Blender Tutorial Step-by-Step Procedure

1. Use the mouse to zoom in.
2. Press X to delete the default cube.
3. Add mesh cylinder.
4. Press “S” to scale.
5. Hold down shift
6. Press “Z.”
7. Press “.2” and “Enter” (to scale the cylinder in the “X” and “Y” directions, but not in the “Z” direction).
8. The cylinder will be a “parent object,” so we must apply the scale.
9. Press “G” (to grab) and “Z” (for the “Z” direction), then “1” and “Enter.”
10. The cylinder will be rotated about its base, so we need to move the origin to the base.
11. Transform origin to 3d cursor.
12. In the properties panel, click the object properties.
13. Rename the cylinder bond. It represents the bond between the atoms.
14. Add mesh UV sphere.
15. Press “S” (to scale), then press “.5” and then “Enter.”
16. Press “G” to grab then “Z” for the “Z” direction and 2 and “Enter.”
17. Name the sphere “hydrogen” and set its parent to be the bond.
18. Click the material button.
19. Click the browse material button. If the default material button is there; use it. If not, click the “+” to add new material.
20. Rename the material “hydrogen.”
21. Click the diffuse color and set the red, green and blue values to “1” and set the intensity to “1.”
22. Click the “F” button so that the material is saved even if it is not attached to any object.
23. Select the bond.
24. Click add new material button.
25. Call the new material bond.
26. Click the diffuse color and set the red, green and blue values to 0.3.
27. Click the “F” button and select the sphere.
28. Hold down “Shift” and select the bond.
29. Hold down “Shift” and press “D” and “Enter” to duplicate.
30. Click the object properties and set the “X” rotation to 109.47 and “Enter.”
31. Duplicate again. Click shift “D” and “Enter” and set the “Z” rotation of the duplicate to 120.
32. Duplicate again; click shift “D” and “Enter” and set the “Z” rotation of the duplicates to 240.
33. Select add mesh UV sphere.
34. Press “S” to scale 0.8 and “Enter.”
35. Take the button and add new material button.
36. Call the new material “carbon.”
37. Click the diffuse color.
38. Drag the slider down to make it black.
39. Select all by type mesh and set the shading to smooth.
40. Select the carbon atom.
41. Click the “F” button for the carbon material.

42. You can add two more materials for nitrogen and oxygen atoms using typical cpk colors.
43. Click the "+" to add new material.
44. Call the new material "oxygen" and click the "F" button.
45. Set the diffuse color to red full on and increase the intensity to 1.
46. Click the "F" button to add the new material button and call it "nitrogen."
47. Click the diffuse color and set the red to 2 and the blue to 1 and click the "F" button.
48. Next, look at the properties of a tetrahedron. Add a regular tetrahedron.
49. Go to user preferences.
50. Click add-ons.
51. Add mesh and click regular solids. Close the dialog box.
52. Add mesh solids platonic tetrahedron.
53. Press "S" to scale, 2 and "Enter."
54. Change the view to the top view.
55. Press "R" to rotate 90 degrees and "Enter."
56. Dragging with the middle mouse button to rotate the view, we see the hydrogen atoms lie at the vertices of the tetrahedron.
57. Now go to the tetrahedron page on Wikipedia.
58. Scrolling down, we find the angle between the bonds is AOB.
59. Scrolling down to the formula, we see the angle, which is 109.47.
60. Save the file.