# Pre-AP Algebra 1 Instructional Planning Guide

# With SpringBoard Algebra 1, National Edition

The goal of the instructional planning guide is to help you create a roadmap of the key instructional activities and assessments you will   
use to design your course in alignment with the Pre-AP course framework and instructional principles. This sample offers one approach   
of how your SpringBoard resources can be used across each Pre-AP unit to create a plan for the full year. We encourage you to adapt this   
approach to support your students’ needs.

**Using and Customizing Your Own Instructional Planning Guide:**

* Consider using this tool to plan collaboratively with your peers.
* This document is flexible, allowing you to modify it as needed to best support your students’ needs.   
  Feel free to incorporate other SpringBoard resources (found in the SpringBoard curriculum maps)   
  to reinforce the model lessons and course goals as appropriate. These resources include:
  + - Core lessons and activities
    - Embedded Assessments
    - Skills Workshops
    - SpringBoard digital assessments
    - Desmos activities
* Take time to capture your reflections as you move through the course.

## Unit 1 Linear Functions and Linear Equations

| **Pacing in min** | **Actual Date(s)** | **Key Concepts** | **Materials/Resources/Tasks**  *Pre-AP Model Lessons, Additional Lessons, Textbooks,  Performance Tasks, Assessments* | **Learning Objectives** | **State Standards** | **Reflections on  Areas of Focus & Shared Principles** |
| --- | --- | --- | --- | --- | --- | --- |
| ~90 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.1 Direct Variation in Our World | 1.1.1 | A.CED.2  F.IF.4, 5  F.BF.1  F.LE.1 |  |
| ~90 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.2: Recognizing Direct Variation | 1.1.1 | A.CED.2  F.IF.4, 5  F.BF.1  F.LE.1 |  |
| ~45 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.3: Finding the Constant Rate | 1.1.1, 1.1.2 | A.CED.2  F.IF.4, 6  S.ID.7 |  |
| ~90 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.4: Additive Patterns and Arithmetic Sequences | 1.2.1 | F.IF.3  F.IF.5  F.BF.1, 2 |  |
| ~75 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.5: Exploring Arithmetic Sequences | 1.1.3  1.2.1, 1.2.2 | A.CED.2  F.IF.3, 5  F.BF.1, 2  F.LE.2 |  |
| ~75 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.6: Defining the Slope of a Line | 1.1.2, 1.1.3 | F.IF.6, 7  F.BF.1  F.LE.2  S.ID.7 |  |
| ~75 |  | 1.1: Constant Rate of Change and Slope | Pre-AP Model Lesson 1.7: Slope as a Rate of Change | 1.1.2, 1.1.3  1.2.4, 1.2.6 | N.Q.1  A.CED.2, 3  A.REI.10  F.IF.4, 6, 7  F.BF.1  F.LE.2, 5  S.ID.7 |  |
| ~45 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.8: Constant Rate Functions | 1.1.2–1.1.4 | A.CED.2  F.IF.4, 6, 7  F.BF.1  F.LE.1, 2  S.ID.7 |  |
