

# Case Study: Prof. Mildred Cohn

Chemistry - Key Stage 3

Miss Charlton



# Where did Mildred work after graduating?

A

NASA

B

NACA

C

Washington University

D

In a laboratory



# What was Mildred's PhD in?

A

Biomedical Science

B

Microbiology

C

Physical Chemistry

D

Physics



# What does a Mass Spectrometer measure?

A

The mass of molecules

B

The charges of molecules

C

The structure of molecules

D

The content and purity of samples



# What does ATP stand for?

A

Aluminium Triphorous

B

Astatine Trisulphate

C

Adenosine Triphosphate

D

Association of Top  
Physicists



# What is adenosine triphosphate?

A

A compound that transports water in and out of cells

C

A disease that kills your cells

B

An element which moves energy around muscles

D

A compound which transports energy within of cells



## Complete the sentences...

All organisms must respire, respiration releases \_\_\_\_\_  
causing...

Key words:

Temperature, constant, distributed.



# Uses of ATP in Plants and Animals

<u>Plants</u>	<u>Animals</u>
To continue chemical reactions	To continue chemical reactions
To make complex molecules from products of <b>photosynthesis</b>	To make complex molecules from products of <b>digestion</b>
For transporting substances via phloem	For regulating a constant body temperature
	For muscle contractions



# Complete the task

## Compare the uses of ATP in plants and animals (4 marks)

- ATP stands for ... a compound which transports ...
- In plants it is used to ... however in animals it is used for ...
- Similarly to animals, plants use ATP for ...
- On the other hand plants ... whereas animals ...
- Unlike plants, animals use ATP for ...



# Answers



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## Complete the sentences...

All organisms must respire, respiration releases **energy** causing...  
the temperature of the organism to remain constant as the  
thermal energy is distributed.



# Compare the uses of ATP in plants and animals (4 marks)

- ATP stands for adenosine triphosphate, a compound which transports energy quickly within cells.
- In plants it is used to transport substances in the phloem to the rest of the plant **however** in animals ATP is used for muscle contractions so animals can move.
- **Similarly** to animals, plants use ATP for building complex molecules such as carbohydrates, proteins and lipids and **also** to continue chemical reactions to keep the organism alive.
- **On the other hand** plants build complex molecules from products of photosynthesis **whereas** animals build from digestive products.
- **Unlike** plants, animals use ATP for maintaining a constant body temperature.

