a good worksheet on

percentage increase and decrease is that it directly transfers to daily life. Here are just a few examples of where these skills shine:

- **Personal Finance:** Understanding interest rates on savings accounts or credit card debt, calculating tip percentages, or comparing loan offers.
- **Shopping:** Determining the actual savings during a “Buy One Get One 50% Off” promotion or

a seasonal clearance.

- **Health and Fitness:**

Tracking weight loss or muscle gain as a percentage of body mass, or evaluating improvement in running times.

- **Data Analysis:** Interpreting news reports that state “unemployment fell by 2%” or “company profits rose 15%.” Without a solid grasp of percent change, such headlines can be misleading.

Worksheet On Percentage

- **Increase And Decrease** is far

Nutrition: more than a
Adjusting collection of
recipes based problems—it is a
on serving bridge between
size changes, abstract
which often mathematics and
involves practical decision-
scaling making. Whether
ingredients you are a teacher
by a looking to
percentage. reinforce key

By working through a dedicated worksheet, students build the mental framework to handle these tasks swiftly and accurately, turning math from a classroom subject into a lifelong tool.

Conclusion

A worksheet on percentage increase and effective. As you

work through the problems, remember that each calculation hones your ability to think critically about growth, reduction, and scale. So the next time you see a

“20% off” sign or hear about a “10% population increase,” you will not just understand the number—you will understand the change behind it.