| ~60 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.9: The *y* = *mx* + *b* Equation | 1.2.4, 1.2.6 | A.CED.2, 3  A.REI.10  F.IF.4  F.BF.1  F.LE.1, 2, 5  S.ID.7 |  |
| ~90 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.10: Linear Functions | 1.2.3  1.2.4  1.2.6  1.3.1 | A.CED.3  A.REI.10  F.IF.1, 2, 4, 5, 7  F.BF.1  F.LE.1, 2, 5  S.ID.7 |  |
| ~60 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.11: Function Notation in Context | 1.2.3  1.2.4  1.2.6 | A.CED.2, 3  A.REI.10  F.IF.1, 2, 4, 5  F.BF.1  F.LE.1, 2, 5  S.ID.7 |  |
| ~90 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.12: A Geometric Approach to the Point–Slope Formula  SpringBoard Mini-Lessons: Point-Slope Form and Point-Slope Form (Given Two Points) | 1.2.3–1.2.6 | A.CED.2, 3  A.REI.10  F.IF.1, 2, 4, 5  F.BF.1  F.LE.1, 2, 5  S.ID.7 |  |
| ~60 |  | 1.2: Linear Functions | Pre-AP Model Lesson 1.13: Point–Slope Versus Slope–Intercept Form  SpringBoard Mini-Lesson: Slope-Intercept Form | 1.2.4, 1.2.5 | A.REI.10  F.IF.4  F.BF.1  F.LE.2 |  |
| ~90 |  | 1.1, 1.2 | **Practice Performance Task**  Measuring the Wind Speed in a Hurricane  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | N.Q.1  A.SSE.1  A.CED.2, 3  A.REI.10  F.IF.1–6  F.BF.1, 2  F.LE.1, 2, 5  S.ID.7 |  |
| ~45 |  | 1.1, 1.2 | **Learning Checkpoint 1**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~60 |  | 1.3: Linear Equations | Pre-AP Model Lesson 1.14: Writing Standard Form Equations from Context | 1.3.1 | A.CED.3  A.REI.10  F.IF.7  F.BF.1  F.LE.2 |  |
| ~75 |  | 1.3: Linear Equations | Pre-AP Model Lesson 1.15: Converting from Standard Form to Slope–Intercept Form  SpringBoard Mini-Lesson: Standard Form | 1.2.5  1.3.2, 1.3.3 | A.CED.2–4  A.REI.1 |  |
| ~75 |  | 1.3: Linear Equations | Pre-AP Model Lesson 1.16: Solutions to the Standard Form Equation | 1.3.1–1.3.3 | N.Q.1  A.CED.2–4  A.REI.1, 10  F.IF.7  F.BF.1  F.LE.2 |  |
| ~45 |  | 1.3: Linear Equations | SpringBoard Lesson: 12-4 Slopes of Parallel and Perpendicular Lines | 1.3.4 | F.LE.2 |  |
| ~270 |  | 1.4: Linear Models of Nonlinear Scenarios | SpringBoard Lessons: 13-1 Scatter Plots and Trend Lines and 13-2 Linear Regression  SpringBoard Mini-Lesson: Linear Regression on Desmos  SpringBoard Activity 14: Piecewise-Defined Linear Functions | 1.4.1–1.4.5 | F.IF.5, 7  S.ID.6 |  |
| ~45 |  | 1.3, 1.4 | **Learning Checkpoint 2**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~90 |  | 1.5: Two-Variable Linear Inequalities | SpringBoard Activity 16: Inequalities in Two Variables | 1.5.1–3 | A.CED.3  A.REI.12 |  |
| ~45 |  | 1.1–5 | **Performance Task**  Electric Car Sales |  | N.Q.1  A.SSE.1  A.CED.2, 3, 4  A.REI.1, 10, 12  F.IF.1–7  F.BF.1, 2  F.LE.1, 2, 5  S.ID.6, 7 |  |

