**WAG: Introduction to Logarithms (Sept 22–26, 2025) Advanced Algebra**

| **Day** | **Learning Target (LT)** | **Success Criteria (SC)** | **Activation of Learning (5 min)** | **Focused Instruction – I DO (10 min)** | **Guided Instruction – WE DO (10 min)** | **Collaborative Learning – Y’ALL DO (10 min)** | **Independent Learning – YOU DO (10 min)** | **Closing (5 min)** |
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| **Mon 9/22** | **LT:** I can explain what a logarithm is in words. **SC1:** I can say “a log asks: what power makes the number?” **SC2:** I can turn 2³=8 into log₂(8)=3. | **Activation:** Show 2³=8 on board. Ask: “What does 2×2×2 equal?” Then ask: “How many 2s did we use?” (HIS: Think-Pair-Share, concrete talk.) | **I DO:** Teacher writes exponential form (2³=8), then shows log form (log₂(8)=3). Use “undo” language: exponent → log. Repeat with 10²=100. | **WE DO:** Solve 2³=8 together → log₂(8)=3. Teacher asks: “What does log₂(8) mean?” Students respond in chorus: “What power of 2 makes 8?” | **Y’ALL DO:** In pairs, students match cards: one card has exponential (3²=9), other has log (log₃(9)=2). They match and explain. (HIS: Matching Game.) | **YOU DO:** Students complete 4 simple conversions (e.g., 5²=25 → log₅(25)=2). | **Closing:** Quick Write: “Logarithm means….” (1 sentence). Teacher calls on 2 students. |  |
| **Tue 9/23** | **LT:** I can change between exponential form and logarithmic form. **SC1:** I can do 5³=125 ↔ log₅(125)=3. **SC2:** I can explain which number is the base. | **Activation:** Teacher shows 10²=100 and asks: “What’s the base? What’s the exponent?” (HIS: See-Think-Wonder.) | **I DO:** Teacher models base/exponent clearly with color coding: base is red, exponent is blue, result is green. Convert both ways. | **WE DO:** Solve together: 3²=9 ↔ log₃(9)=2. Teacher asks: “Which number is the base? Which is the answer?” | **Y’ALL DO:** Small groups get a worksheet with mixed forms. They circle base, exponent, answer before converting. | **YOU DO:** Students independently do 4 conversions with big hints (boxes labeled “base,” “exponent”). | **Closing:** Students finish sentence stem: “The base is the number we…” |  |
| **Wed 9/24** | **LT:** I can use a calculator to find simple logs (like log(1000)). **SC1:** I can press the log button and get an answer. **SC2:** I can check if the answer makes sense. | **Activation:** Ask: “What power of 10 makes 1000?” Students guess. (HIS: Estimation Talk.) | **I DO:** Teacher shows calculator: log(1000)=3. Explains: “Because 10³=1000.” Shows log(100)=2. | **WE DO:** Together compute log(10)=1, log(100)=2, log(1000)=3. Teacher says, “Check with exponents.” | **Y’ALL DO:** In pairs, students punch log(10), log(1000), log(10000) into calculator, write answers, check with exponents. | **YOU DO:** Students independently try 3 calculator problems: log(100), log(1000), log(10000). | **Closing:** Quick Write: “log(1000)=3 because 10³=\_\_\_.” Fill in blank. |  |
| **Thu 9/25** | **LT:** I can solve simple log equations. **SC1:** I can solve log₂(x)=3 by writing x=2³. **SC2:** I can solve 5ʸ=25 by writing y=log₅(25). | **Activation:** Write log₂(x)=3. Ask: “What does this mean in words?” Students respond with hints. | **I DO:** Teacher models solving: log₂(x)=3 → x=2³=8. Then: 3ʸ=27 → y=log₃(27)=3. Color code base and answer. | **WE DO:** Solve together: log₅(x)=2 → x=25. Students use whiteboards to show answers. | **Y’ALL DO:** Small groups solve 3 practice equations with teacher walking around. | **YOU DO:** Students solve 2 equations alone with teacher support. | **Closing:** Sentence stem: “log₂(x)=3 means x = …” Students say answer aloud. |  |
| **Fri 9/26** | **LT:** I can use all my log skills (definition, conversion, calculator, solving). **SC1:** I can answer 4/5 mixed problems. **SC2:** I can explain one in words. | **Activation:** Quick review game: Teacher flashes exponential on board, class shouts log form. (HIS: Choral Response.) | **I DO:** Model a full problem: 2³=8 ↔ log₂(8)=3 ↔ check with calculator. | **WE DO:** Class solves 2 mixed problems with teacher step-by-step. | **Y’ALL DO:** Teams do a relay: each solves one problem, passes paper to next teammate. | **YOU DO:** Short quiz: 5 problems (mix of definition, conversion, calculator). | **Closing:** Reflection: “One thing I can do with logs is…” Students share. |  |