

Allotropes of carbon: flashcards

Education in Chemistry

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rsc.li/37VMEhr

Use these flashcards to explore the different properties and uses of four allotropes of carbon – diamond, graphite, graphene and buckminsterfullerene.

These differentiated flashcards are designed to be used alongside the allotropes of carbon infographic poster. Learners extract information from the infographic to complete the cards. Additional prompts are included on some of the flashcards to encourage independent research beyond the infographic.

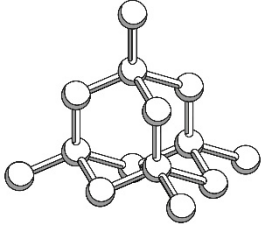
Flashcards are a great way to organise information for revision. They could also be used for small group work, a market-stall style activity or a homework research task.

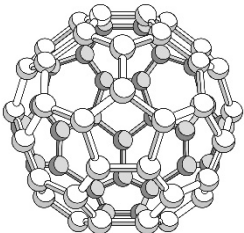
The infographic is designed to be displayed as a poster in the classroom. However, this activity could also be carried out with the infographic displayed on a projector or as printed handouts shared amongst small groups. Download the pdf with the link above.

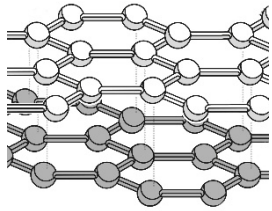
Differentiation

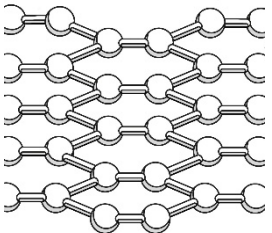
The cards have been differentiated to offer stretch or support as required.

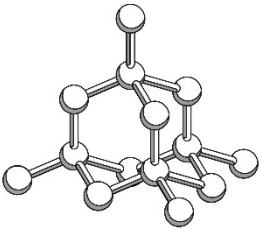
Stretch (blue edge)	Support (yellow edge)
Most answers are free text allowing learners to articulate understanding in their own words.	Answers are in a variety of formats including one word, multiple choice and free text answers.
Questions are at a higher level on Bloom's taxonomy (describe/explain).	Questions are more structured (state/why?).
Each card has space to add uses beyond those included in the infographic, based on independent research.	All uses can be found on the infographic with the exception of one use of buckminsterfullerene. This could be used as an extension or homework activity.
Learners need to find three uses for each allotrope.	Learners need to find two uses for each allotrope.

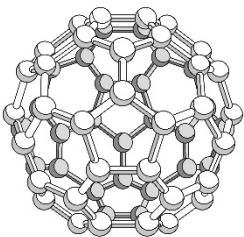
Allotrope: Diamond			
		Description of structure and bonding:	
	Ancient or modern discovery?		No. of bonds on each carbon atom:
	Use	Explanation for use	

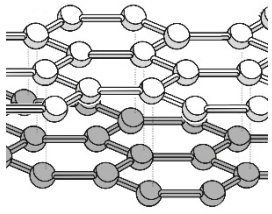
Allotrope:			
		Description of structure and bonding:	
	Ancient or modern discovery?		No. of bonds on each carbon atom:
	Use	Explanation for use	

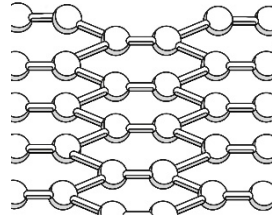
Allotrope:			
		Description of structure and bonding:	
	Ancient or modern discovery?		No. of bonds on each carbon atom:
	Use	Explanation for use	

Allotrope:			
		Description of structure and bonding:	
	Ancient or modern discovery?		No. of bonds on each carbon atom:
	Use	Explanation for use	

Allotrope:			
		Shape:	
		Type of bonds (tick one):	<input type="radio"/> Giant ionic <input type="radio"/> Giant covalent <input type="radio"/> Simple covalent
	Historic or modern discovery?		No. of bonds on each carbon atom:
	Use	Why is it a good material for this purpose?	
	Drill bits		
Jewellery			

Allotrope:			
		Shape:	
		Type of bonds (tick one):	<input type="radio"/> Giant ionic <input type="radio"/> Giant covalent <input type="radio"/> Simple covalent
	Historic or modern discovery?		No. of bonds on each carbon atom:
	Use	Why is it a good material for this purpose?	
	Drug delivery		

Allotrope:			
		Shape:	
		Type of bonds (tick one):	<input type="radio"/> Giant ionic <input type="radio"/> Giant covalent <input type="radio"/> Simple covalent
	Historic or modern discovery?		No. of bonds on each carbon atom:
	Use	Why is it a good material for this purpose?	
	Pencil leads		
Nuclear reactor cores			

Allotrope:			
		Shape:	
		Type of bonds (tick one):	<input type="radio"/> Giant ionic <input type="radio"/> Giant covalent <input type="radio"/> Simple covalent
	Historic or modern discovery?		No. of bonds on each carbon atom:
	Use	Why is it a good material for this purpose?	
	Solar cells		
Electronic displays			