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### Reflections

What went well in this unit?

When were students most engaged during this unit?

How have students grown? What opportunities for growth stand out at this time?

What needs modification or differentiation next time?

## Unit 2 Systems of Linear Equations and Inequalities

| **Pacing in min** | **Actual Date(s)** | **Key Concepts** | **Materials/Resources/Tasks**  *Pre-AP Model Lessons, Additional Lessons, Labs, Textbooks,  Performance Tasks, Assessments* | **Learning Objectives** | **State Standards** | **Reflections on  Areas of Focus & Shared Principles** |
| --- | --- | --- | --- | --- | --- | --- |
| ~90 |  | 2.1: The Solution to a System of Equations | Pre-AP Model Lesson 2.1: A Geometric Approach to Systems of Linear Equations | 2.1.1 | A.REI.6, 11 |  |
| ~45 |  | 2.1: The Solution to a System of Equations | Pre-AP Model Lesson 2.2: Understanding Solutions to Systems of Equations | 2.1.1 | A.REI.6, 11 |  |
| ~60 |  | 2.1: The Solution to a System of Equations | Pre-AP Model Lesson 2.3: How Many Solutions? | 2.1.1, 2.1.2  2.3.1 | N.Q.1  A.CED.3  A.REI.6, 11 |  |
| ~90 |  | 2.1: The Solution to a System of Equations | Pre-AP Model Lesson 2.4: Analyzing Systems Using Graphing Technology  SpringBoard Lesson: 17-1 The Graphing Method | 2.1.1, 2.1.3  2.3.1 | N.Q.1  A.CED.3  A.REI.6, 11 |  |
| ~45 |  | 2.1 | **Practice Performance Task**  Determining the Best Deal in Movie Streaming Services  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | N.Q.1  A.CED.3  A.REI.6, 11 |  |
| ~90 |  | 2.2: Solving a System of Linear Equations Algebraically | SpringBoard Lessons: 17-2 Using Tables and the Substitution Method and 17-3 The Elimination Method | 2.2.1, 2.2.2 | A.REI.5, 6 |  |
| ~90 |  | 2.3: Modeling with Systems of Linear Equations Algebraically | SpringBoard Lessons: 17-4 Systems Without a Unique Solution and 17-5 Classifying Systems of Equations | 2.3.1, 2.3.2 | N.Q.1  A.CED.2, 3  A.REI.6 |  |
| ~45 |  | 2.1, 2.2, 2.3 | **Learning Checkpoint 1**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~135 |  | 2.4: Systems of Linear inequalities | Pre-AP Model Lesson 2.5: Modeling with Systems of Inequalities | 2.4.1–2.4.3 | N.Q.1  A.CED.3  A.REI.12 |  |
| ~45 |  | 2.4 | **Practice Performance Task**  Part-Time Jobs  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | N.Q.1  A.CED.2, 3  A.REI.5, 6, 11, 12 |  |
| ~45 |  | 2.4 | **Learning Checkpoint 2**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* | 2.4.1–2.4.3 | N.Q.1  A.CED.3  A.REI.12 |  |
| ~45 |  | 2.1, 2.2, 2.3, 2.4 | **Performance Task**  Packing Flower Pots | 2.1.1–2.1.3  2.2.1, 2.2.2  2.3.1, 2.3.2  2.4.1–2.4.3 | N.Q.1  A.CED.2, 3  A.REI.5, 6, 11, 12 |  |

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### Reflections

What went well in this unit?

When were students most engaged during this unit?

How have students grown? What opportunities for growth stand out at this time?

What needs modification or differentiation next time?

