Lesson Objective and Assessment of Objective

By the end of the lesson, students will be able to: Write a function rule for an Exponential Function.

Content Objectives: Recognize exponential patterns using graphs and tables. Compare Linear and Exponential Functions

Academic Language Objectives: Important vocabulary for the lesson: Linear function, Exponential function, y-intercept, asymptote, constant, rate of change, common difference, and common multiplier

Why does this lesson matter?

Exponential functions are used in several professions/disciplines (mainly scientific) all over the world. It is important to be able to recognize exponential patterns and write exponential functions in order to be successful in those professions/disciplines.

Assessment Statement: How will students show they have met the objective?

Specific Standard Indicators Aligned with this Lesson:

- Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations. (AI.QE.1)
- Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b. (AI.QE.2)
- Graph exponential and quadratic equations in two variables with and without technology. (A1.QE.3)

_____

Type of Mathematical Knowledge Objective is seeking to measure
☒ Declarative
☒ Procedural
☒ Conceptual

Standards for Mathematical Practices

☒ Make sense of problems and persevere in solving them.
☒ Reason abstractly and quantitatively.
☐ Construct viable arguments and critique the reasoning of others.
☐ Model with mathematics.
☒ Use appropriate tools strategically.
☐ Attend to precision.
☐ Look for and make use of structure.
☒ Look for and express regularity in repeated reasoning.

Mathematic Conceptual Categories

☐ Number and Quantity
☒ Algebra
☒ Functions
☐ Modeling
☐ Geometry
☐ Statistics and Probability

Supporting Diverse Learners
Students with IEPs receive the following accommodations:
Preferential seating
Extended time on tests/projects
Students with LEPs receive the following accommodations:
Modified tests

List Strategies/Activities:
Notes

Method(s) for Instruction	Use of Materials	Use of Technology
☒ Class/Group Discussion ☐ Cooperative Learning ☒ Small Group ☒ Guided Practice ☒ Lecture or Direct Instruction ☐ Question/Answer ☐ Learning Stations ☐ Teacher Modeling/Demo. ☐ Journal writing ☐ Role Play ☐ Hands-on ☐ Inquiry Learning ☐ Game ☐ Simulation/Role Playing ☐ Independent Learning ☐ Other	☐ Teacher's Manual pg # ☒ Student Text pg # 54-62 ☐ Picture Books ☒ Handouts: HW #2 ☐ Manipulative: ☐ Related Equipment: ☐ Adapted materials:	☐ Cell Phone ☐ PollEverywhere.com ☐ CPS Clickers ☐ Elmo Document Camera ☒ Software: AgileMind ☐ Student Computers ☐ Teacher Computer ☐ Video Clips/DVD ☐ Website ☐ Web 2.0 tool ☒ Other: Smartboard

Lesson Agenda

Warm up: How will you support students in accessing prior knowledge, personal, real world and/or cultural connections?
The bellwork is written so that students do both review problems from previous topics and some problems from the current topic. This gives them a chance to strength their prior knowledge of past topics, and to help reinforce the new topic.

Time	Teacher Will Be:	Students Will Be:
5 minutes Welcome/ Starting Bellwork	Welcoming the class, giving any necessary beginning announcements, and putting the students on task (bellwork).	Starting/attempting their bellwork.
5 minutes Wrapping Up Bellwork	Mrs. Petrin and I will ask for volunteers to put up their work for a specific Bellwork problem. After students have put up their work, Mrs. Petrin or I will lead the students in a discussion about their peer's work, and correct any mistakes or miscalculations.	Select students will put up their work for a specific Bellwork problem. Students will correct their Bellwork if needed.
10 minutes HW Check/Questions	Mrs. Petrin or I will ask for the students to put up their Bellwork and get out their homework from the previous night. Then we will project/talk about the answers and go over any problems the students need (provided there is sufficient time).	Students will get out their homework and begin checking their answers either from the projected answers on the smartboard, or from the answers we provide them. They will ask about any questions they need answered.
20 minutes Lesson # 2 Comparing Linear and Exponential Functions	Mrs. Petrin and I will ask the students to put away their homework, get out their AgileMind textbook, and turn to page 54. Mrs. Petrin or I will then lead the students through the lesson using the textbook and AgileMind software.	Opening their AgileMind textbook to page 54. Students will take notes in their AgileMind textbook and actively participate in the lesson.
10 minutes Work/Study Time/Exit Slip	We will wrap up the lesson in order to give the students a chance to work/ask questions about tonight's homework.	After finishing the lesson the students have work time to ask questions related to tonight's homework.

