

M104 Modeling with Exponential Functions Badge Portfolio: A Showcase of Your Learning

Section 1: Required Tasks

Show off what you did! Submit work (or another agreed upon way of showing your thinking) for each of the tasks listed below.

	I Can Statements	Required Tasks	Student Reflection: What new learning does the task showcase?
104.a	Engage in the modeling cycle (performance assessment).	<ul style="list-style-type: none">• XQ Math Badging Performance Assessment: M104 Jellyfish TakeoverOR• IM Algebra I: Unit 5 Modeling Prompt 7: Critically Examining National Debt	
104.b	Interpret exponential functions that arise in applications in terms of the context.	<ul style="list-style-type: none">• IM Algebra I: Unit 5 Lesson 9 Activity 1: Cost of Solar Cells	
104.c	Analyze exponential functions using different representations.	<ul style="list-style-type: none">• IM Algebra I: Unit 5 Lesson 5 Activity 1: The Algae Bloom	
104.d	Build an exponential function that models a relationship between two quantities.	<ul style="list-style-type: none">• IM Algebra I: Unit 5 Lesson 8 Activity 2: Functionally Speaking	

	I Can Statements	Required Tasks	Student Reflection: What new learning does the task showcase?
104.e	Construct and compare linear and exponential models, solve problems, and draw conclusions.	<ul style="list-style-type: none"> IM Algebra I: Unit 5 Lesson 20 Cool-down: Increasing Input by One 	

Section 2: Choose Your Favorites

Show off your favorite work! For each expectation, SELECT at least one task from each group to demonstrate what you are learning. Which work do you feel best showcases all of the math you have learned?

	I Can Statements	Select at least one from each set	Student Reflection: What new learning does the task showcase?
104.b	Interpret exponential functions that arise in applications in terms of the context.	(Optional if additional evidence is needed) <ul style="list-style-type: none"> IM Algebra I: Unit 5 Lesson 9 Cool-down: Bacteria Population IM Algebra I: Unit 5 Lesson 6 Activity 1: Falling and Falling (#1-4) IM Algebra I: Unit 5 Lesson 8 Activity 3: Deciding on a Graphing Window IM Algebra I: Unit 5 Lesson 10 Activity 1: Coffee Shops 	

	I Can Statements	Select at least one from each set	Student Reflection: What new learning does the task showcase?
104.c	Analyze exponential functions using different representations.	(Optional if additional evidence is needed) <ul style="list-style-type: none"> IM Algebra I: Unit 5 Lesson 3 Activity 2: Graphing the Microbes IM Algebra I: Unit 5 Lesson 9 Activity 2: Paper Folding IM Algebra I: Unit 5 Lesson 12 Activity 1: Equations and Their Graph 	
104.d	Build an exponential function that models a relationship between two quantities.	(Optional if additional evidence is needed) <ul style="list-style-type: none"> IM Algebra I: Unit 5 Lesson 5 Cool-down: Acetaminophen IM Algebra I: Unit 5 Lesson 4 Cool-down: The Depreciating Phone IM Algebra I: Unit 5 Lesson 6 Activity 1: Falling and Falling (#5) 	
104.e	Construct and compare linear and exponential models, solve problems, and draw conclusions.	(Optional if additional evidence is needed) <ul style="list-style-type: none"> IM Algebra I: Unit 5 Lesson 5 Warm-up: Two Other Tables 	
104.f	Interpret expressions for exponential functions in terms of the situation they model.	<ul style="list-style-type: none"> IM Algebra I: Unit 6 Lesson 3 Cool-down: Mice in the Forest 	
104.g	Summarize, represent, and interpret data on two quantitative variables for linear and exponential model fits.	<ul style="list-style-type: none"> IM Algebra I: Unit 6 Lesson 21 Activity 1: Population Predictions 1 	
104.h	Understand the relevance of modeling with exponential functions.	<ul style="list-style-type: none"> Any tasks can be used but suggest using at least one from 104.a 	

	I Can Statements	Select at least one from each set	Student Reflection: What new learning does the task showcase?
104.i	Use functions of exponential type to determine values of interest in a real-world problem.	<ul style="list-style-type: none"> • IM Algebra I: Unit 5 Lesson 9 Activity 1: Cost of Solar Cells • IM Algebra I: Unit 5 Lesson 9 Cool-down: Bacteria Population 	