|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Standard: **AA.FGR.3.2 – Analyze, graph, and compare exponential and logarithmic functions.**  **AA.FGR.3.3: Use the definition of a logarithm, logarithmic properties, and the inverse relationship between exponential and logarithmic functions to solve problems in context.**  Assessment: ☐ Quiz ☐ Unit Test ☐ Project ☐ Lab ☐ None | | | | | | | | | | | |
|  | *C:\Users\thiyasr\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\FEF22E5.tmp*  **Learning Target**    **Success Criteria 1**    **Success Criteria 2** | **Activation of Learning**  *(5 min)* | **Focused Instruction**  *(10 min)*  ***\*I DO*** | **Guided Instruction**  *(10 min)*  ***\*WE DO*** | | | **Collaborative**  **Learning**  *(10 min)*  ***\*Y’ALL DO*** | | **Independent Learning**  *(10 min)*  ***\*YOU DO*** | | **Closing**  *(5 min)* |
| * Do Now * Quick Write\* * Think/Pair/Share * Polls * Notice/Wonder * Number Talks * Engaging Video * Open-Ended Question | * Think Aloud * Visuals * Demonstration * Analogies\* * Worked Examples * Nearpod Activity * Mnemonic Devices\* | * Socratic Seminar \* * Call/Response * Probing Questions * Graphic Organizer * Nearpod Activity * Digital Whiteboard | | | * Jigsaw\* * Discussions\* * Expert Groups * Labs * Stations * Think/Pair/Share * Create Visuals * Gallery Walk | | * Written Response\* * Digital Portfolio * Presentation * Canvas Assignment * Choice Board * Independent Project * Portfolio | | * Group Discussion * Exit Ticket * 3-2-1 * Parking Lot * Journaling\* * Nearpod |
| **Monday** | ** Learning Target: I will  Learning Objective (I Can): I can graph basic logarithmic functions and identify their key features (domain, range, intercepts, asymptotes).**  ** Success Criteria: ✅ I can explain how logarithms are the inverse of exponentials. ✅ I can plot points to sketch a logarithmic graph. ✅ I can identify the vertical asymptote and intercepts.** | Quick review of exponential graphs; connect to how logarithms are the inverse. | Teacher models graphing basic logarithmic functions (e.g., y=log⁡b(x)y = \log\_b(x)y=logb​(x)), discussing domain, range, intercepts, and asymptotes | Class graphs y=log⁡2(x)y = \log\_2(x)y=log2​(x) and y=log⁡10(x)y = \log\_{10}(x)y=log10​(x) together on graph paper/Desmos. | | | In pairs, students graph given logarithmic functions and describe transformations. | | Students complete 2 practice problems individually. | | Exit ticket – Describe one key difference between exponential and logarithmic graphs. |
| **Tuesday** | ** Learning Objective (I Can): I can describe and graph transformations of logarithmic functions.**  ** Success Criteria: ✅ I can shift, reflect, and stretch/shrink a logarithmic graph. ✅ I can explain how changing the base affects the graph’s shape. ✅ I can compare exponential and logarithmic graphs.** | Warm-up: Match exponential functions with their inverse logarithmic graphs. | Teacher models how shifts, reflections, and stretches affect log functions (e.g., y=log⁡(x−2)+3y = \log(x-2) + 3y=log(x−2)+3). | Class graphs a transformed function together, highlighting asymptote shifts. | | | Groups graph multiple transformationsand present observations. | | | Students practice graphing 2–3 transformed log functions. | Quickwrite – “How does changing the base of a logarithm affect its graph?” |
| **Wednesday** | ** Learning Objective (I Can): I can solve simple logarithmic equations by rewriting them in exponential form.**  ** Success Criteria: ✅ I can rewrite a logarithmic equation as an exponential equation. ✅ I can solve for the variable correctly. ✅ I can check that my solution is valid for the domain.** | Solve an exponential equation, then ask: “What if the variable is inside a log?” | Teacher demonstrates solving log equations by rewriting in exponential form (e.g., log⁡2(x)=3\log\_2(x) = 3log2​(x)=3). | Solve 2 problems together, emphasizing domain restrictions. | | | Pairs solve practice equations, checking answers with calculators. | | Students solve 2 problems independently. | | Exit slip – Solve one log equation and explain steps. |
| **Thursday** | ** Learning Objective (I Can): I can solve logarithmic equations using properties of logarithms (product, quotient, and power rules).**  ** Success Criteria: ✅ I can apply log properties to combine or expand expressions. ✅ I can solve multi-step logarithmic equations. ✅ I can check for and eliminate extraneous solutions.** | Review log properties (product, quotient, power). | Teacher models solving equations using log properties (e.g., log⁡(x)+log⁡(x−3)=1\log(x) + \log(x-3) = 1log(x)+log(x−3)=1). | Class solves one multi-step problem with properties. | | Small groups work on 2–3 problems requiring multiple log properties. | | | | Students complete an individual problem set. | Exit ticket – Explain why it’s important to check solutions for extraneous answers in log equations. |
| **Friday** | ** Learning Objective (I Can): I can analyze, graph, and solve problems involving exponential and logarithmic functions.**  ** Success Criteria: ✅ I can match exponential and logarithmic functions as inverses. ✅ I can graph both basic and transformed logarithmic functions. ✅ I can solve logarithmic equations with and without properties. ✅ I can explain my reasoning on GADOE review problems.** | Quick Kahoot/Quizizz review warm-up (exponential vs. logarithmic functions). | Teacher models one review problem from GADOE material. | | Solve one graphing and one equation problem together. | Groups work through selected GADOE review problems. | | Students complete a mini-review quiz individually. | | | Reflect – “What skill from this week do you feel strongest in, and what do you need to keep practicing?” |

*\*key literacy strategies*