CHEMISTRY YEAR 11 - MODULE 1 - LESSON 17

Periodic Trends: Atomic Radius

Use this worksheet after reading the lesson to practise the key ideas and prove you can meet the success criteria.

Name _____

Date _____

Class _____

1. Key Ideas

Why does sodium have a larger atom than magnesium even though the two elements sit beside each other? Atomic radius follows a clear periodic pattern once you track two competing ideas: how many occupied shells an atom has, and how strongly the nucleus pulls on the outer electrons.

- What atomic radius means in periodic-trend questions
- How shell number changes atomic size

2. Success Criteria

By the end, you should be able to:

- What atomic radius means in periodic-trend questions
- The trend across a period and down a group
- That cations are smaller and anions are larger than their parent atoms

3. Key Terms

Key idea
The central concept from Periodic Trends: Atomic Radius.

Evidence
Information, observations or calculations used to support an answer.

Explain
Give a reasoned answer that links cause and effect.

Apply
Use a learned idea in a new example, problem or scenario.

4. Activity: Build the Lesson Map

Use the lesson to complete the table. Keep answers brief but specific.

Prompt	Your answer
Main concept	
Important example	
Common mistake to avoid	
How this links to the next lesson	

5. Short Answer Questions

1. 1. Which atom is larger: Li or K? Explain using shell number and shielding.

BAND 3 3 MARKS

2. 2. Which atom is smaller: P or Cl? Explain using effective nuclear charge.

BAND 4 3 MARKS

3. 3. Which is larger: Na or Na + ? Explain why.

BAND 5 3 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Periodic Trends: Atomic Radius but does not use evidence or reasoning.

Improve the answer by writing a stronger response that uses accurate terminology, a relevant example and a clear explanation.

7. Multiple Choice

1. What is the best first step when answering a question about Periodic Trends: Atomic Radius?

- [ ] A. Identify the key concept being tested
- [ ] B. Write every fact from memory
- [ ] C. Ignore the command word
- [ ] D. Skip examples and evidence

2. Which answer would show stronger understanding of Periodic Trends: Atomic Radius?

- [ ] A. An answer with accurate terms and reasoning
- [ ] B. A copied definition only
- [ ] C. A single-word response
- [ ] D. An answer with no example

3. What should you do if a question asks you to explain?

- [ ] A. Link the idea to a reason or cause
- [ ] B. List unrelated facts
- [ ] C. Only draw a diagram
- [ ] D. Write the shortest possible answer

8. Success Criteria Proof

Finish with evidence that you can do each success criterion.

SUCCESS CRITERION 1

Prove that you can: What atomic radius means in periodic-trend questions

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The trend across a period and down a group

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: That cations are smaller and anions are larger than their parent atoms

BAND 5 4 MARKS

One thing I still need help with: