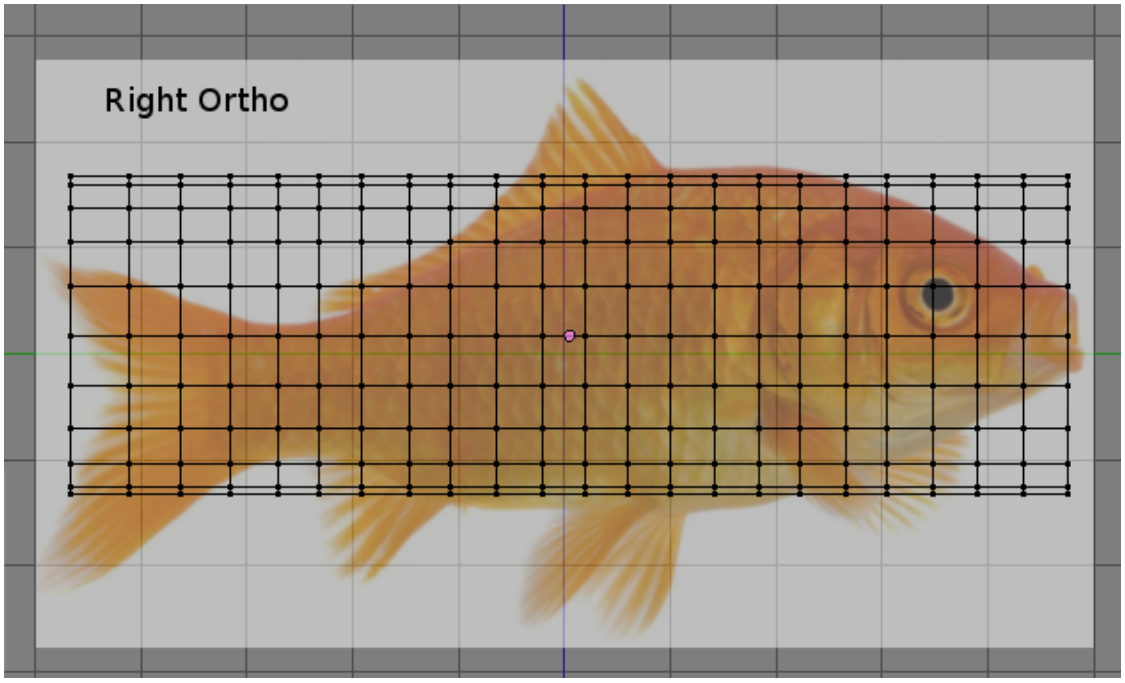
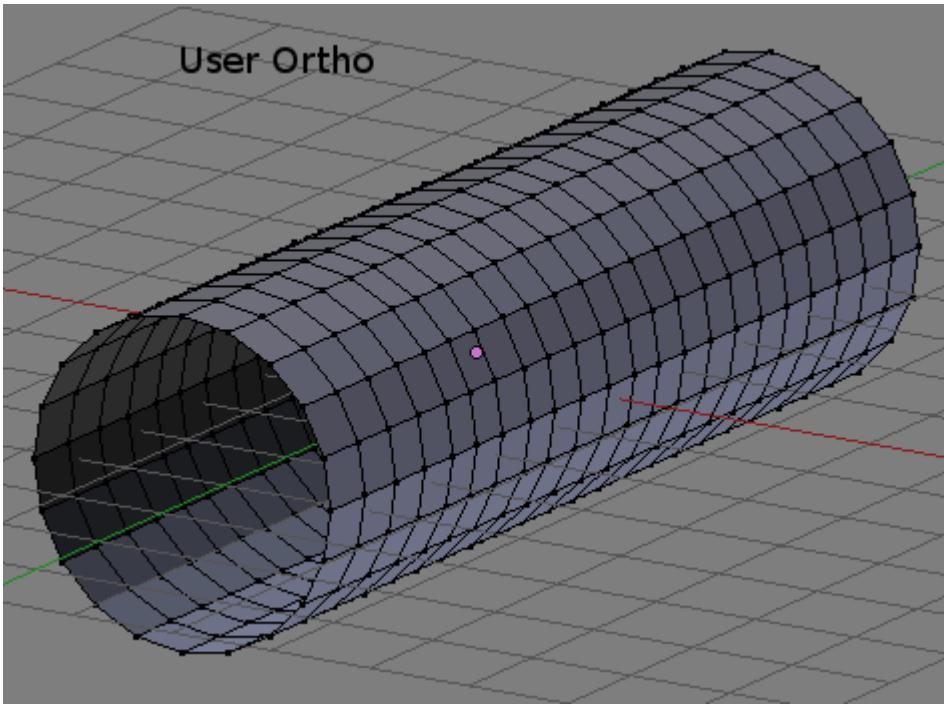
Goldfish Game

