

AL-MAJEED RESEARCH LABS

FOUNDATION PHASE

Program Design & Curriculum Report

"Learning How to See, Think, and Question the World"

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|------------------------|---|
| Program Phase | Phase 1 — Foundation |
| Duration | 3–4 Weeks (Recommended: 4 Weeks) |
| Target Audience | Early-stage innovation program students |
| Prepared by | Al-Majeed Research Labs — Curriculum Division |
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PHASE 1

FOUNDATION

4 WEEKS

100 POINTS

EXECUTIVE SUMMARY

Overview

The Foundation Phase is the inaugural and most critical stage of Al-Majeed Research Labs' innovation program. Spanning three to four weeks, this phase does not aim to deliver conventional academic knowledge. Instead, its singular purpose is to fundamentally rewire how students perceive, process, and interact with the world around them. It transforms passive learners into active, curious, and analytically equipped thinkers — the essential prerequisite for all subsequent research and innovation work.

Strategic Importance

In most conventional educational settings, students are conditioned to memorize, follow instructions, and rarely question systems or environments. The Foundation Phase systematically dismantles this conditioning. Students who complete this phase successfully emerge with the ability to observe their environment with precision, ask probing and root-cause questions, identify and validate real-world problems, and structure their thinking logically — skills that form the bedrock of genuine research and innovation.

Deep Observation

Critical Questioning

Problem Awareness

Structured Thinking

Expected Outcomes Distribution

| Outcome Group | Percentage | Description |
|-------------------------|------------|---|
| Will struggle initially | ~70% | Normal adjustment; rigorous phase design intentionally challenges passive learners. |
| Will adapt | ~20% | Students who adjust and meet expectations within the phase duration. |
| Will become exceptional | ~10% | These are future builders, researchers, and innovators of the program. |

CORE SKILLS & LEARNING ARCHITECTURE

Four Pillars of the Foundation Phase

The Foundation Phase builds competency across four tightly interconnected cognitive skill domains. Each pillar is deliberately sequenced — observation feeds questioning, questioning drives problem awareness, and problem awareness enables structured thinking.



Cognitive Progression Model

The Foundation Phase follows a deliberate cognitive progression. Students begin by developing perceptual acuity through observation, then advance to systematic questioning, followed by problem identification and validation, and finally solution thinking.



WEEK-BY-WEEK CURRICULUM

The four-week curriculum is structured as a progressive cognitive journey. Each week builds upon the previous, ensuring students develop a complete and integrated thinking framework by the end of the Foundation Phase.

WEEK 1 — LEARNING HOW TO OBSERVE

■ **GOAL:** *Train students to see what others ignore — developing deep perceptual intelligence.*

Topics Covered

- Difference between seeing vs. observing
- Types: Physical (environment, objects), Behavioral (people, habits), Process (systems)
- Observational patterns and how to record insights systematically

Activities & Exercises

- Observation Drill (Daily): 10-min environment observation, record 5 new insights
- 'What's Wrong Here?' Task: Identify 3 inefficiencies + 2 improvements in any space
- Silent Observation Exercise: Observe people's movement, repetition, and pain points

■ **Week Output:** *Each student submits a daily Observation Journal (20+ entries)*

WEEK 2 — LEARNING HOW TO ASK QUESTIONS

■ **GOAL:** *Transform students from passive recipients to naturally curious and probing thinkers.*

Topics Covered

- Types of questions: Surface-level vs. Deep/Root-cause
- Introduction to 'Why-based thinking' and 'What-if thinking'
- 5 Whys Technique for root cause analysis
- Question Ladder: What → Why → How → What if → Why not

Activities & Exercises

- 5 Whys Practice: Trace any problem (e.g., student lateness) to its root cause
- Question Explosion: Generate 20 questions about one simple object
- Why Chain Drill: Build a chain of 10 consecutive 'Why' questions from one observation

■ **Week Output:** *Each student compiles a Question Bank (50+ questions minimum)*

WEEK 3 — UNDERSTANDING PROBLEMS

■ **GOAL:** *Help students distinguish and validate real, meaningful problems from trivial inconveniences.*

Topics Covered

- Defining a real problem vs. a minor inconvenience
- Types: Personal, Community, and System-level problems
- Problem Breakdown Model: What → Who → Why → Consequence
- Validating problems through real-world interaction

Activities & Exercises

- Problem Spotting: Identify 10 problems across school, home, and society
- Problem Validation: Interview 3 people to confirm a problem's reality and importance
- Good vs. Bad Problem Sorting: Classify a list into 'Worth Solving' vs. 'Not Worth Solving'

■ **Week Output:** *Each student submits a validated Problem List (Top 5 validated problems)*

WEEK 4 — THINKING LIKE A BUILDER

■ **GOAL:** *Shift student mindset from 'this is a problem' to 'here is how this can be solved'.*

