Open Questions

To assess student's knowledge, identify misconceptions and inform future teaching the following probing, open ended questions can be used. Students can display their results using mini-whiteboards to gain instant feedback.

- Give an example of a logarithm that simplifies to 3 (or 4 or 2 or –2 .....)

- Give an example of two logarithms that add together to make $\log_a 36$ (24 or .....)

- Give an example of two logarithms that make $\log_a 5$ when subtracted (or 6 .....)

- Explain why log 4 + log 9 = 36.

- Give possible numbers for the blanks

  - $\log_{\square} \square = 3$

  - $\log_{\square} \square + \log_{\square} \square = \log_{\square} \square$

  - $\log_{\square} \square - \log_{\square} \square = \log_{\square} \square$

- Explain why $y = -\log x$ is the same graph as $y = \log \dfrac{1}{x}$

- Explain why the graph of $y = \log 2x$ is a translation, in the direction of the y axis, of the graph $y = \log x$.

- Explain why the graph of $y = \log x^2$ is a stretch in the direction of the y axis of the graph of $y = \log x$.

- Explain why the graph of $y = \log x$ passes through the point (1, 0).

- Explain why the y-intercept on the graph of $y = \log(x + 10)$ is equal to 1.

Simplifying Expressions Using the Rules of Logarithms.   Susan Wall 2012