Transition to Wrap up/Closing: **How will you engage students in self-assessment and/or reflection on key concepts?**
The students will complete a quick write where they will say one thing that went well/they liked/something new that they understand, and one thing they are still confused about/need help on.

Daily Assessment *How do you know your students met your lesson objective(s)?*

- ☒ knowledge
- ☒ comprehension
- ☐ application
- ☐ analysis
- ☐ synthesis
- ☐ evaluation

Formative:
- ☒ Class discussion
- ☐ CPS clickers
- ☐ Email teacher
- ☒ Entrance/Exit slip
- ☒ Teacher Observe
- ☐ Thumbs up, neutral, or down
- ☒ Homework check
- ☐ Listened to conversations
- ☐ Math Journal
- ☐ Quiz
- ☐ Video quiz
- ☐ Voting
- ☐ Whiteboard Check
- ☐ Other

Summative:
- ☐ Test
- ☐ Project
- ☐ Report
- ☐ Presentation
- ☐ Final Exam
- ☐ Other

Additional Teacher Preparation:
 Materials: HW #2

Technology: Smartboard, AgileMind

Copy:

Locate:

Daily Reflection

Teacher: Rachel Wraley **Lesson # in Unit: 2** **Lesson Topic:** Exponential Functions

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Lesson Objective and Assessment of Objective

By the end of the lesson, students will be able to: Write a function rule for an Exponential Function being conscious of growth or decay.

   Content Objectives: Recognize exponential patterns using graphs and tables. Recognize the pattern in exponential growth and decay.

   Academic Language Objectives: Important vocabulary for the lesson: Linear function, Exponential function, y-intercept, asymptote, constant, rate of change, common difference, and common multiplier

Why does this lesson matter?

   Exponential functions are used in several professions/disciplines (mainly scientific) all over the world. It is important to be able to recognize exponential patterns and write exponential functions in order to be successful in those professions/disciplines.

Assessment Statement: How will students show they have met the objective?

Specific Standard Indicators Aligned with this Lesson:

- Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations. (AI.QE.1)
- Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b. (AI.QE.2)
- Graph exponential and quadratic equations in two variables with and without technology. (A1.QE.3)

_____

Type of Mathematical Knowledge Objective is seeking to measure
☒ Declarative
☒ Procedural
☒ Conceptual

Standards for Mathematical Practices

☒ Make sense of problems and persevere in solving them.
☒ Reason abstractly and quantitatively.
☐ Construct viable arguments and critique the reasoning of others.
☐ Model with mathematics.
☒ Use appropriate tools strategically.
☐ Attend to precision.
☐ Look for and make use of structure.
☒ Look for and express regularity in repeated reasoning.

