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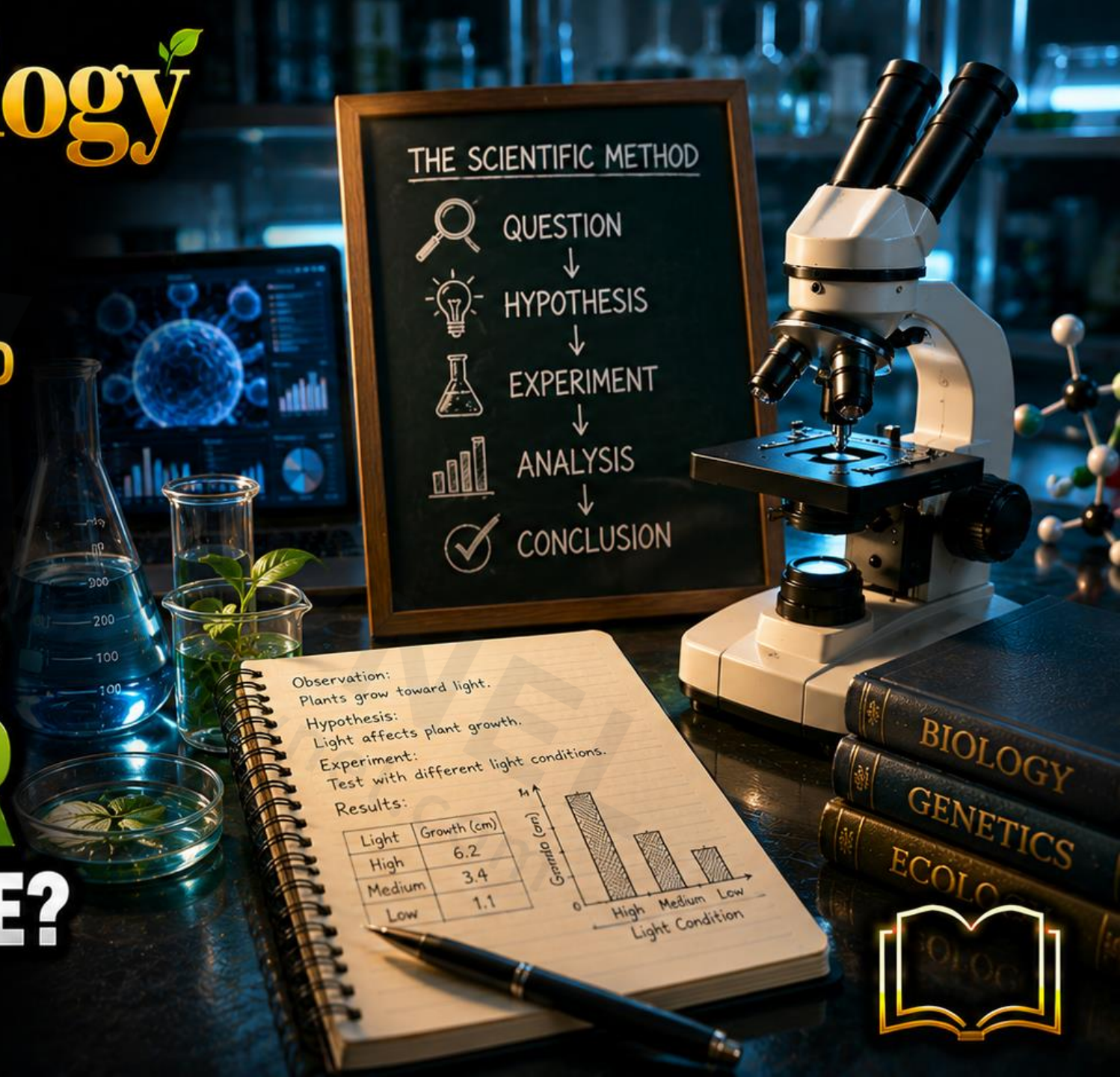
UNIT 1

INTRODUCTION TO BIOLOGY

LESSON 3: THE SCIENTIFIC METHOD

HOW DO SCIENTISTS DISCOVER THE SECRETS OF LIFE?



