

Exercise walk-through

Contextualizing the Scientific Revolution and the Enlightenment ■ 4.1

eXercise

You must be able to

- name the conditions that made a new natural philosophy possible
- explain the role of instruments, mathematics and communication
- state what the Enlightenment applied and to what
- avoid narrating discoveries instead of naming conditions

Method — Conditions

Recovered classical texts and the habit of checking them; instruments extending the senses; mathematics able to express regularities; printing and correspondence networks carrying results between investigators.

Method — What each supplied

Instruments made observation exceed unaided sight. Mathematics made results comparable and predictions testable. Communication made findings cumulative rather than isolated.

Method — What the Enlightenment applied

It took the method that had worked on nature — observation, reason, scepticism toward inherited authority — and applied it to government, religion, law and society.

Practice 2.1 ■ 3 marks

Name three conditions for the Scientific Revolution.

Solution 2.1

Worked steps

any three of: recovered classical texts and the habit of checking them; instruments; mathematics; printing and correspondence networks **B3**.

Practice 2.2 ■ 2 marks

Explain what communication networks contributed.

Solution 2.2

Worked steps

they made findings cumulative **B1** rather than isolated, so work built on other work **B1**.

Practice 2.3 ■ 1 mark

A student writes: “In 1687 Newton published his laws.”

- (a) State why this is not context.
- (b) Rewrite it as a condition.

Solution 2.3

Worked steps

(a) it names an event, not a condition **B1**. (b) a rewritten condition, e.g. “A mathematics capable of expressing motion as general law had become available” **B2**.

Exam-style 3.1 ■ 1 mark

Mathematics contributed by making results

- A** decorative
- B** comparable and predictions testable
- C** secret
- D** unnecessary

Solution 3.1

- A** decorative
- B** comparable and predictions testable 
- C** secret
- D** unnecessary

Worked steps

B. quantification allows comparison and test.

Exam-style 3.2 ■ 1 mark

The Enlightenment applied a method developed on nature to

- A** astronomy only
- B** government, religion, law and society
- C** navigation only
- D** painting

Solution 3.2

Method: What the Enlightenment applied

- A astronomy only
- B government, religion, law and society
- C navigation only
- D painting



Worked steps

- B. the method was extended to human affairs.

Exam-style 3.3 ■ 1 mark

A correspondence network circulates results between investigators.

- (a) State the effect on the pace of discovery.
- (b) Explain why isolated work is slower.

Solution 3.3

Method: Conditions

Worked steps

(a) it accelerates it **B1**. (b) an isolated investigator repeats work already done **B1** and cannot be corrected by others who know the field **B1**.