Mathematic Conceptual Categories

☐ Number and Quantity
☒ Algebra
☒ Functions
☐ Modeling
☐ Geometry
☐ Statistics and Probability

Supporting Diverse Learners
Students with IEPs receive the following accommodations:
Preferential seating
Extended time on tests/projects
Students with LEPs receive the following accommodations:
Modified tests

List Strategies/Activities:
Compare/Contrast Categories
Notes

Method(s) for Instruction	Use of Materials	Use of Technology
☒ Class/Group Discussion ☐ Cooperative Learning ☒ Small Group ☒ Guided Practice ☒ Lecture or Direct Instruction ☐ Question/Answer ☐ Learning Stations ☐ Teacher Modeling/Demo. ☐ Journal writing ☐ Role Play ☐ Hands-on ☐ Inquiry Learning ☐ Game ☐ Simulation/Role Playing ☐ Independent Learning ☐ Other	☐ Teacher's Manual pg # ☒ Student Text pg # 63-76 ☐ Picture Books ☒ Handouts: HW #3 ☐ Manipulative: ☐ Related Equipment: ☐ Adapted materials:	☐ Cell Phone ☐ PollEverywhere.com ☐ CPS Clickers ☐ Elmo Document Camera ☒ Software: AgileMind ☐ Student Computers ☐ Teacher Computer ☐ Video Clips/DVD ☐ Website ☐ Web 2.0 tool ☒ Other: Smartboard

Lesson Agenda

Warm up: **How will you support students in accessing prior knowledge, personal, real world and/or cultural connections?**
The bellwork is written so that students do both review problems from previous topics and some problems from the current topic. This gives them a chance to strength their prior knowledge of past topics, and to help reinforce the new topic.

Time	Teacher Will Be:	Students Will Be:
5 minutes Welcome/ Starting Bellwork	Welcoming the class, giving any necessary beginning announcements, and putting the students on task (bellwork).	Starting/attempting their bellwork.
5 minutes Wrapping Up Bellwork	Mrs. Petrin and I will ask for volunteers to put up their work for a specific Bellwork problem. After students have put up their work, Mrs. Petrin or I will lead the students in a discussion about their peer's work, and correct any mistakes or miscalculations.	Select students will put up their work for a specific Bellwork problem. Students will correct their Bellwork if needed.
10 minutes HW Check/Questions	Mrs. Petrin or I will ask for the students to put up their Bellwork and get out their homework from the previous night. Then we will project/talk about the answers and go over any problems the students need (provided there is sufficient time).	Students will get out their homework and begin checking their answers either from the projected answers on the smartboard, or from the answers we provide them. They will ask about any questions they need answered.
5 minutes Mathegories	After handing out an envelope to each group of students, we will be wandering around the classroom answering questions and/or checking work as we are asked.	Categorizing different functions, tables of values, graphs, and story problems as either linear or exponential.
15 minutes Lesson # 3 Exponential Growth and Decay	Mrs. Petrin and I will ask the students to put away their homework, get out their AgileMind textbook, and turn to page 63. Mrs. Petrin or I will then lead the students through the lesson using the textbook and AgileMind software.	Opening their AgileMind textbook to page 63. Students will take notes in their AgileMind textbook and actively participate in the lesson.

10 minutes Work/Study Time/Exit Slip	We will wrap up the lesson in order to give the students a chance to work/ask questions about tonight's homework.	After finishing the lesson the students have work time to ask questions related to tonight's homework.

Transition to Wrap up/Closing: **How will you engage students in self-assessment and/or reflection on key concepts?**

Daily Assessment *How do you know your students met your lesson objective(s)?*	*Formative:*	**Summative:**
☒ knowledge ☒ comprehension ☒ application ☐ analysis ☐ synthesis ☐ evaluation	☒ Class discussion ☐ CPS clickers ☐ Email teacher ☒ Entrance/Exit slip ☒ Teacher Observe ☐ Thumbs up, neutral, or down ☒ Homework check ☐ Listened to conversations ☐ Math Journal ☐ Quiz ☐ Video quiz ☐ Voting ☐ Whiteboard Check ☐ Other	☐ Test ☐ Project ☐ Report ☐ Presentation ☐ Final Exam ☐ Other

Additional Teacher Preparation:
 Materials: HW #3

Technology: Smartboard, AgileMind

Copy:

Locate:

Daily Reflection

Lesson Objective and Assessment of Objective

By the end of the lesson, students will be able to: Write a function rule for an Exponential Function. Model situations by writing an Exponential Function, create a table of values, and graph the function.

