

Log Wars

Learners should have some knowledge of:

- Evaluating logarithms

Preparation

- Print Card Set A and Card Set B on different coloured paper. This allows the task to be differentiated according to the players.
- Cut out the cards

How to play

Calculators should not be used

- Cards should be shuffled and placed face down in front of the players
- Each player picks up a card and positions it face up in front of them so the others players can see it
- Players evaluate their chosen card and the player with the highest value card wins
- In the event of a tie, affected players should choose another card until the tie is settled
- The winning player collects and keeps all the cards from that round
- Play continues until there are no cards left
- The winner is the player with the most cards at the end of the game

Notes

- Players should be encouraged to check and (if necessary) challenge other players
- A calculator could be kept handy to settle any disputes
- Depending on the players, you might choose initially to issue only the expressions from card set A. The cards from set B can be introduced as appropriate.

Card Set A

$\log_2 4$	$\log_2 8$	$\log_2 16$
$\log_2 32$	$\log_2 2$	$\log_2 1$
$\log_3 1$	$\log_3 3$	$\log_3 9$
$\log_3 27$	$\log_3 81$	$\log_{10} 1$
$\log_{10} 10$	$\log_{10} 100$	$\log_{10} 1000$

Card Set B

$\ln e$	$\ln e^2$	$\ln e^3$
$\log_{\frac{1}{2}} \frac{1}{4}$	$\log_{\frac{1}{2}} \frac{1}{8}$	$\log_{\frac{1}{2}} \frac{1}{32}$
$\log_2 4^2$	$\log_3 9^2$	$\log_4 4^4$
$\log_2 8 - \log_3 3$	$\log_2 4 - \log_3 \frac{1}{3}$	$\log_5 25 - \log_2 \frac{1}{8}$
$\log_2 \frac{1}{8} \times \log_4 \frac{1}{4}$	$\log_{100} 10 \times \log_2 256$	$\log_{\frac{1}{3}} 9 \times \log_{\frac{1}{2}} 8$