

## Common GameMaker Script Functions, Properties, and Names

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|---|---|
| <b>Common script functions:</b>             |   |
| abs( f )                                    | Absolute value of a number                          |
| arccos( c )                                 | Arc whose cosine is c                               |
| arcsin( s )                                 | Arc whose sine is s                                 |
| arctan( y_over_x )                          | Arc whose tangent is y_over_x                       |
| arctan2( y, x )                             | Arc whose tangent is y/x, taking signs into account |
| ceil( f )                                   | Next highest whole number                           |
| cos( f )                                    | Cosine of r   |
| degtorad( d )                               | Turn d into radians                                 |
| exp( f )                                    | e (2.71828...) raised to the f power                |
| floor( f )                                  | Next lowest whole number                            |
| frac( f )                                   | Fractional (non-whole number) part of f             |
| ln( f )                                     | Log to the base e (2.71828...) of f                 |
| log2( f )                                   | Log to the base 2 of f                              |
| log10( f )                                  | Log to the base 10 of f                             |
| radtodeg( r )                               | Turn r into degrees                                 |
| random( f )                                 | A random number between 0. and f                    |
| round( f )                                  | Round f to the nearest whole number                 |
| sign( f )                                   | The sign of f (-1. or +1.)                          |
| sin( r )                                    | The sin of r  |
| sqr( f )                                    | The square of f                                     |
| sqrt( f )                                   | The square root of f                                |
| tan( r )                                    | The tangent of r                                    |
|   |   |
| <b>Colors of text in the script editor:</b> |   |
| Comments                                    | green   |
| Objects                                     | purple  |
| Properties                                  | blue  |
|   |   |
| <b>Object properties:</b>                   |   |
| x   | X coordinate  |
| y   | Y coordinate  |
| hspeed                                      | X speed in pixels/step                              |
| vspeed                                      | Y speed in pixels/step                              |
| direction                                   | Current direction in degrees                        |
| speed                                       | Current speed in pixels/step                        |
| visible                                     | Visible=1, invisible=0                              |
|   |   |
| <b>Special names in the script:</b>         |   |
| self  | The object this script belongs to                   |
| other                                       | The other object this command uses                  |
| image_index                                 | Which image is being shown in a multi-image sprite  |
| image_speed                                 | How to increment the image_index in a multi-image   |
| score                                       | Current score                                       |
| lives                                       | Current number of lives                             |
| health                                      | Current health of the player (0-100)                |
| mouse_x                                     | X position of the mouse                             |
| mouse_y                                     | Y position of the mouse                             |