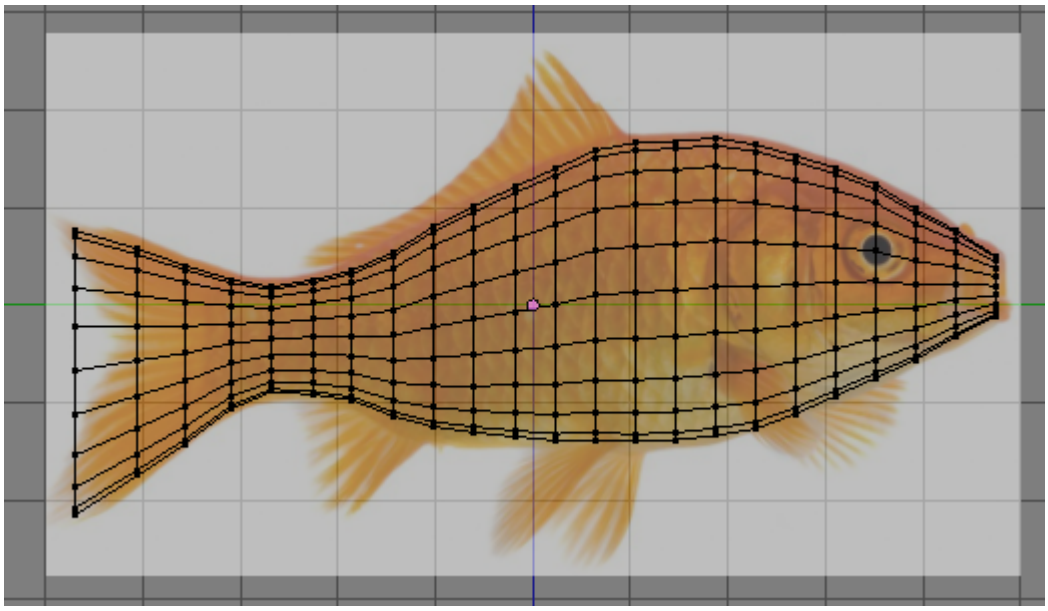
1. Find a good image (side view) of a fish.

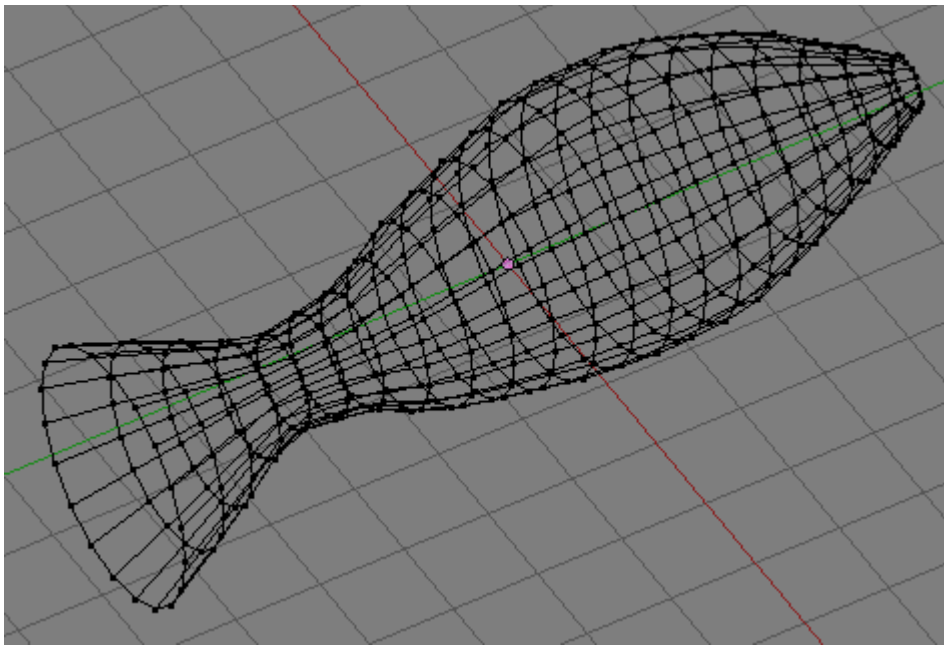
2. Start a new Blender session.
3. Delete the default cube.
4. Add the fish image as background image.
   Display it only when the view is Right Ortho.
5. Swith to Right Ortho view.
6. Snap the 3D-cursor at the origin.
