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## PROGRAM OVERVIEW

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#### **Unit 2: Linear and Exponential Relationships**

##### **Topic A: Graphs As Solution Sets and Function Notation**

Lesson 2.1.1: Graphing the Set of All Solutions

Lesson 2.1.2: Intersecting Graphs

Lesson 2.1.3: Domain and Range

Lesson 2.1.4: Function Notation and Evaluating Functions

##### **Conceptual Activities**

Desmos. “Card Sort: Functions.”

Desmos. “Function Carnival, Part 2.”

GeoGebra. “Systems of Equations on a Graph.”

GeoGebra. “Domain and Range.”

##### **Topic B: Solving Linear Inequalities in Two Variables and Systems of Inequalities**

Lesson 2.2.1: Solving Linear Inequalities in Two Variables

Lesson 2.2.2: Solving Systems of Linear Inequalities

##### **Conceptual Activity**

GeoGebra. “System of Inequalities.”

##### **Conceptual Task**

Book Cover Hustle, Parts 1 and 2

##### **Topic C: Sequences As Functions**

Lesson 2.3.1: Sequences As Functions

##### **Conceptual Activities**

GeoGebra. “Sequences (Dynamic Illustrator).”

GeoGebra. “Graphs of arithmetic sequences on a coordinate plane.”

##### **Topic D: Interpreting Graphs of Functions**

Lesson 2.4.1: Identifying Key Features of Linear and Exponential Graphs

Lesson 2.4.2: Average Rate of Change

Lesson 2.4.3: Recognizing Average Rate of Change

##### **Conceptual Activities**

Desmos. “Polygraph: Exponentials.”

GeoGebra. “Average Rate of Change.”

##### **Conceptual Task**

Infectious Dilemma, Parts 1 and 2

##### **Topic E: Analyzing Linear and Exponential Functions**

Lesson 2.5.1: Graphing Linear Functions

Lesson 2.5.2: Graphing Exponential Functions

##### **Conceptual Activities**

Desmos. “Card Sort: Linear Functions.”

Desmos. “Match My Line.”

Desmos. “What Comes Next?”

GeoGebra. “Explore exponential vs. linear functions.”

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#### **Topic F: Comparing Functions**

Lesson 2.6.1: Comparing Linear Functions

Lesson 2.6.2: Comparing Exponential Functions

Lesson 2.6.3: Comparing Linear to Exponential Functions

#### **Conceptual Activities**

Desmos. “Avi and Benita’s Repair Shop.”

Desmos. “Game, Set, Flat.”

#### **Conceptual Task**

Saving for a Boat, Parts 1 and 2

#### **Topic G: Building Functions**

Lesson 2.7.1: Building Functions from Context

Lesson 2.7.2: Constructing Functions from Graphs and Tables

#### **Conceptual Task**

Jumping Jamal, Parts 1 and 2

#### **Topic H: Operating on Functions and Transformations**

Lesson 2.8.1: Operating on Functions

Lesson 2.8.2: Transformations of Linear and Exponential Functions

#### **Conceptual Activities**

Desmos. “Marbleslides: Exponentials.”

GeoGebra. “Function Transformations.”

GeoGebra. “All operations on functions.”

#### **Topic I: Arithmetic and Geometric Sequences**

Lesson 2.9.1: Arithmetic Sequences

Lesson 2.9.2: Geometric Sequences

#### **Topic J: Interpreting Parameters**

Lesson 2.10.1: Interpreting Parameters

#### **Conceptual Activity**

GeoGebra. “Parameters of a Linear Equation.”

#### **Unit Review: Linear and Exponential Relationships**

#### **Unit 2 Assessment**

#### **Station Activities**

Comparing Linear Models

Relations Versus Functions/Domain and Range

Comparing Exponential Models

Interpreting Exponential Functions

Sequences