

# Hydrogen peroxide strengths

Focus

To change hair colour permanently, salons use hydrogen peroxide mixed with bleach, liquid tints or cream-based tints. It is vital that the correct strength peroxide is used in order to achieve the correct colour result.

**Hydrogen peroxide** comes in different **strengths**. The strength can be described in two ways:

## Percentage strength (%)

This tells you how much **pure hydrogen peroxide** is in the solution.

### Examples

- In every 100 ml of a **3% solution**, 3% (3 ml) will be pure hydrogen peroxide and 97 ml will be water.
- In every 100 ml of a **6% solution**, 6% (6 ml) will be pure hydrogen peroxide and 94 ml will be water.

## Volume strength (vol.)

This tells you how much **oxygen** is released from 1 ml of hydrogen peroxide solution.

### Examples

- 1 ml of **10 vol.** gives 10 ml oxygen.
- 1 ml of **20 vol.** gives 20 ml oxygen.

The stronger the solution:

- the more **pure hydrogen peroxide** it contains
- the more **oxygen** can be released in the hair shaft.

**Hydrogen peroxide** releases **oxygen** when applied to the hair.

The **oxygen** reacts with natural hair pigment, making it lighter.

The **oxygen** joins onto the small hair-colour molecules, which join together to form large coloured molecules that are too big to leave the hair shaft.



I can't find the 10 vol.  
Is 9% just a tiny bit weaker?

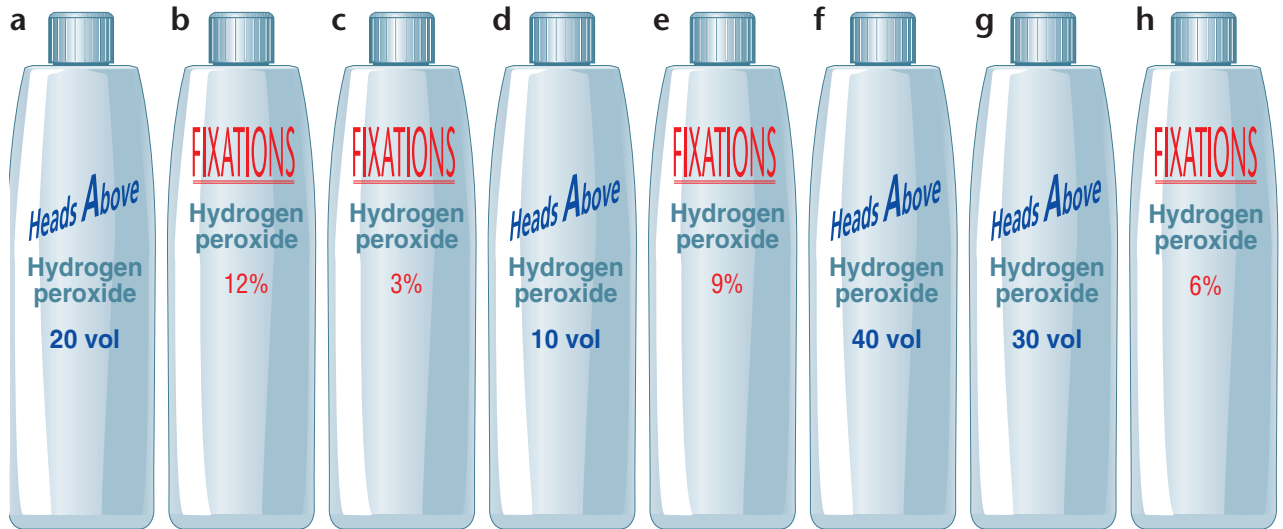
## Try this

- 3% is the same strength as 10 vol.
- 6% is the same strength as 20 vol.
- \_\_\_% is the same strength as 30 vol.
- 12% is the same strength as \_\_\_ vol.

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## Task

### Task 1



- Put the *Heads Above* hydrogen peroxide solutions in order of strength, starting with the weakest.   d      \_\_\_    \_\_\_    \_\_\_
- Put the *Fixations* hydrogen peroxide solutions in order of strength, starting with the weakest.    \_\_\_    \_\_\_    \_\_\_    \_\_\_
- Match the hydrogen peroxide solutions that are the same strength.
 

a is the same strength as ___ .	c is the same strength as ___ .
b is the same strength as ___ .	e is the same strength as ___ .

### Task 2

Complete the following sentences.

- |  |                                      |
|--|--------------------------------------|
| a 6% is <u>  2  </u> times stronger than 3%. | c 12% is ___ times stronger than 3%. |
| b 9% is ___ times stronger than 3%.          | d 12% is ___ times stronger than 6%. |
- |   |
|---|
| a 20 vol. is <u>  2  </u> times stronger than 10 vol. |
| b 30 vol. is ___ times stronger than 10 vol.          |
| c 40 vol. is ___ times stronger than 10 vol.          |
| d 40 vol. is ___ times stronger than 20 vol.          |
- |  |   |
|--|---|
| a 6% is ___ times stronger than 10 vol.  | b 9% is ___ times stronger than 10 vol. |
| c 12% is ___ times stronger than 10 vol. |   |