Topics Covered

- Introduction to solution thinking and creative ideation
- Basic idea generation techniques
- Feasibility analysis: Can it be built? Is it practical?
- Simple Solution Model: Problem → Idea → Mechanism
→ Beneficiary

Activities & Exercises

- Idea Generation Sprint: Generate 3 distinct solutions for each identified problem
- Crazy vs. Practical Ideas: Encourage wild thinking, then refine and filter
- Mini Solution Pitch: 2-minute verbal presentation of Problem + Solution + Impact

■ **Week Output:** *Each student prepares 3 Problem-Solution Concepts*

ASSESSMENT SYSTEM

Evaluation Philosophy

The assessment framework for the Foundation Phase operates on a fundamentally different philosophy from conventional academic evaluation. There are no marks awarded for correct answers, memorized facts, or textbook recall. Every point is earned through demonstrated depth of thinking, originality of observation, consistency of effort, and real-world awareness. This ensures the system is genuinely R&D-grade — you cannot score high by being passive; you must think actively and deeply.

Scoring Structure (Total: 100 Points)

| # | Assessment Category | Weight | Max Points | Primary Evidence |
|-------|-----------------------------|--------|------------|-------------------------------------|
| 1 | Observation Intelligence | 25% | 25 | Observation Journal (20+ entries) |
| 2 | Questioning Depth | 20% | 20 | Question Bank (50+ questions) |
| 3 | Problem Identification | 25% | 25 | Top 5 Validated Problems |
| 4 | Structured Thinking | 15% | 15 | Problem Breakdown Sheets, 5 Whys |
| 5 | Participation & Consistency | 15% | 15 | Attendance, Submissions, Engagement |
| TOTAL | | 100% | 100 | All deliverables combined |

Detailed Rubrics

1. Observation Intelligence (25 Points)

| Level | Score | Performance Descriptor |
|-------------------|-------|--|
| Poor (0–8) | 0–8 | Generic, surface-level observations (e.g., 'the room has chairs'). No pattern recognition. |
| Average (9–16) | 9–16 | Notices small issues or minor anomalies but lacks depth, context, or analytical insight. |
| Good (17–21) | 17–21 | Identifies patterns, inefficiencies, and behavioral tendencies. Shows genuine curiosity. |
| Excellent (22–25) | 22–25 | Deep, insightful observations. Uncovers hidden problems, human behavior patterns, and system-level issues. |

2. Questioning Depth (20 Points)

| Level | Score | Performance Descriptor |
|-------------------|-------|--|
| Poor (0–6) | 0–6 | Basic, factual questions with no analytical depth (e.g., 'What is homework?'). |
| Average (7–12) | 7–12 | Some 'why' questions present, but mostly surface-level without follow-through. |
| Good (13–17) | 13–17 | Multi-layer questioning that follows threads to deeper implications and patterns. |
| Excellent (18–20) | 18–20 | Root-cause and system-level questioning that challenges assumptions and reveals structural issues. |

3. Problem Identification (25 Points)

| Level | Score | Performance Descriptor |
|------------|-------|--|
| Poor (0–8) | 0–8 | Fake, irrelevant, or trivial problems that do not affect real people or systems. |

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|--------------------------|--------------|--|
| Average (9–16) | 9–16 | Real but minor or inconsequential problems with limited scope or impact. |
| Good (17–21) | 17–21 | Clear, relevant, well-articulated problems that meaningfully affect people. Partially validated. |
| Excellent (22–25) | 22–25 | High-impact, thoroughly validated problems with defined affected groups and proven significance. |

■ Critical Rule: *If a problem has not been validated through real-world interaction (talking to at least 3 affected people), the maximum achievable score for Problem Identification is capped at 15 out of 25.*

4. Structured Thinking (15 Points)

| Level | Score | Performance Descriptor |
|--------------------------|--------------|---|
| Poor (0–5) | 0–5 | Random, disconnected thoughts with no logical structure or analytical framework. |
| Average (6–9) | 6–9 | Partial breakdown of issues; some logical connection but incomplete or inconsistent. |
| Good (10–13) | 10–13 | Clear, logical thinking with appropriate use of frameworks. Well-organized analysis. |
| Excellent (14–15) | 14–15 | Deep cause-effect analysis using multiple frameworks. Demonstrates researcher-level thinking. |

5. Participation & Consistency (15 Points)

| Level | Score | Performance Descriptor |
|--------------------------|--------------|---|
| Poor (0–5) | 0–5 | Irregular attendance, incomplete submissions, minimal class engagement. |
| Average (6–9) | 6–9 | Inconsistent effort; present but not fully engaged; some submissions missing. |
| Good (10–13) | 10–13 | Regular attendance, consistent submission of all deliverables, active in discussions. |
| Excellent (14–15) | 14–15 | Highly proactive — goes beyond expectations, initiates ideas, drives group discussions. |

PERFORMANCE TIERS & FINAL DELIVERABLES

Performance Classification

| | |
|-----------------------------------|---|
| RESEARCH-READY 85–100 | Student has demonstrated exceptional observational, questioning, and analytical skills. Ready to advance to the next phase with strong research aptitude. |
| STRONG FOUNDATION 70–84 | Student has built a solid foundation with clear competence across core skills. May need minor reinforcement in specific areas before advancing. |
| NEEDS IMPROVEMENT 50–69 | Student shows partial development of required skills. Structured remediation and additional mentoring is recommended before Phase 2 entry. |
| NOT READY Below 50 | Student has not met the minimum threshold. Re-engagement with Foundation Phase material is required. Mentor intervention is mandatory. |

Final Deliverables Checklist

Upon completing the Foundation Phase, each student must submit the following five deliverables. These constitute the complete evidence portfolio on which their final score and performance tier will be determined.

