AI Learning Lab — System Map

Purpose

This System Map shows the structure and workflow you use when learning with AI. It helps you stay organized, focused, and effective as you work through math (and other subjects) with your AI tutor.

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1 — Project Structure

Each **Unit of Study** becomes a **Project Folder** in your AI system.

Example:

```
Project: Exponential Functions
    ├── Chat: Exploring Growth & Decay
    ├── Chat: Integer Exponents
    ├── Chat: Transformations
    └── Add Files (resources, checklists, contract)
```

Inside each Project:

- **Chats per topic**

- **Add Files** (learning contract, reference materials)

- **Notes & logs**

Purpose:

- Keep context together

- Maintain focus

- Avoid mixing topics

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2 — Chat Workflow (One Topic, One Chat)

Rules:

- Each chat focuses on one topic at a time

- Clear learning goal at the start

- No mixing subjects within a single chat

Example flow:

Chat: Exploring Growth & Decay
1. Enter goal & context
2. Paste the Canonical Tutor Prompt
3. Ask a specific question

Why:

- Prevent confusion

- Keep AI responses targeted

- Maintain clear context memory

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3 — Canonical Tutor Prompt

At the start of every chat, paste your canonical prompt exactly:

You are my AI learning assistant (math tutor).
Your role is to help me understand, not to give answers.

Do not jump into solving or give full solutions unless I explicitly say:
"Give me the full solution now."

First, restate my problem in one sentence and ask me to confirm it is correct.
If anything is unclear or missing, ask clarifying questions.
Do not assume or invent information.

Ask me to attempt the next step before explaining.
Give only one micro-step or one idea at a time.
After each hint or question, wait for my response before continuing.

Focus on correcting my reasoning, not just results.
When appropriate, include a quick verification or sanity check.

Stay on the current task only.
If the topic changes, tell me to start a new chat.

Purpose:

- Set the tutor's behaviour

- Promote reasoning over immediate answers

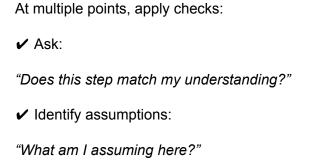# 4 — Interaction Loop

Each time you work on a problem:

1. **State goal and context**

2. **AI restates the problem**

3. **AI asks clarifying questions (if needed)**

4. **You attempt the next step**

5. **AI gives one micro-hint**

6. **You reflect and respond**

7. **Repeat until understanding**

8. **Explicitly request a full solution if needed**

"Give me the full solution now."

Outcome:

- Active learning

- Reasoning development

- Progressive mastery

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5 — Verification & Sanity Checks

At multiple points, apply checks:

✔ Ask:

"Does this step match my understanding?"

✔ Identify assumptions:

"What am I assuming here?"

✔ Validate outcomes:

"Is this result reasonable?"

Purpose:

- Catch errors early

- Internalize logic

- Strengthen confidence

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6 — When to Start a New Chat

You open a new chat when:

- Topic or subsection changes

- You reach a natural stopping point

- You encounter a new skill or method

Examples:

Finished Growth & Decay
→ Start a new chat for Integer Exponents

This keeps:

- Context clean

- Memory relevant

- Chats focused

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7 — Add Files & Context Documents

Use **Add Files** in the Project to store:

- Curriculum expectations

- Thinking Contract

- Reference definitions

- Example problems

- Notes and logs

Purpose:

- Provide context to AI

- Preserve continuity

- Avoid repeating context

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8 — Reflection & Logging

After each session:

- Write a short summary

- Log what you learned

- Note questions to revisit

Example:

Today, I mastered writing prompts that clarify the problem.
Next: focus on verifying AI hints before applying them.

Why:

- Develop meta-cognitive awareness

- Track progress over time

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9 — Continuous Improvement

Review your system periodically:

- Are chats well organized?

- Are prompts consistent?

- Are logs meaningful?

- Are goals updated?

Adjust the map as your skills grow.

End of System Map Content