COMPLEX NEWTON ITERATES

WRITTEN BY: Donald Kiel, CalState, Los Angeles
(dkiel@neptune.calstatela.edu)

CATEGORY: Fractals

APPLICATION:
        This illustrates the application of Newton's method to the equation Z3 - 1 = 0
and illustrates the basins of attraction for the three cube roots of 1.
        It gives the option of showing the boundary or the basins of attraction.   In
either case, it also shows the iterates of each initial value.   Clicking the mouse at
any point on the screen defines an initial value which is also written in the
start.re and start.im fields.   A number of iterates(equal to the number in the
iterations field)   are then formed   and connected by lines .   It is interesting to see
how the iterates converge by comparing the paths of convergence.

USAGE:

THis application is used to demonstrate the fractal derived by this method in mathematics classes where fractals are studied.

DEVELOPMENT: NeXTSTEP 2.0