Sequence Lab

***Name:***

**Peanut Butter and Jelly Sandwich Algorithm**

The algorithm for making a peanut butter and jelly sandwich has gotten jumbled up. The steps are out of order; you are to number the scrambled instructions in the correct order. Place the numbers in the left column.

Each of you will interpret the order to do this task in different ways, just like different programmers will interpret ways to solve a programming problem in different ways. That is fine, there is no specific order these must be placed in, just a general logical order.

|  |  |
| --- | --- |
| 9 | using the knife spread a layer of peanut butter on one slice of the bread |
| 6 | unscrew lid off jar of jelly |
| 12 | place the second slice of bread on top of the first slice that has the pb and jelly spread on it |
| 13 | close loaf of bread |
| 5 | get a knife |
| 10 | wipe the excess peanut butter off knife onto unused slice of bread |
| 1 | get jar of jelly from the refrigerator |
| 4 | open loaf of bread |
| 17 | eat the peanut butter and jelly sandwich |
| 8 | place two slices from the package onto the plate |
| 9 | unscrew lid off peanut butter |
| 3 | get a plate |
| 16 | put the peanut butter, jelly and bread up |
| 11 | using the knife spread a layer of jelly over the layer of peanut butter |
| 7 | get jar of peanut butter from cabinet |
| 14 | close jar of peanut butter |
| 2 | get loaf of bread from cabinet |
| 15 | close jar of jelly |

Here is a sample of one correct order. Take note of how it differs from your order.

|  |  |
| --- | --- |
| 1 | get a plate |
| 2 | get loaf of bread from cabinet |
| 3 | get jar of peanut butter from cabinet |
| 4 | get jar of jelly from the refrigerator |
| 5 | get a knife |
| 6 | open loaf of bread |
| 7 | place two slices from the package onto the plate |
| 8 | unscrew lid off peanut butter |
| 9 | unscrew lid off jar of jelly |
| 10 | using the knife spread a layer of peanut butter on one slice of the bread |
| 11 | wipe the excess peanut butter off knife onto unused slice of bread |
| 12 | using the knife spread a layer of jelly over the layer of peanut butter |
| 13 | place the second slice of bread on top of the first slice that has the pb and jelly spread on it |
| 14 | close loaf of bread |
| 15 | close jar of peanut butter |
| 16 | close jar of jelly |
| 17 | put the peanut butter, jelly and bread up |
| 18 | eat the peanut butter and jelly sandwich |

**Sequence Questions**

* Can the steps for making a PBJ sandwich be done in more than one order and still be correct? Yes
* Can the steps for making a PBJ sandwich be done in more than one order and be incorrect? Yes

* Using the following steps, which step is incorrect?

|  |  |
| --- | --- |
| 1 | get a plate |
| 2 | get a knife |
| 3 | get loaf of bread from cabinet |
| 4 | get jar of peanut butter from cabinet |
| 5 | get jar of jelly from the refrigerator |

* None of the steps are incorrect
* Using the following steps, which step is incorrect?

|  |  |
| --- | --- |
| 1 | get a plate |
| 2 | get loaf of bread from cabinet |
| 3 | get jar of peanut butter from cabinet |
| 4 | get jar of jelly from the refrigerator |
| 5 | get a knife |
| 6 | open loaf of bread |
| 7 | unscrew lid off peanut butter |
| 8 | unscrew lid off jar of jelly |
| 9 | place two slices from the package onto the plate |
| 10 | place the second slice of bread on top of the first slice that has the pb and jelly spread on it |

* Step 10
* The algorithm for calculating the average of two numbers has gotten jumbled up. The steps are out of order. List the letters in the order that will make the algorithm correct.

|  |  |
| --- | --- |
| A | Display the average |
| B | Calculate the average by dividing the sum by 2 |
| C | Get the value of the second number |
| D | Calculate the sum by adding the numbers together |
| E | Get the value of the first number |

* E C D B A