## 📘 Course Title: Introduction to Algebra 1

**Course Duration:** 6 Weeks
**Focus:** Modeling and Solving Linear Equations Using Algebra Tiles
**Digital Ecosystem:** DEEP LXP (Brand, Collab, Compete, Stream)

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## 🗓️ Week-by-Week Course Outline

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### Module 1: Introduction to Variables, Expressions & Algebra Tiles

**Objective:** Understand variables, expressions, and how to represent them using algebra tiles.

- **Topics Covered:**
  - What is a variable?
  - Writing and interpreting algebraic expressions
  - Introduction to algebra tiles: positive/negative tiles
  - Modeling expressions visually
- **In-Class Activities:**
  - Hands-on with digital/physical algebra tiles
  - Peer discussions: how do algebra tiles make abstract math concrete?
- **Assessment:**
  - Quiz on algebraic terms and modeling expressions
- **Digital Assignment (Brand Project):**
  - Create a personal **Brand** in DEEP LXP showcasing your understanding of variables and expressions using multimedia tools. Include visuals of algebra tile models.

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### Module 2: Solving One-Step Equations Using Algebra Tiles

**Objective:** Solve one-step equations using visual models and algebraic reasoning.

- **Topics Covered:**
  - Solving equations using addition/subtraction tiles
  - Solving with multiplication/division tiles
  - Inverse operations and balance concept
- **In-Class Activities:**

- Modeling and solving equations collaboratively
- Partner practice: Explain each solution visually

- **Assessment:**
  - Digital worksheet with algebra tile models + solving steps
- **Digital Assignment (Collab Project):**
  - Work in small groups using the **COLLAB** module to create a visual guide for solving one-step equations. Submit a collaborative digital product.

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**Module 3: Solving Two-Step Equations**

**Objective:** Build on foundational skills to solve two-step linear equations using algebra tiles.

- **Topics Covered:**
  - Combining like terms visually
  - Solving equations with two operations
  - Balancing both sides with algebra tiles
- **In-Class Activities:**
  - Break down multi-step equations with group support
  - Peer editing: Identify correct modeling steps
- **Assessment:**
  - Quiz and tile modeling task on two-step equations
- **Digital Assignment (Compete Project):**
  - Use the **COMPETE** module to host a friendly "Equation Mastery Challenge." Students design and solve challenges for classmates to compete in an online setting.

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**Module 4: Writing and Solving Real-World Problems**

**Objective:** Translate word problems into algebraic equations and solve using tiles.

- **Topics Covered:**
  - Identify variables from real-life scenarios
  - Build and solve equations from stories
  - Reflect on accuracy and interpretation

- **In-Class Activities:**
    - Storyboard real-world scenarios as equations
    - Solve and model classmates' problems
- **Assessment:**
    - Open-ended word problem quiz with visual tile models
- **Digital Assignment (Brand Project):**
    - Use **BRAND** module to showcase a real-life scenario as an algebra story. Include visuals, models, and a brand identity that ties math to real-world interests.

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**Module 5: Solving Equations with Variables on Both Sides**

**Objective:** Solve more complex equations where variables appear on both sides using algebra tiles.

- **Topics Covered:**
    - Modeling variable-on-both-sides equations
    - Concept of simplifying and isolating variables
    - Determining no solution or infinite solutions
- **In-Class Activities:**
    - Interactive whiteboard demos using tiles
    - Partner challenge: "Who Solved It Best?" competition
- **Assessment:**
    - Multi-question assessment with justification and models
- **Digital Assignment (Stream Project):**
    - Work in teams using the **STREAM** module to host a live demonstration (or recorded live event) teaching others how to solve variable-on-both-sides equations using tiles.

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**Module 6: Cumulative Review and Algebra Tile Capstone**

**Objective:** Apply all learned skills in a real-world scenario and demonstrate mastery.

- **Topics Covered:**
    - Review all solving strategies
    - Mixed-problem solving

- Algebraic fluency and reasoning

- **In-Class Activities:**
  - Algebra Escape Room (digital or in-person)
  - Math "Shark Tank": Pitch a solution to a problem using tiles
- **Assessment:**
  - Cumulative test (digital or paper) covering all modules
- **Digital Assignment (Collab + Compete Capstone):**
  - Final capstone combining **COLLAB + COMPETE**: Students form groups to design and present a collaborative product (e.g., algebra-themed esports bracket or educational resource) based on course content. Must include tile modeling, teamwork roles, and skill synergy reflection.

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🏁 **Final Deliverables**

- **Weekly Digital Assignments (6 Total)**
- **6 Assessments (Quizzes/Tests)**
- **Capstone Project (Collab + Compete Hybrid)**