

How to Make a Stick Figure Person

Grade Levels: 2-4

Time Suggested: 40 minutes for programming, 10 minutes to present students' projects

Materials: 1 computer per 1-2 students, groups possible, not recommended

National Educational Technology Standards for Students:

Students use technology resources for solving problems and making informed decisions.

Objective:

To show younger students how to create a simple art project with Microworlds Pro.

Procedure:

1. Review With Students Basic Commands:

- Make turtle turn left and right (rt, lt) With right and left you must add the number of degrees (rt 90)
- Make turtle move forward a number of steps (fd 100)
- Bringing pen up to stop drawing (pu)
- Bringing down pen to start drawing (pd)
- To give a title, in the programming area, type to and the title. Titles can be anything from circle to tree.
- Repeat Commands (repeat #) cause a turtle to repeat a certain command a number of times. Note: you must put the action in square brackets.

2. Once you have gone over these basic commands, students should open up Microworlds Pro and begin the project. It is fine for students to work in groups. Groups should be no larger than three people. Everybody should be able to make contributions to creating the stick figure. If possible, students can work independently. They learn more and can have more control over what they design.

These steps are for creating the outline of the stick figure.

1. **Draw Head** Go to programming and after typing the title (to stick), type repeat 360 [fd 1 rt 1], Note: after programming an operation, you must Enter and type "end" or all operations after that cannot be performed.
2. **Get turtle in position for drawing neck** The turtle should be on the left side of the circle. For preparing to draw the neck, after typing the title enter in pu rt 90 fd 50 rt 90 fd 50 pd.
3. **Draw part of neck and the arms** Go to programming and after entering the title, type pu fd 100 rt 45 pd fd 100 rt 180 pu fd 100 lt 40 pd fd then enter down a line and type end.

4. **Draw Legs** Go to programming and type in to (title4) skip a line then type `pd rt 70 fd 80 pu rt 180 pd fd 90 rt 25 fd 80`, skip a line, then type `end`.
5. **Putting it Together** Though by doing those steps in order, you could draw the stick figure, you can make your turtle draw the stick figure all at once. To do this go to the programming area and after entering the title, type the title of each of the four steps in successive order. (Title of Step 1 first, Title of Step 2 second, etc.) But to do that, your turtle must know every other thing this lesson said to do.
6. **Check Over with Class** Towards the end of the project, go over these directions with the class to make sure they are on the right track.
7. **Extras** These instructions will only give the outline of a stick figure. Please encourage students who finish early to add extra details, like eyes and mouth, to challenge their programming skills.

Extras:

- There is a button at the top panel that allows you to add buttons that, if clicked upon, will do a certain command that you have programmed your turtle to do. It is the one with a finger pressing a button. If you click on that and select the location of the button, a window will come and where there a blank, you should type the name of the command. Now, by clicking on the button, your turtle will perform the action.
- Give your commands logical titles. If you can't remember the name of a command, then you can't make your turtle do that.
- At the end of the project, go over the stick figure each student has created with the rest of the class.
- It is possible to fill objects by telling the turtle to bring their pen up by typing `in pu`, move the turtle inside a shape, and type `fill` in the programming section. Note: to fill in a certain color, type that color's number, see graphics.