# Percentages

### Prior Knowledge:

To use scale factors to calculate percentages

### Activities:

What would you multiply by to…

1. Find 34% of 192.
2. Find 104% of 723.

### Prior Knowledge:

To use scale factors to increase and decrease by a given percentage.

### Activities:

Multiply an amount by 1.94 and I will\_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Multiply an amount by 0.81 and I will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Multiply an amount by 0.29 and I will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Multiply an amount by 1.07 and I will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Multiply an amount by 0.91 and I will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Multiply an amount by 1.075 and I will \_\_\_\_\_\_\_\_\_\_\_\_ it by \_\_\_\_\_\_\_\_\_%.

Use your calculator to:

1. Increase 420 by 82%.
2. Decrease 509 by 16%.
3. Increase 271 by 7%.

### Prior Knowledge:

To use scale factors to find what percentage one number is of another?

### Activities:

1. What is 34 as a percentage of 74?
2. What is 57 as a percentage of 100?
3. What is 17 as a percentage of 108?

Extensions:

1. What is the overall percentage change in the price shares if they experience:
   1. A drop of 15% followed by an increase of 20%.
   2. An increase of 20% followed by a drop of 15%.
   3. A drop of 35% followed by an increase of 30%.
   4. An increase of 30% followed by a drop of 35%.
   5. What do you notice about the order in which you calculate percentage changes?
2. \*The price of a theatre ticket has increased by 40%, but the takings have increased by only 26%. What percentage has the number of spectators decrease by? (Hint: It’s not 14%!)
3. Two banks offer two different deals. Bank A offers 33% interest over a three year period. Bank B offers 10% interest each year for three years. Which bank would you choose?
4. \*Find all the two digit numbers which are increased by 75% when their digits are reversed.

### Aims:

To reverse the effect of percentage increase and decreases

### Activities:

My sunflower grows by 25% each week. It is currently 2m tall. How tall was it a week ago?

After a pay cut of 8%, a nurse earns £14 per hour. How much did he earn before the cut?

The time it takes me to cycle home decreases by 20% if I leave after 6pm. This means that it takes me 6 minutes less if I cycle home after 6pm. How long does it take me to cycle home if I leave before 6pm?

Percentages D practice

<https://mathsbot.com/tools/percentageMultipliers>

