

8 SCIENCE CHEMISTRY ASSIGNMENT

The Alchemists

Name: _____

Teacher: _____

Form: _____

Due date: _____

ANSWER
KEY



ANSWER
KEY

Today, the study of physical and chemical changes is called chemistry and the people who study them are known as chemists. Before chemistry, the study of physical and chemical changes was surrounded by myth and magic. These studies were performed by a group of people called alchemists. Today, scientists know that most of the things alchemists tried to achieve are technically impossible, however, many of the techniques they developed become the foundations of modern chemistry.

Aim: This assignment will allow you to find out about the alchemists and some of the legends and myths in alchemy.

IMPORTANT INFORMATION

Plagiarism

- This assignment is to be done individually, not with a partner.
- You must write in your own words not copy sentences word for word from another student or another source.
- Plagiarising = instant zero on assignment and you will have to re-do it.

Referencing

- You must reference your information (except text book information).
- Include a minimum of 4 references, 2 must be from books.
- Use the referencing style below and found at the back of your school diary.
- If you are still unsure on how to reference correctly, ask your teacher.

How to reference a book:

Tsutaya, K. (2011). Crafting with Cat Hair: Cute Handicrafts to Make with Your Cat. Philadelphia: Quirk Books.

Author's last name, first letter of first name. (Year of publication). Title of book. Place of publication: name of publisher.

How to reference a web site:

Rice, C. (2013). Cute cats could be key to learning new languages. Retrieved February 8, 2014 from www.bbc.co.uk/news/technology-25103362

Author's last name, first letter of first name. (Year of publication). Title of website. Date you retrieved the information, website

Assessment policy

Have sick note/legitimate reason from parent = new negotiated due date.

Assignment not submitted on due date and no sick note from parents = -20% mark

Assignment not submitted on new negotiated due date = -40% mark

- + Letter home to parents

- + Must attend academic completion to complete assignment

OR

Submit assignment to student services before academic completion date and academic completion not necessary.

Academic completion not attended = zero on assignment + Saturday detention

If you know that you cannot submit your assignment on the due date, let your teacher know BEFORE the due date (email them if you are not in school) or just email them your assignment the night before.

1. State where the word 'alchemy' originates from and explain what the word means.

(2 marks)

- comes from the Arabic word Alkimia

- means 'the art of transformation'

2. Alchemists studied physical and chemical change by trial and error rather than using scientific method. Explain what this means.

(2 marks)

Alchemists repeated the same process over and over again whereas scientific methods involve the use of a hypothesis, discussion and conclusion so the experiment can be repeated and altered.

3. Alchemists tried to change metals from one type to another. Outline which specific metals they were trying to change and what they were hoping they would change into.

(2 mark)

Lead into gold & silver

4. Alchemists tried to discover the panacea, universal solvent, and the elixir of life.
Describe what each of these were.
(Minimum of six sentences).

(6 marks)

Panacea: a single medicine that
could cure all diseases. (2)

universal solvent: a liquid that could
dissolve anything. (2)

elixir of life: mythical potion that
grants drinker eternal life and/or
eternal youth (2)

5. The Philosopher's Stone is one of the most well-known myths of the alchemists. Describe what the Philosopher's Stone was, why it was one of the most sought after objects by alchemists in Europe, and what it was thought to be able to do. (3 marks)


(Minimum of three sentences).


- was a stone or pool (1)
- believed to have the ability to change lead into gold (1)
- could give ultimate wisdom (1)
- could give eternal life

- Sought after due to above reasons (1)

6. Western alchemists used symbols to represent the four Greek elements. State the four elements and draw their symbol next to each one. (4 marks)

(0.5) air (0.5)


(0.5) water (0.5)


(0.5) fire (0.5)


(0.5) Earth (0.5)


7. Explain the key differences between alchemy and modern science. (2 marks)

(Minimum of two sentences).

or something similar

- Alchemy did not make use of scientific method
- modern science does make use of scientific method
- Alchemy used practices related to mythology, magic, religion and spirituality
- modern science/chemistry is makes use of how elements & compounds react & why.

Choose one of the following well-known alchemists below and find out the following information.

John Dee

Jan Baptist van Helmont

Muhammad ibn Zakariyā Rāzī

Izz al-Din Aydamir al-Jaldaki

1. Date of birth.

(1 mark)

2. Date of death.

(1 mark)

3. Place of birth.

(1 mark)

4. Write a brief biography of your chosen alchemist (can include early life, marriage, children, education). (4 marks)
(Minimum of four sentences).

5. Describe two ways that your chosen alchemist contributed to science. (Minimum of four sentences).

(4 marks)

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6. Write an interesting fact about your chosen alchemist.

(1 mark)

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MARKING KEY

Content	Description		Your mark
Research	Questions	33	
Referencing	Minimum of 3 references	1	
	Variety of sources - minimum of 1 book reference	1	
	Referenced in correct format	1	
Presentation	Correct spelling	1	
	Correct grammar	1	
Total mark		38	

Mark as percentage %