**Training Fiche**

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| **Title** | Fundamentals of finances | |
| **Keywords** | Temporary value of money, Interests, Interest rate, Capitalization and Discounting, Simple and Compound Interest, APR. | |
| **Provided by** | UMA | |
| **Language** | English | |
| **Objectives** | * To provide basic financial literacy. * Facilitating understanding of financial operations. * Improving decision-making skills in the personal and family sphere. | |
| **Learning outcomes** | * Recognise the basic financial operations. * Identify the key elements of financial operations: initial capital, final capital, interest and interest rate. * Know how to interpret the meaning of the different ways of expressing the interest rate of an operation: nominal rate, effective rate and APR. * Making it easier to track personal finances. | |
| **Training Area** | Financial Literacy Alphabet | X |
| Financial Decision-making and Management |  |
| Finances for Good |  |
| **Content index** | 1.- What is a financial operation?  2.- Difference between the "Interest Rate" and "Interest" of a financial operation.  3.- Why is time so important when we talk about money?  4.- Capitalization and Discounting of money.  5.- Simple and Compound Interest.  6.- What is the NIR and APR? | |
| **Content development**  **(1.500 words max.)** | **1.- What is a financial operation?**  Financial operations are very diverse and are carried out continuously in the world of finance. Examples of financial operations are: opening a current account, a term deposit, a savings book, taking out a loan, taking out a pension plan, buying shares…  Basically, a financial operation consists of an exchange of available capital at different points in time.  Whoever **lends** the money is called the **lender or creditor**. The person who **receives it** is called the **borrower or debtor**. It is essential to emphasise that the capital provided by both are equivalent at all times.  **2.- Difference between the "Interest Rate" and "Interest" of a financial operation.**  Money, like any product we want to acquire, has a price. Interest rate is the price of money. That is, what we pay to a bank for lending us money (e.g. a mortgage), or what the bank pays us for depositing our money (e.g. a deposit). The interest rate is always expressed as a percentage, refers to a given period of time and is applied to the amount lent or deposited.  The term "**interest**" is often used as a synonym for "**interest rate**", but it is not the same thing; the interest rate is a percentage and the interest is the result of applying that percentage to the principal over the respective term.  For example, if we ask the bank for a loan of €10,000 and the interest rate is 10% per year, the interest is €1,000 (10% x 10,000=€1,000), and I will pay the bank a total of €11,000 for having it.  **3.- Why is time so important when we talk about money?**  We all know from experience that the prices of the goods and services we buy tend to increase over time. As a consequence, the value of money is decreasing and with it our purchasing power. In other words, with the same amount of money, for example €1000, we can buy less today than a year ago.  This allows us to understand that **the same amount of money will have a different value depending on when it is received.**  When there is inflation, i.e. when there is a continuous increase in prices over time, this is obvious. But **what happens in a situation of complete price stability, i.e. no inflation?** Well, even in that situation, we would prefer to have the money now rather than wait a year, because even if with that €1000 we could acquire the same goods today as in a year's time, by having that money today we could make the €1000 profitable and in a year's time, we could recover that sum plus the return it has generated.  Therefore, each amount of money is associated with a date. In other words, €1000 on 15 January is not worth the same as €1000 on 15 March.  **4.- Capitalization and Discounting of money.**  **Capitalization:** this consists of giving up current capital (by lending or investing it) in order to obtain a higher capital in the future. The difference between the value of the future capital and the current capital is the interest.  Example: “taking out a fixed-term deposit”, i.e. we deposit the money in a financial institution and we get it back later, plus interest; it is similar to when a financial institution lends capital and gets it back later increased with the corresponding interest.  On capitalization it is true that:  **Future capital = Current capital + Interest.**  **Update or Discounting:** is the early disposal of future capital, for which a lower amount (current value) is received. The difference between the future capital and the current capital is the discount.  Example: “cashing a promissory note in advance”; we have a promissory note, which is a document that expresses that we are going to be paid money at a certain future date. If we want to be paid before the maturity date, we take the promissory note to a financial institution that will advance us the money, but applying a discount according to the time the payment is anticipated.  In the discounting operation, the following applies:  **Current capital = Future capital - Discount.**  Since discounting calculates the current value of a principal, it is also called “updating”.  **5.- Simple and Compound Interest.**  The interest calculation of a financial operation can be done using **Simple Interest** or **Compound Interest**:  Basically, the difference is that in **simple interest**, interest is calculated only on the capital invested at the beginning, without taking into account the possible reinvestment of the interest produced by our money. On the other hand, in **compound interest**, the interest earned is added to the initial capital to produce new interest in the following period of the operation. For this reason, the capital grows at the end of each of the periods and the interest, calculated on a larger capital, also grows, resulting in a significantly higher result.  **For example**, let’s suppose that we want to do an investment of 10,000 euros for 3 years at a simple interest rate of 10% per year. The returns on our investment are as follows:   * Year 1: 1,000 euros (10% of 10,000 euros). * Year 2: 1,000 euros (10% of 10,000 euros). * Year 3: 1,000 euros (10% of 10,000 euros).   The total return on the investment would be €3,000. That is, we would withdraw the €1,000 of interest and still get 10% of €10,000 in the following year, as the capital on which interest is calculated would remain unchanged at the initial €10,000 and the annual return is the same every year because the interest rate (10%) is always applied to the initial amount (€10,000).  In the case of making the same investment for 3 years, but applying 10% compound interest, we would obtain the following returns:   * Year 1: 1,000 euros (10% of 10,000 euros). * Year 2: 1,100 euros (10% of 11,000 euros, as we add the 1,000 euros produced in year 1 to the initial 10,000 euros). * Year 3: 1,210 euros (10% of 12.100 euros, as we add to the initial 10,000 euros the 1,000 euros produced in year 1 and the 1,100 euros produced in year 2).   The total return on investment is €3,310, higher than the return obtained at a 10% simple interest rate (€3,000). This is because year after year, the returns generated by the investment are reinvested and therefore also earn interest. Although the interest rate is the same every year (10%), the initial capital is not, as it increases annually when the interest earned in the previous period is added.    **6.- What is the NIR and APR?**  In any contract for banking products such as deposits, loans, credits or mortgages, the NIR and APR values must be indicated.  The **NIR** (**N**ominal **I**nterest **R**ate), is the interest rate that has been agreed with the financial institution for the operation. It reflects the price the institution charges for lending or pays for depositing.  It does not include expenses or commissions, and its periodicity does not have to be annual.  The [**APR**](https://www.bbva.com/es/la-tae-una-hipoteca-explicada-5-tips/) (**A**nnual **P**ercentage **R**ate), as well as the NIR, it is expressed as a percentage, and is calculated according to a standardised mathematical formula that takes into account the nominal interest rate (NIR) of the operation, the frequency of payments (monthly, quarterly, half-yearly, etc.), the bank charges, and the expenses of the operation.  The difference between the NIR and the APR is that the APR includes, in addition to the NIR, the number of times interest is paid per year, the expenses and commissions associated with the operation.  Therefore, the NIR may be an informative indicator, but in reality it is of little use to the consumer as it does not include the possible expenses and commissions of the operation. However, the APR is a very useful index for consumers to know how much an investment is really worth to them or if the credit that their bank is offering them has good conditions or not, and to compare offers.  For example, in a mortgage loan, the NIR will tell us the interest that I will pay for the money that the bank lends me. The APR will tell me the interest plus the costs associated with the operation. This rate is precisely the percentage that we are interested in knowing as it will allow us to know in detail how much the loan is really going to cost, allowing us to compare it with other offers.  Both concepts, NIR and APR, are official and are endorsed by the national financial authorities of each country, although in each geography these terms are called differently. | |
| **Glossary (5 glossary terms)** | **Accrued of interest:**  Accrued interest represents the cumulative monetary amount resulting from an investment or debt over an elapsed period of time.  **Capitalization:**  This consists of giving up current capital (by lending or investing it) in order to obtain a higher capital in the future. The difference between the value of the future capital and the current capital is the interest.  **Discounting:**  Is the early disposal of future capital, for which a lower amount (current value) is received. The difference between the future capital and the current capital is the discount.  **NIR:** (**N**ominal **I**nterest **R**ate), is the interest rate that has been agreed with the financial institution for the operation. It reflects the price the institution charges for lending or pays for depositing.  It does not include expenses or commissions, and its periodicity does not have to be annual.  **APR:**  The [**APR**](https://www.bbva.com/es/la-tae-una-hipoteca-explicada-5-tips/) (**A**nnual **P**ercentage **R**ate), as well as the NIR, it is expressed as a percentage, and is calculated according to a standardised mathematical formula that takes into account the nominal interest rate (NIR) of the operation, the frequency of payments (monthly, quarterly, half-yearly, etc.), the bank charges, and the expenses of the operation. | |
| **Self-evaluation (5 multiple choice queries and answers)** | 1. The expression "temporary value of money" means:   1. **The value of money is related to the time at which it can be disposed of.** 2. It makes no difference whether you have the same amount of money available today or tomorrow. 3. Even if we have capital at our disposal today, that does not imply any possibility of profit.   2. A person who deposits his or her money in a bank is:  **a) Is creditor of the bank.**  b) May be considered a borrower (even if it has not actually made a loan).  c) Is a debtor of the bank.  3. Mark the correct answer concerning to the interest of a loan:  **a)**  **The price paid, in addition to the principal or capital, for borrowing money for a period of time.**  b) They are expressed as a percentage.  c) No matter how long it takes to calculate.  4. The APR:  **a)**  **Allows comparison between savings and investment products.**  b) Only takes into account the interest rate.  c) It is generally lower than the agreed interest rate.  5. The APR of a loan:  **a)**  **It includes in its calculation the commissions and other expenses that the bank charges to the debtor.**  b) It does not take into account commissions and term.  c) It does not depend on the nominal interest rate applied by the bank. | |
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| **Resources (videos, reference link)** |  | |