



# PropellerForth

## Features

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*This information is current as of the 2006-11-12 build.*

### The Basics

- A fully-functional interactive Forth — write, compile, test, and debug right on the Propeller.
- Program size limited only by available RAM.
- Optimized library routines for multiplication ( $32 \times 32 \rightarrow 64$ ) and division ( $32 / 32 \rightarrow 32$  bit quotient and remainder).
- Performs most tasks at 1/5 to 1/10 the speed of optimized assembly — 10x faster than SPIN.
- Small memory footprint (around 8KiB for the base system with all optional word sets included).

### Programming Conveniences

- Interactive, incremental compiler runs on the Propeller itself.
- All functions are available in an interactive interpreted mode, which is handy for testing algorithms or feeling out new peripherals.
- Provides modern structured programming amenities, with several handy loop constructs and structured exception handling via `catch` and `throw`.

### Multitasking

- Can run independent Forth (or native) tasks separately on each core.
- Cooperative multitasking allows multiple tasks to run on *each* core, limited only by available RAM.
- Uses techniques from realtime operating systems to achieve low-overhead, high-speed task switching in relatively little RAM. (In testing, each core can easily handle 100 independent tasks.)

### Propeller Enhancements

- Provides words for starting and stopping Cogs, accessing

semaphores, moving data in and out of Cog-local RAM, and accessing the complete set of registers.

## **ANS-Like**

- All words present in both PropellerForth and ANS Forth are implemented according to the ANS spec.
- Can be brought to full ANS compliance with a user library (not included for space reasons).

## **Tinkerers Welcome**

- Includes full sources for the standard library, and all aspects of the system can be modified or redefined at runtime.
- The kernel itself is open source, and the authors welcome enhancements or fixes from all users.

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