

4.1 Contextualizing the Scientific Revolution and the Enlightenment

Name: _____ Class: _____ Date: _____

Total: 13 marks

KEY WORDS enlightenment 启蒙运动 • scientific revolution 科学革命 • newton 牛顿

Objective

Build the skills to write the **context** for the Scientific Revolution and Enlightenment.

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

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ 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.

■ What each supplied

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

■ 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.

2 Practice

2.1 Name three conditions for the Scientific Revolution. [3]

2.2 Explain what communication networks contributed. [2]

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

(a) State why this is not context. [1]

(b) Rewrite it as a condition. [2]

3 Exam-style questions

3.1 Mathematics contributed by making results [1]

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

3.2 The Enlightenment applied a method developed on nature to [1]

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

3.3 A correspondence network circulates results between investigators.

(a) State the effect on the pace of discovery. [1]

(b) Explain why isolated work is slower.

[2]

Solutions

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

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

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

3.1 B. quantification allows comparison and test.

3.2 B. the method was extended to human affairs.

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