    Content Objectives: Recognize Exponential patterns using graphs and tables. Recognize the pattern in Exponential growth and decay. Modeling with Exponential Functions.

    Academic Language Objectives: Important vocabulary for the lesson: Linear function, Exponential function, y-intercept, asymptote, constant, rate of change, common difference, and common multiplier

Why does this lesson matter?

    Exponential functions are used in several professions/disciplines (mainly scientific) all over the world. It is important to be able to recognize exponential patterns and write exponential functions in order to be successful in those professions/disciplines.

Assessment Statement: How will students show they have met the objective?

Specific Standard Indicators Aligned with this Lesson:

- Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations. (AI.QE.1)
- Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b. (AI.QE.2)
- Graph exponential and quadratic equations in two variables with and without technology. (A1.QE.3)

_____

Type of Mathematical Knowledge Objective is seeking to measure
☒ Declarative
☒ Procedural
☒ Conceptual

Standards for Mathematical Practices

☒ Make sense of problems and persevere in solving them.
☒ Reason abstractly and quantitatively.
☐ Construct viable arguments and critique the reasoning of others.
☐ Model with mathematics.
☒ Use appropriate tools strategically.
☐ Attend to precision.
☐ Look for and make use of structure.
☒ Look for and express regularity in repeated reasoning.

Mathematic Conceptual Categories

☐ Number and Quantity
☒ Algebra
☒ Functions
☐ Modeling
☐ Geometry
☐ Statistics and Probability

Supporting Diverse Learners
Students with IEPs receive the following accommodations:
Preferential seating
Extended time on tests/projects
Students with LEPs receive the following accommodations:
Modified tests

List Strategies/Activities:
Notes

Method(s) for Instruction	Use of Materials	Use of Technology
☒ Class/Group Discussion ☐ Cooperative Learning ☒ Small Group ☒ Guided Practice ☒ Lecture or Direct Instruction ☐ Question/Answer ☐ Learning Stations ☐ Teacher Modeling/Demo. ☐ Journal writing ☐ Role Play ☐ Hands-on ☐ Inquiry Learning ☐ Game ☐ Simulation/Role Playing ☐ Independent Learning ☐ Other	☐ Teacher's Manual pg # ☒ Student Text pg # 77-80 ☐ Picture Books ☒ Handouts: HW #4 ☐ Manipulative: ☐ Related Equipment: ☐ Adapted materials:	☐ Cell Phone ☐ PollEverywhere.com ☐ CPS Clickers ☐ Elmo Document Camera ☒ Software: AgileMind ☐ Student Computers ☐ Teacher Computer ☐ Video Clips/DVD ☐ Website ☐ Web 2.0 tool ☒ Other: Smartboard

Lesson Agenda

Warm up: **How will you support students in accessing prior knowledge, personal, real world and/or cultural connections?**
The bellwork is written so that students do both review problems from previous topics and some problems from the current topic. This gives them a chance to strength their prior knowledge of past topics, and to help reinforce the new topic.

Time	Teacher Will Be:	Students Will Be:
5 minutes Welcome/ Starting Bellwork	Welcoming the class, giving any necessary beginning announcements, and putting the students on task (bellwork).	Starting/attempting their bellwork.
5 minutes Wrapping Up Bellwork	Mrs. Petrin and I will ask for volunteers to put up their work for a specific Bellwork problem. After students have put up their work, Mrs. Petrin or I will lead the students in a discussion about their peer's work, and correct any mistakes or miscalculations.	Select students will put up their work for a specific Bellwork problem. Students will correct their Bellwork if needed.
10 minutes HW Check/Questions	Mrs. Petrin or I will ask for the students to put up their Bellwork and get out their homework from the previous night. Then we will project/talk about the answers and go over any problems the students need (provided there is sufficient time).	Students will get out their homework and begin checking their answers either from the projected answers on the smartboard, or from the answers we provide them. They will ask about any questions they need answered.
20 minutes Lesson # 4 Modeling Exponential Growth	Mrs. Petrin and I will ask the students to put away their homework, get out their AgileMind textbook, and turn to page 77. Mrs. Petrin or I will then lead the students through the lesson using the textbook and AgileMind software.	Opening their AgileMind textbook to page 77. Students will take notes in their AgileMind textbook and actively participate in the lesson.
10 minutes Work/Study Time/Exit Slip	We will wrap up the lesson in order to give the students a chance to work/ask questions about tonight's homework.	After finishing the lesson the students have work time to ask questions related to tonight's homework.

