

	FISICA & QUIMICA – 2º ESO Ficha Tema 4	Grupo:
Apellidos:	Nombre:	Fecha:

Vocabulary:

phase change; chemical change; physical change ; reactants ; products ; stoichiometric coefficient, the law of conservation of mass; the law of definite proportions; abnormal greenhouse effect; climate change; the destruction of the ozone layer; acid rain

1. Complete these sentences.

- a) In a _____ change initial substances and final substances are the same.
- b) In a _____ change initial substances and final substances aren't the same.
- c) In chemical _____, initial substances are called _____, and final substances are the _____.
- d) In a _____, new substances are formed.

2. Are these changes physical or chemical?

- a) Mixing salt and water
- b) Water boils at 100 °C
- c) Iron oxidize.
- d) A paper burning
- e) Photosynthesis
- f) Filtering sand from water.

3. Are these changes physical or chemical?

- a) Rusting metal
- b) melting butter

- c) melting ice
- d) mixing lemonade powder into water
- e) mowing the lawn
- f) Rotten food
- g) Bleaching your hair
- h) firework exploding

4. Balance the next chemical equations:

- a) $S_8 + O_2 \rightarrow SO_3$
- b) $N_2 + O_2 \rightarrow N_2O$
- c) $HgO \rightarrow Hg + O_2$
- d) $CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$

5. If 306 g of a substance reacts completely with 72 g of another, what will be the sum of the masses of the products? What law have you applied?

6. We have a 224 g piece of iron which combines with oxygen to form iron oxide. Are the following statements true or false? Justify your answers.

- a) The mass of iron oxide formed will be the sum of 224 g plus the mass of the oxygen that combined with the iron.
- b) The mass of iron oxide will be less than the iron at the start.
- c) The mass of iron oxide will be the same as the iron.

7. 8 g of hydrogen reacts with 64 g of oxygen and forms 72 g of water.

- a) Check that the reaction follows the law of conservation of mass.
- b) Calculate the mass of water that would form if 20 g of hydrogen fully react.
- c) What law have you applied?

8. Classify the following products as natural or artificial:

- a) Unrefined sugar b) Saccharin c) Wood d) Formica e) Linen f) Cotton g)
Nylon h) Acrylic i) Chlorophyll j) ivory k) leather

Natural:

Artificial:

9. Fill the gaps with the next words ;

greenhouse effect; global warming ; acid rain ; the ozone layer

- a) Substances known as CFC (which includes chlorine) in the atmosphere cause chemical reactions that destroy _____.
- b) Fossil fuels often have sulfuric impurities. When burned with air containing oxygen and nitrogen, the impurities produce sulfur dioxide and nitrogen oxides, causing_____.
- c) One of the main gases responsible for the_____ is carbon dioxide. As the use of fossil fuels has increased the amount of this gas in the atmosphere over the last two decades, the atmosphere is retaining undesired excess energy. This causes an abnormal greenhouse effect. If CO₂ emissions continue to rise, the increase in the average temperature of the Earth will continue to increase, so the _____ of our planet will have catastrophic consequences.

10. Match the problem with the description:

Greenhose effect; Acid rain; Global warming, climate change

- a) There is an increase in temperatura in the lower atmosphere
- b) Atmosphere gases absorb the Sun's radiation.
- c) Water cycle is affected
- d) There are variations in local climate.

11. Say whether this statement is true or false (explain your answer):

'Carbon dioxide emissions from the use of fossil fuels are causing a hole in the ozone layer, which has repercussions on the climate at the planetary level'.

Reactions

K O D P I L L C Q W L F V T I
 D Z Z P C X E B H S F X E U T
 H O E A I T E K X J E U T T D
 W N P D R N W G X K H R A Z R
 D E U P T E T P L C T S M I C
 Y L Z H E I K B A J O T I F H
 N A T Y M C J K C D A N L S I
 I Y T S O I X R I K H A C T B
 A E G I I F W I M N G T V C F
 R R H C H F R F E Q Z C A U Y
 D E H A C E H B H P I A S D Q
 I B O L I O Z H C I F E G O D
 C A U V O C M L F C O R S R D
 A E Y X T K S Q F T Q U H P K
 F H I T S O L U V R U G N U M

CHEMICAL
 PHYSICAL
 REACTANTS
 PRODUCTS
 STOICHIOMETRIC
 COEFFICIENT
 CLIMATE
 OZONELAYER
 ACIDRAIN