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TJ Leone  
237 Custer Ave  
Evanston, IL 60202  
Email [tjeone@chiaravalle.org](mailto:tjeone@chiaravalle.org)

Phone 847 951 0127  
Fax 847 733 8812

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# **Kinds of Information**

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**TJ Leone**  
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## Introduction

Logo has instructions that fit into different categories. The two main categories are *commands* and *operations*. In MicroWorlds Logo, operations are referred to as *reporters*.

This document puts Logo instructions into different categories in order to help readers quickly recognize the role of the instruction in Logo projects.



## What is information?

*Information is a word or a list*

In Microworlds, information is anything that is output from a reporter or input to a reporter or a command. All inputs to commands and reporters are WORDs or LISTs. All reporters output either a WORD or a LIST.

Examples of WORDs are: "false 7 "x "hello "t1

Examples of LISTs are: [-40 72] [You win!] [fd 30 rt 90]

*Information is provided by constants, reporters, or variables*

Words and lists can be delivered to commands in three ways:

1. Provided directly as CONSTANTS
2. Generated by REPORTERS
3. Extracted from VARIABLES

To deliver a word or list as a CONSTANT, just type in the word or list directly.

```
"goodbye [50 50] [lt 90] "true [Nice job!] 18 "t3 "s
```

To generate a word or list with REPORTER, type the REPORTER plus inputs needed by the REPORTER (if any).

```
touching? "t1 "t2  
colorunder = 15  
equal? :answer 15  
word? "hello  
pos  
heading
```

There are two important things to notice here:

1. The equal sign (=) is a special kind of reporter because it appears between its inputs instead of in front of them. It reports “true if its inputs are equal and “false if its inputs are not equal. Compare this reporter with the **equal?** reporter. There are other special reporters like the equal sign, including +, -, \*, /, < and >.
2. Inputs to a reporter can be constants, variables, or other reporters.

VARIABLEs can only be used when you define your own procedures in the project procedures tab or the backpack of a turtle. You can read more about local, global and state variables in Microworld EX Help under Programming Fundamentals.



## Examples of words and lists

Here are some more examples of words and lists that are used as inputs to commands and reporters:

*word*

Any word.

*list*

Any list.

*word-or-list*

*word-or-list1*

*word-or-list2*

Some commands and reporters can take any word or list as input. Examples are the command **show** (which takes a single word or list) and the reporter **equal?** (which takes a word or list followed by another word or list).

*number*

*number1 number2*

These keywords stand for numbers like 1, 2, etc. Numbers are words. They are a special case of words because they don't take a quote (") in front when you write them as constants.

*true-or-false*

*true-or-false1*

*true-or-false2*

A *true-or-false* is a word that can have one of two values, either "true or "false

*char*

A *char* is a word that has exactly one character. So, for example, "x is a char, but "xy is not a char.

*who*

*turtle-name*

A word that names a turtle. So, for example, if you have a turtle named t1, then "t1 would work. Notice that there is also a reporter named **who** that reports the current turtle.



## Examples of words and lists (continued)

*instruction-list*

*list-to-run*

A list of one or more instructions. For example, here is an instruction list:

[fd 50 rt 90 fd 50]

*path*

A word that names a directory, like “C:\MicroWorlds.

*[x y]*

A list of two coordinates.



## What now?

For more information, check out the Programming sections in Microworlds EX Help and the MicroWorlds web site (<http://microworlds.com>).



## The Author

TJ Leone is a teacher at Chiaravalle Montessori School in Evanston, Illinois. He has a BA in Math and an MS in Computer Science, both from the City College of New York, and a M.Ed. from Loyola College in Maryland. He spent two years in graduate studies in education and computer science at Northwestern University, and six years developing educational software there. He is certified by the Association Montessori Internationale (AMI) to teach children aged 6 to 12 and by Sun as a java programmer.