Transition to Wrap up/Closing: **How will you engage students in self-assessment and/or reflection on key concepts?**

Daily Assessment *How do you know your students met your lesson objective(s)?*	*Formative:*	**Summative:**
☒ knowledge ☒ comprehension ☒ application ☐ analysis ☐ synthesis ☐ evaluation	☒ Class discussion ☐ CPS clickers ☐ Email teacher ☒ Entrance/Exit slip ☒ Teacher Observe ☐ Thumbs up, neutral, or down ☒ Homework check ☐ Listened to conversations ☐ Math Journal ☐ Quiz ☐ Video quiz ☐ Voting ☐ Whiteboard Check ☐ Other	☐ Test ☐ Project ☐ Report ☐ Presentation ☐ Final Exam ☐ Other

Additional Teacher Preparation:

 Materials: HW #4

Technology: Smartboard, AgileMind

Copy:

Locate:

Daily Reflection

Lesson Objective and Assessment of Objective

By the end of the lesson, students will be able to: Model situations by writing an Exponential Function, create a table of values, and graph the function.

   Content Objectives: Recognize Exponential patterns using graphs and tables. Recognize the pattern in Exponential growth and decay. Modeling with Exponential Functions.

   Academic Language Objectives: Important vocabulary for the lesson: Linear function, Exponential function, y-intercept, constant, rate of change, increasing, decreasing, growth, decay, common difference, and common multiplier

Why does this lesson matter?

   Exponential functions are used in several professions/disciplines (mainly scientific) all over the world. It is important to be able to recognize exponential patterns and write exponential functions in order to be successful in those professions/disciplines.

Assessment Statement: How will students show they have met the objective?

Specific Standard Indicators Aligned with this Lesson:

- AI.QE.1: Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations.
- AI.QE.2: Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b.
- A1.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

_____

Type of Mathematical Knowledge Objective is seeking to measure
☒ Declarative
☒ Procedural
☒ Conceptual

Standards for Mathematical Practices

☒ Make sense of problems and persevere in solving them.
☒ Reason abstractly and quantitatively.
☐ Construct viable arguments and critique the reasoning of others.
☒ Model with mathematics.
☒ Use appropriate tools strategically.
☐ Attend to precision.
☒ Look for and make use of structure.
☒ Look for and express regularity in repeated reasoning.

Mathematic Conceptual Categories

☐ Number and Quantity
☒ Algebra
☒ Functions
☐ Modeling
☐ Geometry
☐ Statistics and Probability

Supporting Diverse Learners
Students with IEPs receive the following accommodations:
Preferential seating
Extended time on tests/projects
Students with LEPs receive the following accommodations:
Modified tests

