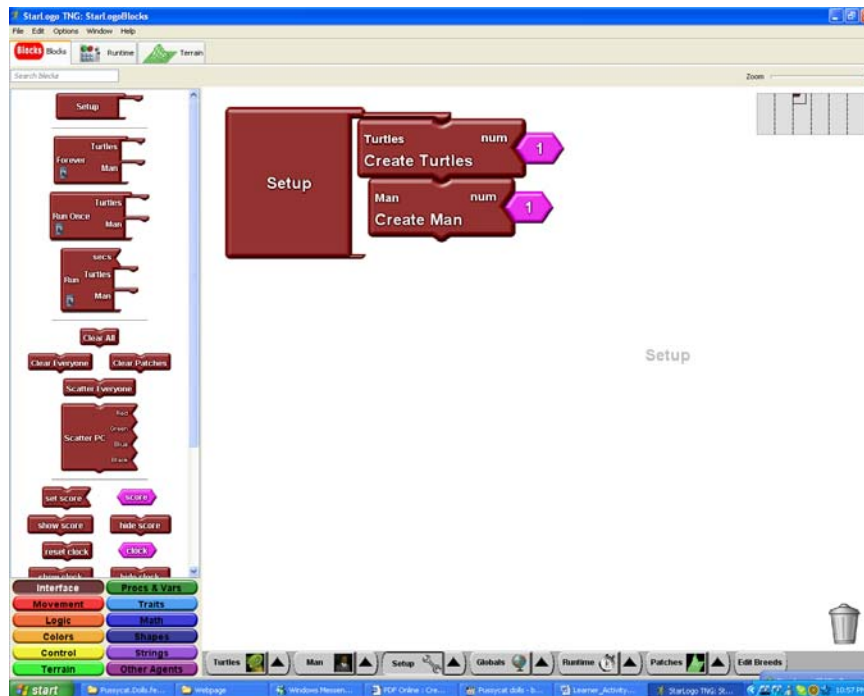# Learner Activity Sheet 3: Angle of Elevation

Description:

This activity comprises of a turtle and a man. In this program, a wall has been created on the StarLogo TNG terrain.

Your Task:

- By double clicking on the *setup* programming block, the program creates a man and a turtle in the center of the terrain. The *setup* programming block is shown below.

- Move the turtle to the top of the wall.
- Determine the minimum distance the man must be from the wall so that the turtle can see him.
- Calculate the angle of elevation of the man.
- Investigate if changing the height of the man on the ground would change any of the parameters you have found (minimum distance, angle of elevation). Report your findings.

Also investigate and report your findings to the following questions.

1. How does the minimum distance vary with a change in height of the man?
2. How does the angle of elevation change with a change in height of the man?
3. Does a change in height of the turtle affect the minimum distance or angle of elevation?
4. Test how a change in height of the wall affects the calculated parameters?

Steps to complete task:

1. Create a program that allows user to move the turtle and man in the following ways.

Turtle

Left Key – Turns the turtle to its left.

Right Key – Turns the turtle to its right.

Up Key – Moves the turtle forward.

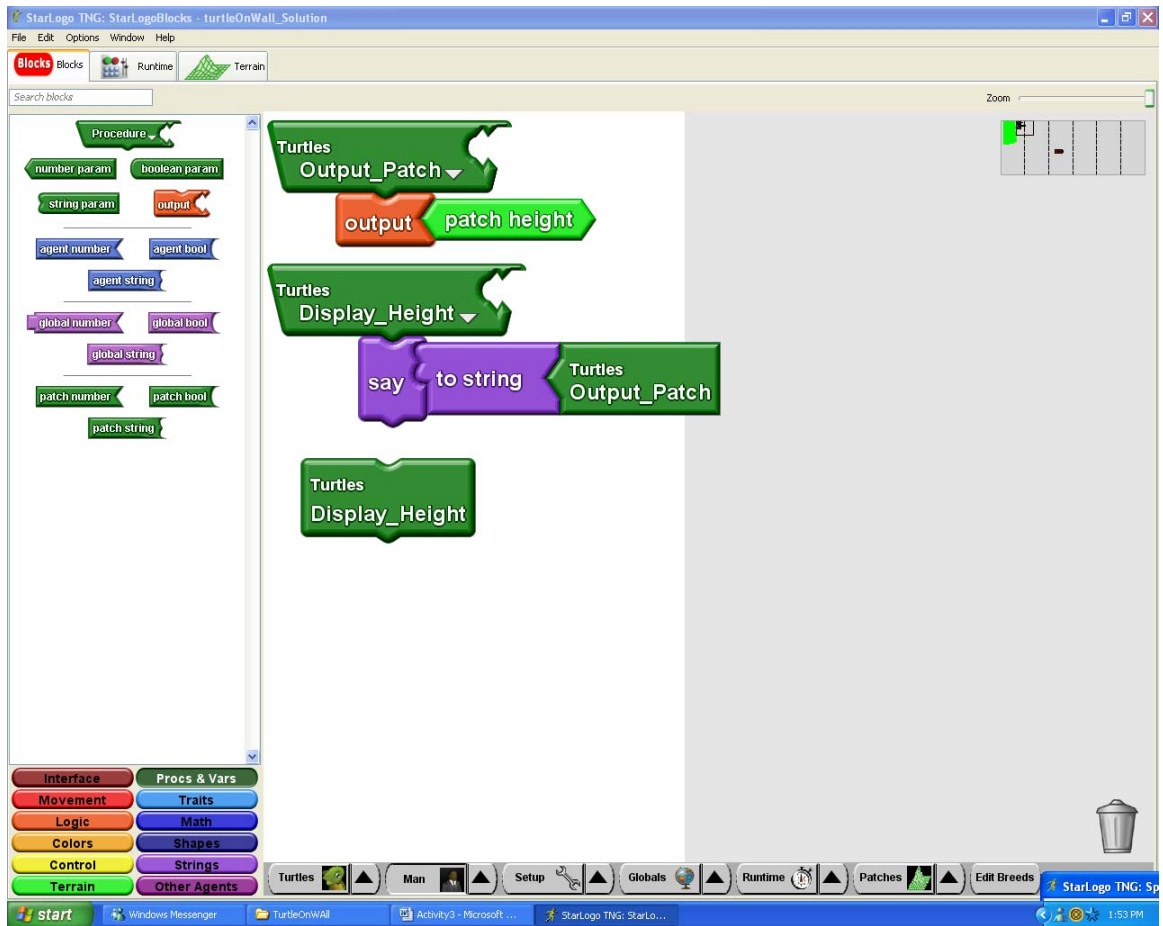Down Key – Moves the turtle backward.

Man

a Key – Turns the man to its left.

d Key – Turns the man to its right.

w Key – Moves the man forward.

s Key – Moves the man backwards.

2. Use these programming blocks to find the height of the wall.

3. Using your created program, investigate the relationship between the height of the turtle, man, wall, minimum distance from the wall and angle of elevation.
4. Report your results and conclusions.

Items for submission:
1. Created program.
2. Report of results and conclusions.