# STEM Online Foundation Course

Course Schedule:

### Week 1: Introduction to STEM & Scientific Thinking

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|---|---|
| document | What is STEM? |
| document | Curiosity and Asking Questions |
| document | Introduction to the Scientific Method |
| document | Fun Experiment: Making a Volcano |

### Week 2: Basics of Coding & Logical Thinking

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| document | What is a Computer Program? |
| document | Algorithms and Flowcharts |
| document | Introduction to Scratch / Blockly (Visual Programming) |
| document | Activity: Animate Your Name / Create a Simple Game |

### Week 3: Simple Machines & Engineering Design

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| document | Levers, Pulleys, Wheels – Real-life Examples |
| document | Engineering Design Process (Plan – Build – Test – Improve) |
| document | Hands-On: Build a Mini Catapult |

## Week 4: Math in Real Life

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| document | Math Games & Patterns |
| document | Measurement, Time, Shapes |
| document | Fun With Numbers: Puzzles and Riddles |
| document | DIY: Create a Board Game with Math Problems |

## Week 5: Robotics & Automation

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| document | What is a Robot? |
| document | Sensors and Motors (Basic) |
| document | Virtual Robotics (using simulators) |
| document | Challenge: Make a Robot Move in a Maze |

## Week 6: Environmental Science & Sustainability

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| document | Introduction to Ecosystems |
| document | Renewable vs Non-renewable Resources |
| document | DIY: Make a Water Filter or Solar Oven |
| document | Fun Quiz: My Green Footprint |

## Week 7: Space & Astronomy

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| document | Our Solar System |
| document | Rockets and Satellites |
| document | DIY: Make a Balloon Rocket |
| document | Stargazing App / Virtual Tour of Planets |

### Week 8: Final STEM Challenge + Showcase

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| document | Group Project: Solve a Real-World Problem using STEM |
| document | Present Your Prototype/Project |
| document | Certificate Distribution |
| document | Parent-Student Showcase / Exhibition |