List Strategies/Activities:
Jigsaw

Method(s) for Instruction	Use of Materials	Use of Technology
☒ Class/Group Discussion ☐ Cooperative Learning ☒ Small Group ☒ Guided Practice ☐ Lecture or Direct Instruction ☒ Question/Answer ☐ Learning Stations ☐ Teacher Modeling/Demo. ☐ Journal writing ☐ Role Play ☐ Hands-on ☐ Inquiry Learning ☐ Game ☒ Simulation/Role Playing ☐ Independent Learning ☐ Other	☐ Teacher's Manual pg # ☐ Student Text pg # ☐ Picture Books ☒ Handouts: HW #5, Modeling Exponential Growth Packet, Exponential Function Practice Test ☐ Manipulative: ☐ Related Equipment: ☐ Adapted materials:	☐ Cell Phone ☐ PollEverywhere.com ☐ CPS Clickers ☐ Elmo Document Camera ☐ Software: AgileMind ☐ Student Computers ☐ Teacher Computer ☐ Video Clips/DVD ☐ Website ☐ Web 2.0 tool ☒ Other: Smartboard

Lesson Agenda

Warm up: **How will you support students in accessing prior knowledge, personal, real world and/or cultural connections?**

Time	Teacher Will Be:	Students Will Be:
5 minutes HW #4 Questions	We will project/talk about the answers from last night's homework and go over any problems the students need (provided there is sufficient time).	Students will get out their homework and begin checking their answers either from the projected answers on the smartboard, or from the answers we provide them. They will ask about any questions they need answered.
5 minutes Modeling Exponential Functions Directions	I will have them put everything except their Modeling Exponential Growth Packet away. I will then give the directions for the packet and assign each group a problem from the packet to complete.	They will put away their things, listen to directions, and ask any clarifying questions they have.
10 minutes Modeling with Exponential Functions with their group	During the activity Mrs. Petrin and I will be roaming around the classroom providing any necessary academic/language support. Towards the end we will give each student one of five difference fake currency.	Modeling the specific situation that goes with their problem by creating a table of values, a function rule, graph the function, and then come up with a conclusion/solution to the accompanying questions.
15 minutes "Presentations" of Modeled Exponential Functions	Roaming around the room providing support when necessary.	The students move to new groups based on the currency they received from Mrs. Petrin or me. After students re-group they share the solution to their problem with their new group members.
10 minutes Final problem	I will lead the students through solving the final problem.	Working through the final problem.

Transition to Wrap up/Closing: **How will you engage students in self-assessment and/or reflection on key concepts?**

Daily Assessment *How do you know your students met your lesson objective(s)?*	*Formative:* ☒ Class discussion ☐ CPS clickers	Summative: ☐ Test ☐ Project

☒ knowledge ☒ comprehension ☒ application ☒ analysis ☐ synthesis ☐ evaluation	☐ Email teacher ☒ Entrance/Exit slip ☒ Teacher Observe ☐ Thumbs up, neutral, or down ☒ Homework check ☒ Listened to conversations ☐ Math Journal ☐ Quiz ☐ Video quiz ☐ Voting ☐ Whiteboard Check ☐ Other	☐ Report ☐ Presentation ☐ Final Exam ☒ Other

Additional Teacher Preparation:
 Materials: HW #5, Modeling Exponential Growth Packet, Exponential Function Practice Test

Technology: Smartboard, AgileMind

Copy:

Locate:

Daily Reflection

Teacher: Rachel Wraley   **Lesson # in Unit: 5**   **Lesson Topic:** Exponential Functions

Lesson Objective and Assessment of Objective

By the end of the lesson, students will be able to: Write a function rule for an Exponential Function. Model situations by writing an Exponential Function, create a table of values, and graph the function.

   Content Objectives: Recognize Exponential patterns using graphs and tables. Recognize the pattern in Exponential growth and decay. Modeling with Exponential Functions.

   Academic Language Objectives: Important vocabulary for the lesson: Linear function, Exponential function, y-intercept, asymptote, constant, rate of change, common difference, and common multiplier

Why does this lesson matter?

   Exponential functions are used in several professions/disciplines (mainly scientific) all over the world. It is important to be able to recognize exponential patterns and write exponential functions in order to be successful in those professions/disciplines.

Assessment Statement: How will students show they have met the objective?

