

World Functions in Alice 2.2

Table listing the functions available on the World object in Alice 2.2 (9/1/2008 edition).

Name	Arguments	Returns	Comments
! (not)	b- Boolean	B - Boolean	Negates passed value.
&& (and “both”)	a, b - Booleans	B - Boolean	True only if A and B are true.
(or, “either”)	a, b - Boolean	B - Boolean	False only if A and B are false.
==	n, m - numbers	B - Boolean	Equality: True if n and m are equal. Be careful of rounding errors.
!=	n, m - numbers	B - Boolean	Inequality: True if n and m are not equal.
>	n, m - numbers	B - Boolean	Greater than. True if n is greater than m.
>=	n, m - numbers	B - Boolean	Greater than or Equal: True n is greater than or equal to m.
<	n, m - numbers	B - Boolean	Less Than: True if n is less than m.
<=	n, m - numbers	B - Boolean	Less Than or Equal To: True if n is less than or equal to m.
Random. nextBoolean()	n - number (likelihood)	B - Boolean	Returns a random Boolean (true/false), where the likelihood of it being a true value is n. n should lie between 0 and 1.
Random. nextDouble()	min, max - number; [Optional: intOnly - Boolean]	N - Number	Returns a number between min and max inclusive. By default is a real number. If intOnly is set true then only integers. There are also default values of 0 and 1 for min and max.
+	s,t - Strings	S - String	String concatenation - runs the two strings together and returns the result.
toString()	O - various (e.g., number) - Not an argument but the invoking item	S - String	This converts the item O into its string representation (usually prior to printing). It is invoked as O.toString() so really should be an object function ... but it works for non-objects so it accessed through world's functions.
NumberDialog	s- String	N - Number	Pops up a dialog box for the user to enter a number; which is then returned to the program. s is printed to prompt the user.
BooleanDialog	s - String	B - Boolean	Pops up a dialog box for the user to enter a boolean; which is then returned to the program. s is printed to prompt the user.
StringDialog	s - String	t - String	Pops up a dialog box for the user to enter a string; which is then returned to the program. s is printed to prompt the user.
Mouse.getDistanceFromLeftEdge()	N/A	N - Number	Gets distance of mouse pointer from left edge of the run/play display. Returns a value in pixels. Appears to measure even when mouse outside the bounds of the window.
Mouse.getDistanceFromTopEdge()	N/A	N - Number	Gets distance of mouse pointer from top edge of the run/play display. Returns a value in pixels. Appears to measure even when mouse outside the bounds of the window.
getTimeElapsedSinceWorldStart()	N/A	N - Number	Returns the number of seconds since the world started (user pressed Play).
getYear()	N/A	N - Number	Returns the year.
getMonthOfYear()	N/A	N - Number	Returns the month number (1-12).
getDayOfYear()	N/A	N - Number	Returns the day of the year (1-366).
getDayOfMonth()	N/A	N - Number	Returns the day of the month (1-31).

getDayOfWeek()	N/A	N - Number	Returns the day of the week (1-7). Day 1 is Sunday.
getDayOfWeekInMonth()	N/A	N – Number	
isAm()	N/A	B – Boolean	Returns true if the real-world time is between 0000 and 1200
isPM()	N/A	B – Boolean	Returns true if the real-world time is between 1200 and 2400
getHourOfAMOrPM()	N/A	N – Number	Returns the real-world hour in as 12-hour format (0-12)
getHourOfDay()	N/A	N – Number	Returns the real-world hour in 24 hour format.
getMinuteOfHour()	N/A	N – Number	Returns the real-world minute (0-59)
getSecondOfMinute()	N/A	N – Number	Returns the real-world second (0-59).
Math.min()	a, b - Numbers	N – Number	The minimum of its two arguments.
Math.max()	a, b - Numbers	N – Number	The maximum of its two arguments.
Math.abs()	a – Number	N – Number	The absolute value of the passed argument.
Math.sqrt()	a – Number	N – Number	The square root of the passed argument.
Math.floor()	a – Number	N – Number	Truncates the number, returning only the whole number portion.
Math.ceil()	a – Number	N – Number	Ceiling of the number – if decimal portion, takes up to next whole number.
Math.sin()	a – Number	N – Number	Sine of the angle passed in. Angle in radians.
Math.cos()	a – Number	N – Number	Cosine of the angle passed in. Angle in radians.
Math.tan()	a – Number	N – Number	Tangent of the angle passed in. Angle in radians.
Math.acos()	a – Number	N – Number	Arc Cosine of the value passed in. Returned angle in radians.
Math.asin()	a – Number	N – Number	Arc Sine of the value passed in. Returned angle in radians.
Math.atan()	a – Number	N – Number	Arc Tangent of the value passed in. Returned angle in radians.
Math.atan2()	a, b – Numbers	N – Number	Arc Tangent of the values passed in. Two separate values represent numerator and denominator (useful for 0 on denominator). Returned angle in radians.
Math.pow()	a, b – Numbers	N – Number	Raises a to the power of b.
Math.natural log of()	a – Number	N – Number	Takes the natural log (base e) of a.
Math.exp()	a – Number	N – Number	Raises e to the power of a.
Math.IEEEremainder()	a, b – Number	N – Number	The remainder when a is divided by b. a and b can be whole or real numbers.
Math.round()	a - Number	N – Number	Round a off (up if 0.5 or larger decimal portion) to a whole number.
Math.toDegrees()	a - Number	N – Number	Changes the value of a in radians to its equivalent degrees.
Math.toRadians()	a – Number	N – Number	Coverts the value of a in degrees to its equivalent in radians.
superSquareRoot()	a, b – Numbers	N – Number	Takes the b'th root of a (e.g., if a was 27, b was 2, answer would be 3).
getVector()	a, b, c – Numbers	P – Position (Vector)	Constructs a vector/position where a is amount right, b is amount up, and c is amount forward.