7. Add a cylinder:
   20 to 24 vertices.
   capfill: nothing.
8. Rotate cylinder 90 degrees about x-axis: R X 90
9. Move and scale the cylinder so that:
   its diameter is about the height of the fish's body.
   its length is about the length of the fish.
10. Loop cut the cylinder: 20 to 25 loops. (CTRL-R)



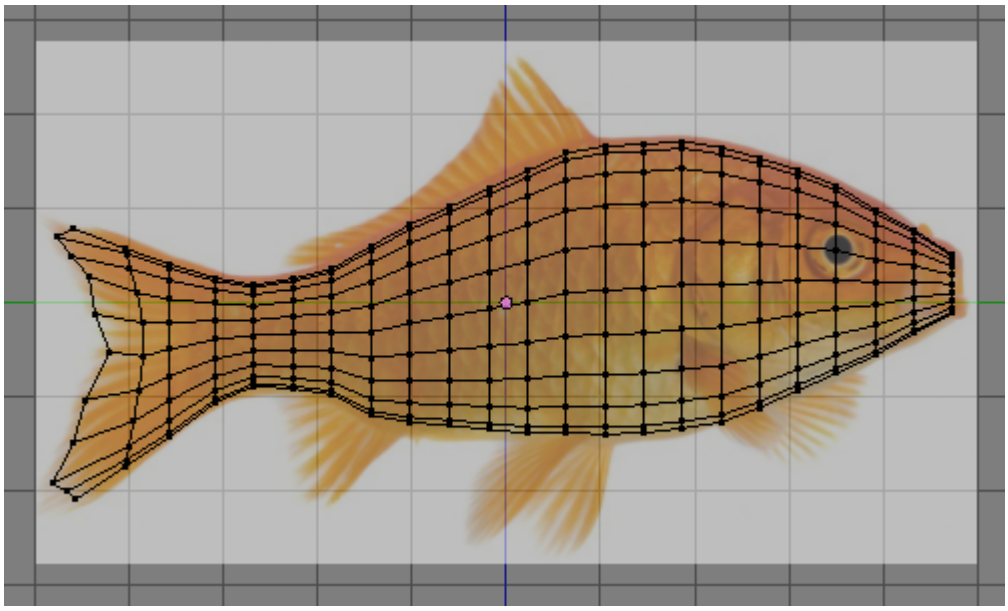