## Unit 3 Quadratic Functions

| **Pacing in min** | **Actual Date(s)** | **Key Concepts** | **Materials/Resources/Tasks**  *Pre-AP Model Lessons, Additional Lessons, Labs, Textbooks,  Performance Tasks, Assessments* | **Learning Objectives** | **State Standards** | **Reflections on  Areas of Focus & Shared Principles** |
| --- | --- | --- | --- | --- | --- | --- |
| ~90 |  | 3.1: Functions with a Linear Rate of Change | Pre-AP Model Lesson 3.1: Introducing Quadratic Functions | 3.1.1, 3.1.2 | A.REI.10  A.CED.2  F.IF.4, 7 |  |
| ~90 |  | 3.1: Functions with a Linear Rate of Change | Pre-AP Model Lesson 3.2: Area Models for Quadratic  Functions  SpringBoard Mini-Lesson: Identifying Quadratic Functions | 3.1.1, 3.1.2  3.4.1 | A.REI.10  A.CED.2  F.IF.4, 5, 7  F.BF.1 |  |
| ~135 |  | 3.1: Functions with a Linear Rate of Change | Pre-AP Model Lesson 3.3: Revenue and Profit | 3.1.2  3.4.1, 3.4.3 | A.REI.10  A.CED.2  F.IF.4, 5, 7, 8  F.BF.1 |  |
| ~90 |  | 3.2: The Algebra and Geometry of Quadratic Functions | Pre-AP Model Lesson 3.4: The Factored Form of a Quadratic | 3.2.1–3.2.3 | A.SSE.2  A.CED.2  F.IF.4, 8 |  |
| ~60 |  | 3.2: The Algebra and Geometry of Quadratic Functions | Pre-AP Model Lesson 3.5: Graphs and the Factored Form of a Quadratic | 3.2.2–3.2.4 | A.SSE.2, 3  A.CED.2  F.IF.4, 8  F.BF.1 |  |
| ~45 |  | 3.1, 3.2 | **Practice Performance Task**  The Catapult  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | A.REI.10  A.SSE.1–3  A.CED.2  F.IF.4, 5, 7, 8  F.BF.1 |  |
| ~45 |  | 3.1, 3.2 | **Learning Checkpoint 1**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~55 |  | 3.3: Solving Quadratic Equations | Pre-AP Model Lesson 3.6: Connecting Standard Form to Vertex Form | 3.2.2, 3.2.3 | A.SSE.2, 3  A.CED.2  F.IF.4, 8 |  |
| ~75 |  | 3.3: Solving Quadratic Equations | Pre-AP Model Lesson 3.7: The Quadratic Formula  SpringBoard Mini-Lessons: Using a Graphic Organizer to Complete the Square and Simplifying Radicals | 3.2.2  3.3.5 | A.SSE.2, 3  A.CED.2  A.REI.7  F.IF.4 |  |
| ~45 |  | 3.3: Solving Quadratic Equations | Pre-AP Model Lesson 3.8: The Symmetry of the Parabola | 3.2.3  3.3.1  3.4.3 | A.SSE.3  A.CED.2  F.IF.4, 7, 8 |  |
| ~150 |  | 3.3: Solving Quadratic Equations | Pre-AP Model Lesson 3.9: Interpreting the Discriminant  SpringBoard Lessons: 31-1 Solving by Graphing or Factoring and 32-2 Completing the Square | 3.3.2, 3.3.5, 3.3.6 | A.REI.4, 7  F.IF.4 |  |
| ~90 |  | 3.3: Solving Quadratic Equations | SpringBoard Lessons: 31-1 Solving by Graphing or Factoring and 32-2 Completing the Square | 3.3.3, 3.3.4 | A.SSE.1,  A.REI.4 |  |
| ~60 |  | 3.4: Modeling with Quadratic Functions | Pre-AP Model Lesson 3.10 Pursuit Problems | 3.3.5  3.4.1, 3.4.2 | A.SSE.1  A.CED.2  A.REI.4, 7  F.IF.4, 5  F.BF.1 |  |
| ~45 |  | 3.4: Modeling with Quadratic Functions | Pre-AP Model Lesson 3.11: Gravity and Free-Fall Investigations  SpringBoard Mini-Lesson: Solving a Quadratic Equation by Graphing | 3.2.4  3.4.1, 3.4.2 | A.SSE.1  A.CED.2  A.REI.4  F.IF.5  F.BF.1 |  |
| ~60 |  | 3.4: Modeling with Quadratic Functions | Pre-AP Model Lesson 3.12: The Golden Ratio | 3.3.5  3.4.1 | A.SSE.1  A.CED.2  A.REI.4, 7  F.IF.4, 5  F.BF.1 |  |
| ~60 |  | 3.4: Modeling with Quadratic Functions | Pre-AP Model Lesson 3.13 Finding a Formula for Triangular Numbers | 3.1.1  3.2.4  3.3.5 | A.REI.4, 7  F.IF.4 |  |
| ~45 |  | 3.1, 3.2, 3.3, 3.4 | **Practice Performance Task**  Weaving a Rug  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | A.REI.10  A.SSE.1–3  A.CED.2  A.REI.4, 7  F.IF.4, 5, 7, 8  F.BF.1 |  |
| ~45 |  | 3.3, 3.4 | **Learning Checkpoint 2**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~45 |  | 3.1, 3.2, 3.3, 3.4 | **Performance Task**  The Path of a Football | 3.1.1, 3.1.2  3.2.1–3.2.4  3.3.1–3.3.6  3.4.1–3.4.3 | A.REI.10  A.SSE.1, 3  A.CED.2  A.REI.4, 7  F.IF.4, 5, 7, 8  F.BF.1 |  |

[add or remove rows as needed]

### Reflections

What went well in this unit?