1 Observation Begins Scientific Inquiry

Observation

Patterns

Instruments

Measurements

Records Over Time

Describe Before Explaining

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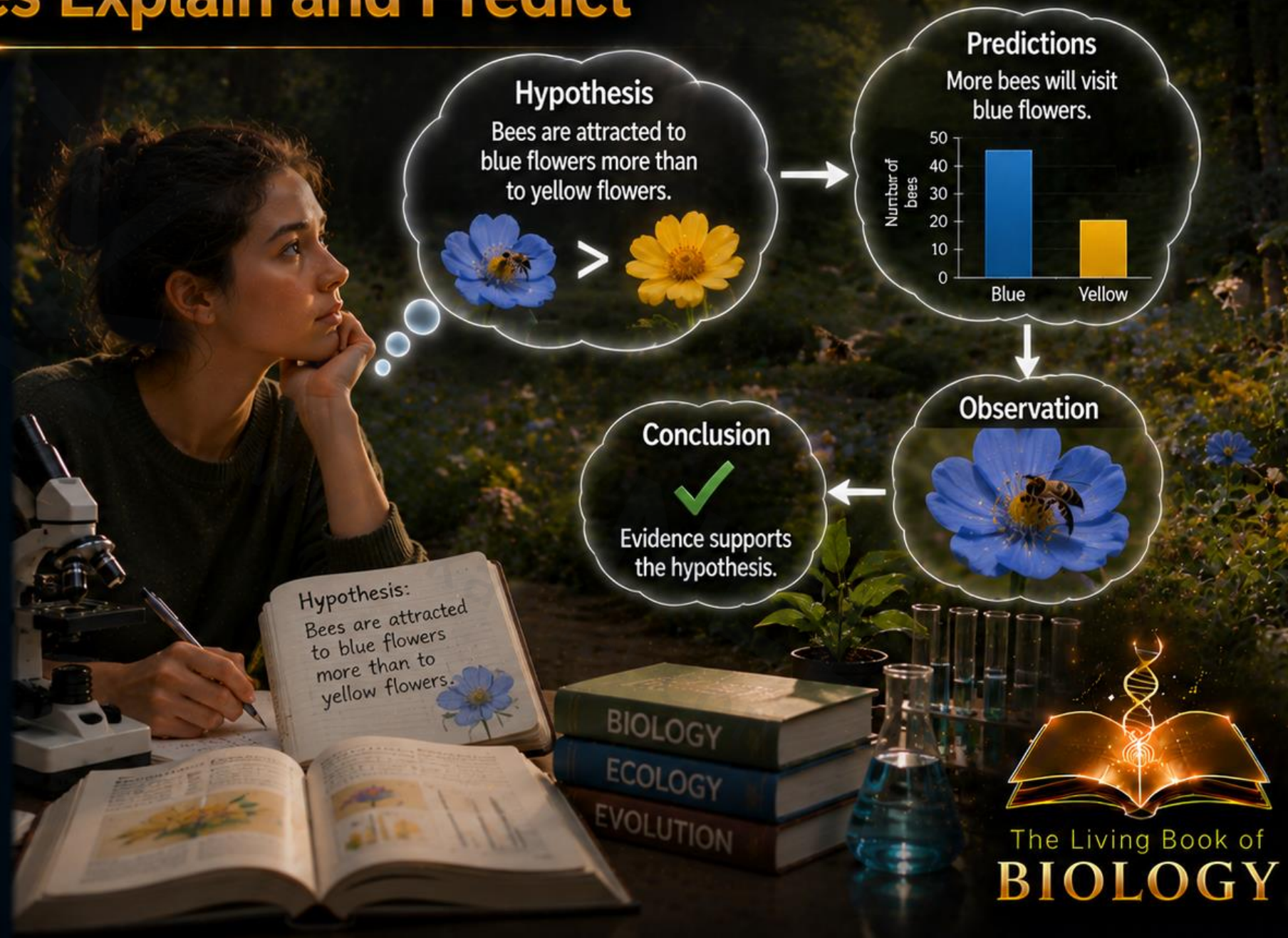
2 Questions Must Be Investigable

- Answerable with Evidence
- Measurable Patterns
- Causes and Relationships
- Guide Research
- Not Based on Opinion

3 Hypotheses Explain and Predict

- Proposed Explanation
- Make Predictions
- Predict Observations
- Link Ideas to Evidence
- Testable Hypotheses
- Revise with New Evidence



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4 Evidence Can Come from Many Methods

- Field Observations
- Laboratory Experiments
- Computer Models
- Long-term Monitoring
- Analysis of Existing Records

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5 Scientific Ideas Are Evaluated Publicly

- Communicate
- Peer Review
- Replication
- Open Discussion
- Evaluate Evidence
- Strong Explanations

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6 Science Is Self-Correcting

- Best Available Evidence
- New Observations
- Revise or Replace Explanations
- Knowledge Improves Over Time
- Strength of Science
- Openness to New Evidence

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SUMMARY

- Observation
- Questions
- Hypotheses
- Evidence
- Public Evaluation
- Revision
- Self-Correcting

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