Specific Standard Indicators Aligned with this Lesson:

- Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations. (AI.QE.1)
- Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b. (AI.QE.2)
- Graph exponential and quadratic equations in two variables with and without technology. (A1.QE.3)

_____

Type of Mathematical Knowledge Objective is seeking to measure
☒ Declarative
☒ Procedural
☒ Conceptual

Standards for Mathematical Practices

☒ Make sense of problems and persevere in solving them.
☒ Reason abstractly and quantitatively.
☐ Construct viable arguments and critique the reasoning of others.
☐ Model with mathematics.
☒ Use appropriate tools strategically.
☐ Attend to precision.
☐ Look for and make use of structure.
☒ Look for and express regularity in repeated reasoning.

Mathematic Conceptual Categories

☐ Number and Quantity
☒ Algebra
☒ Functions
☐ Modeling
☐ Geometry
☐ Statistics and Probability

Supporting Diverse Learners
Students with IEPs receive the following accommodations:
Preferential seating
Extended time on tests/projects
Students with LEPs receive the following accommodations:
Modified tests

List Strategies/Activities:

Method(s) for Instruction	Use of Materials	Use of Technology
☒ Class/Group Discussion ☐ Cooperative Learning ☒ Small Group ☒ Guided Practice ☐ Lecture or Direct Instruction ☒ Question/Answer ☐ Learning Stations ☐ Teacher Modeling/Demo. ☐ Journal writing ☐ Role Play ☐ Hands-on ☐ Inquiry Learning ☐ Game ☐ Simulation/Role Playing ☐ Independent Learning ☐ Other	☐ Teacher's Manual pg # ☐ Student Text pg # ☐ Picture Books ☒ Handouts: Exponential Functions Practice Test ☐ Manipulative: ☐ Related Equipment: ☐ Adapted materials:	☐ Cell Phone ☐ PollEverywhere.com ☐ CPS Clickers ☐ Elmo Document Camera ☐ Software: AgileMind ☐ Student Computers ☐ Teacher Computer ☐ Video Clips/DVD ☐ Website ☐ Web 2.0 tool ☒ Other: Smartboard

Lesson Agenda

Warm up: **How will you support students in accessing prior knowledge, personal, real world and/or cultural connections?**

Time	Teacher Will Be:	Students Will Be:
5 minutes Welcome/Bellwork Quiz	Keeping the students on track (doing their bellwork quiz).	Completing their bellwork quiz.
10 minutes HW #5 Check/Questions	Mrs. Petrin or I will ask for the students to get out their homework from the previous night. Then we will project/talk about the answers and go over any problems the students need (provided there is sufficient time).	Students will get out their homework and begin checking their answers either from the projected answers on the smartboard, or from the answers we provide them. They will ask about any questions they need answered.
25 minutes Test Review	Mrs. Petrin and I will facilitate a review session for the Exponentials Functions Test.	Participating in the test review.
10 minutes Work/Study Time	We will wrap up the lesson in order to give the students a chance to work/ask questions about tonight's homework.	After finishing the lesson the students have work time to ask questions related to tonight's homework.

Transition to Wrap up/Closing: **How will you engage students in self-assessment and/or reflection on key concepts?**

Daily Assessment *How do you know your students met your lesson objective(s)?*	Formative:	Summative:
☒ knowledge ☒ comprehension ☒ application ☒ analysis ☐ synthesis ☐ evaluation	☒ Class discussion ☐ CPS clickers ☐ Email teacher ☒ Entrance/Exit slip ☒ Teacher Observe ☐ Thumbs up, neutral, or down ☒ Homework check ☐ Listened to conversations ☐ Math Journal ☐ Quiz ☐ Video quiz ☐ Voting ☐ Whiteboard Check ☐ Other	☐ Test ☐ Project ☐ Report ☐ Presentation ☐ Final Exam ☐ Other

Additional Teacher Preparation:
Materials: Exponential Function Practice Test

Technology: Smartboard, AgileMind

Copy:	
Locate:	

Daily Reflection