When were students most engaged during this unit?

How have students grown? What opportunities for growth stand out at this time?

What needs modification or differentiation next time?

## Unit 4 Exponent Properties and Exponential Functions

| **Pacing in min** | **Actual Date(s)** | **Key Concepts** | **Materials/Resources/Tasks**  *Pre-AP Model Lessons, Additional Lessons, Labs, Textbooks,  Performance Tasks, Assessments* | **Learning Objectives** | **State Standards** | **Reflections on  Areas of Focus & Shared Principles** |
| --- | --- | --- | --- | --- | --- | --- |
| ~135 |  | 4.1: Exponent Rules and Properties | SpringBoard Activity 19: Exponent Rules | 4.1.1, 4.1.2 | N.RN.2  A.SSE.3 |  |
| ~45 |  | 4.1: Exponent Rules and Properties | **Practice Performance Task**  Exponent Properties  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | N.RN.2  A.SSE.3 |  |
| ~135 |  | 4.2: Roots of Real Numbers | SpringBoard Activity 20: Operations with Radicals | 4.2.1–4.2.3 | N.RN.1  A.SSE.3  N.RN.3 |  |
| ~45 |  | 4.1, 4.2 | **Learning Checkpoint 1**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~45 |  | 4.3: Sequences with Multiplicative Patterns | Pre-AP Model Lesson 4.1: Counting Binary Strings | 4.3.1 | F.IF.3, 5  F.BF.1, 2  F.LE.1, 2 |  |
| ~135 |  | 4.3: Sequences with Multiplicative Patterns | Pre-AP Model Lesson 4.2: Multiplicative Patterns  SpringBoard Lesson: 21-1 Identifying Geometric Sequences | 4.3.1, 4.3.2 | F.IF.3, 5  F.BF.1, 2  F.LE.2 |  |
| ~120 |  | 4.3: Sequences with Multiplicative Patterns | Pre-AP Model Lesson 4.3: Finding Terms in a Geometric Sequence | 4.3.1, 4.3.2 | F.IF.3, 5  F.BF.1, 2  F.LE.2 |  |
| ~225 |  | 4.4: Exponential Growth and Decay | Pre-AP Model Lesson 4.4: Graphing Exponential Function  SpringBoard Lessons: 22-1 Exponential Functions and Exponential Growth and 22-2 Exponential Decay | 4.3.3,  4.4.1–4.4.3 | A.CED.2  A.REI.10  F.IF.4, 6, 7  F.BF.1  F.LE.1, 2 |  |
| ~105 |  | 4.4: Exponential Growth and Decay | Pre-AP Model Lesson 4.5: Modeling with Exponential Functions  SpringBoard Lesson: 22-3 Graphs of Exponential Functions | 4.4.3–4.4.5 | N.Q.1  A.SSE.1  A.CED.2  A.REI.10  F.IF.2, 4, 7  F.BF.1  F.LE.1, 2, 5 |  |
| ~45 |  | 4.4 | **Learning Checkpoint 2**  *This learning checkpoint can assess any of the learning objectives from its associated Key Concepts.* |  |  |  |
| ~45 |  | 4.1, 4.2, 4.3, 4.4 | **Performance Task**  Computer-Aided Drawing  *This practice performance task assesses learning objectives and essential knowledge statements addressed up to this point in the unit.* |  | N.Q.1  A.SSE.1  N.RN.1, 2  A.REI.10  F.IF.2–7  F.BF.1, 2  F.LE.1, 2, 5  A.SSE.3  N.RN.3 |  |

[add or remove rows as needed]

### Reflections

What went well in this unit?

When were students most engaged during this unit?

How have students grown? What opportunities for growth stand out at this time?

What needs modification or differentiation next time?