Javablocks provides useful programming Models 
WITHOUT 
Any explanation.

This is okay for BEGINNERS

But will PREVENT you from advancing toward EXPERT status.

Because you will NOT KNOW how to ADAPT the model to a SIMILAR problem.
Below is the main portion of the program created by the Simple Interaction Tutorial:

```java
out.print("Enter side: ");
double side = cin.nextDouble();
double area = side*side;
out.println("area = " + area);
```

The following pages will take each of these four commands and show exactly what they do.
Explaining and Demonstrating
The commands of this simple program
Will be done by a

A PAPER CHECK is a way to pretend
That you are the computer and are
Imitating the actions of the computer
As it follows the steps in a particular
Program
To do a paper check you need:

1. A blank sheet of paper
2. A pencil (a pen is not so good)
3. Room to layout the paper as shown below:

**Program**

```
...
```

**Console**

**Memory**

Names of variables: joe, mary, xyz

Values of variables will go in boxes.
out.print("Enter side: ");

ACTION

Computer writes in console - User input will continue on same line.

VALUE

"Enter side: ";

Java punctuation

What will be written in the console - omitting the quote marks
```java
out.print("Enter side: ");
double side = cin.nextDouble();
double area = side*side;
out.println("area = " + area);
```

**Memory**

*No variables yet*

**Console**

*Enter side:*

*This was written by the computer*
Computer waits for and reads one real number typed by user into console - that number is the VALUE.

DONE LAST
Put VALUE into The variable just Created - it was named "side".
Enter side: 4.5

User just typed this - and pressed the ENTER key.

No variables yet
out.print("Enter side: ");
double side = cin.nextDouble();
double area = side*side;
out.println("area = " + area);

At first the command made this variable

Then the command copied VALUE from the console into the variable.
Make a variable in memory - it will contain only REAL numbers.

Name that variable "area"

Put calculated VALUE into The variable just created - it was named "area".

Computer calculates the VALUE of the formula:

\[ \text{side} \times \text{side} \]

After looking in memory to see what value is stored in the box for the variable named "side".

double area = side*side;
Enter side: 4.5

THEN Computer sees that the variable named "side" has the value 4.5 in it. Computer computes:
\[ 4.5 \times 4.5 \]
Getting the VALUE:
20.25
And putting that into the variable named "area"
out.println("area = "+area);

Computer writes in console - Then ends the current console line.

"area = " : What will be written in the console - omitting the quote marks

In this context a plus sign (+) means: and then

area : Since there are NO QUOTES around the word:

it refers to the value of a variable in the memory box named "area".
```java
out.print("Enter side: ");
double side = cin.nextDouble();
double area = side*side;
out.println("area = " + area);
```

**Output of the quoted value:** "area = "

**Output of the memory value for the variable named "area".**

**Enter side: 4.5**

**area = 20.25**