Observation Journal



Minimum 20 daily entries documenting observations from the student's environment. Must include patterns, inefficiencies, and behavioral insights — not generic notes.

Question Bank



A compiled collection of minimum 50 questions generated through the 5 Whys, Question Ladder, and Question Explosion exercises. Quality over quantity is assessed.

Validated Problem List



Top 5 real-world problems identified and validated. Each must include: who is affected, why it matters, and evidence of validation (at least 3 people consulted).

Initial Solution Ideas



3 Problem-Solution Concepts developed during Week 4. Each concept must include the problem, proposed solution, how it works, and who benefits.

Problem Breakdown Sheets



Structured breakdowns of key problems using the 5 Whys technique and the Problem Breakdown Model. Demonstrates structured, logical thinking capability.

ADVANCED EVALUATION & TEACHING METHODOLOGY

Advanced Evaluation Mechanisms

Beyond the core scoring rubrics, the Foundation Phase incorporates three advanced evaluation mechanisms that elevate the rigor of assessment to a genuine research-level standard.

| Mechanism | Description | Value |
|---|---|---|
| Peer Review (Optional but Recommended) | Students evaluate each other's problem lists and observation journals using defined criteria. | Develops critical thinking and quality standards. |
| Mentor Panel Review (Final Week) | A panel of 2–3 mentors evaluates each student's final deliverables, focusing on problem clarity, depth, and validation quality. | Simulates real R&D; evaluation environment. |
| Red Flag System (Penalty Triggers) | Immediate score penalties are applied for: copying observations, fake problem validation, and low-effort submissions. | Enforces research ethics and academic integrity. |

Teaching Methodology

The pedagogical approach of the Foundation Phase is deliberately non-conventional. It rejects passive instruction in favor of active, experience-driven learning.

| Principle | Approach |
|------------------------------------|--|
| Session Length | No single lecture exceeds 20 minutes. Longer theory blocks are broken into activity-driven segments. |
| Activities > Theory | The ratio of hands-on activities to passive instruction is at least 3:1. Students learn by doing, not listening. |
| Discussion Culture | Open discussion, respectful disagreement, and collaborative problem-solving are actively encouraged. |
| Independent Thinking | Students are never given answers. They are given frameworks and asked to discover insights independently. |
| Curiosity-First Environment | Mentors celebrate good questions as much as good answers. Questioning the status quo is modeled and rewarded. |

SAMPLE MENTOR FEEDBACK & SCORECARD FORMAT

Every student completing the Foundation Phase receives a structured scorecard accompanied by qualitative mentor feedback. Below is the standard format used by Al-Majeed Research Labs mentors for final evaluation.

STUDENT PERFORMANCE SCORECARD — FOUNDATION PHASE

| Category | Score | Out Of | Percentage |
|-----------------------------|-----------|------------|--------------------------------|
| Observation Intelligence | 21 | 25 | 84% |
| Questioning Depth | 15 | 20 | 75% |
| Problem Identification | 18 | 25 | 72% |
| Structured Thinking | 11 | 15 | 73% |
| Participation & Consistency | 13 | 15 | 87% |
| TOTAL | 78 | 100 | 78% — Strong Foundation |

Qualitative Mentor Feedback Format

STRENGTHS

Strong observer with a natural ability to notice behavioral patterns. Question Bank demonstrates multi-layer, root-cause questioning. Consistent participation and proactive engagement throughout all four weeks.

AREAS FOR IMPROVEMENT

Problem validation was partially complete — only 2 of 5 problems were fully validated with 3+ interviews. Structured thinking frameworks were applied but not always consistently across all breakdown sheets.

MENTOR RECOMMENDATION

Before advancing to Phase 2, the student should revisit and complete the validation of their remaining 3 problems by conducting the required interviews and updating their Problem Breakdown Sheets accordingly.

■ STRATEGIC INSIGHT — WHY THIS PHASE MUST BE RIGOROUS

A weak Foundation Phase produces weak innovators. The single most important determinant of a student's success in all subsequent phases is the depth of thinking habits built here. Mentors are urged to enforce assessment standards strictly, resist grade inflation, and treat this phase as the true entry gate to the innovation program. The students who struggle here — and push through — become the program's most exceptional researchers and builders.