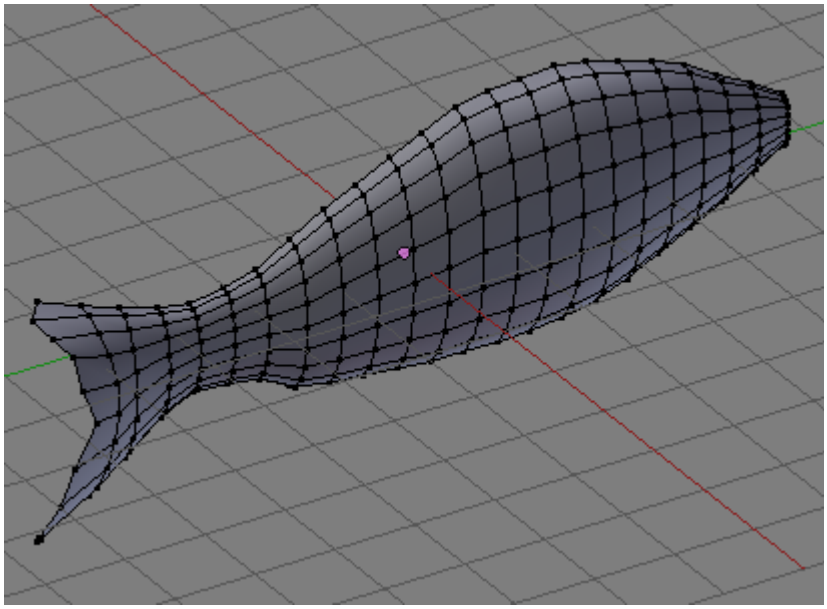
11. Select each loop of the cylinder. (Alt-RMB)
12. Scale and move it to fit the fish's body.
13. Feel free to move the loop forward or backward along the y-axis.
14. Adjust the mesh so the tail fits the inside of the tail in the background image.



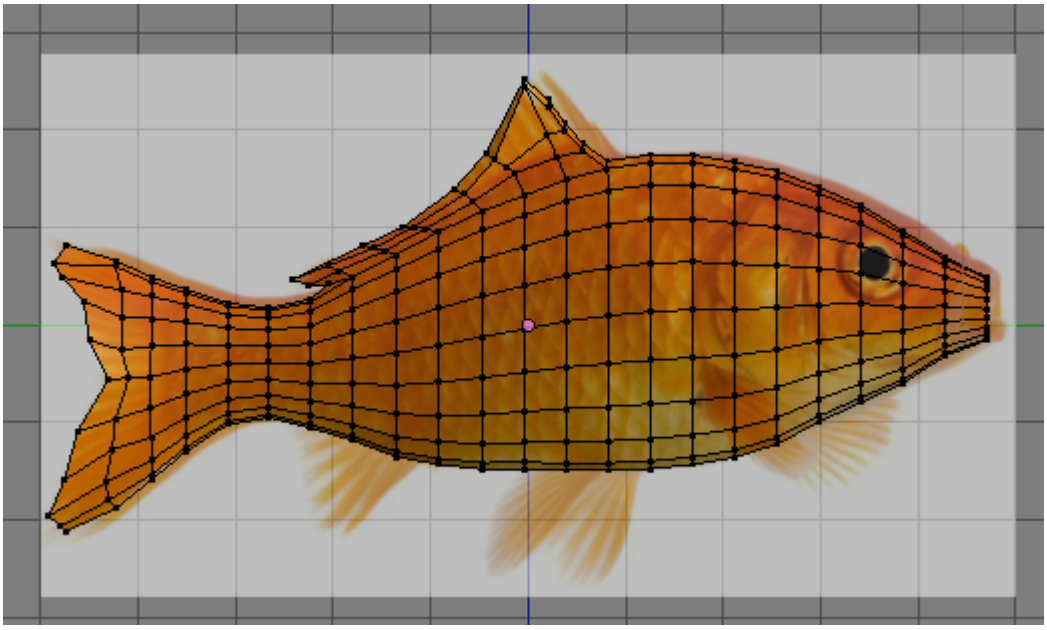


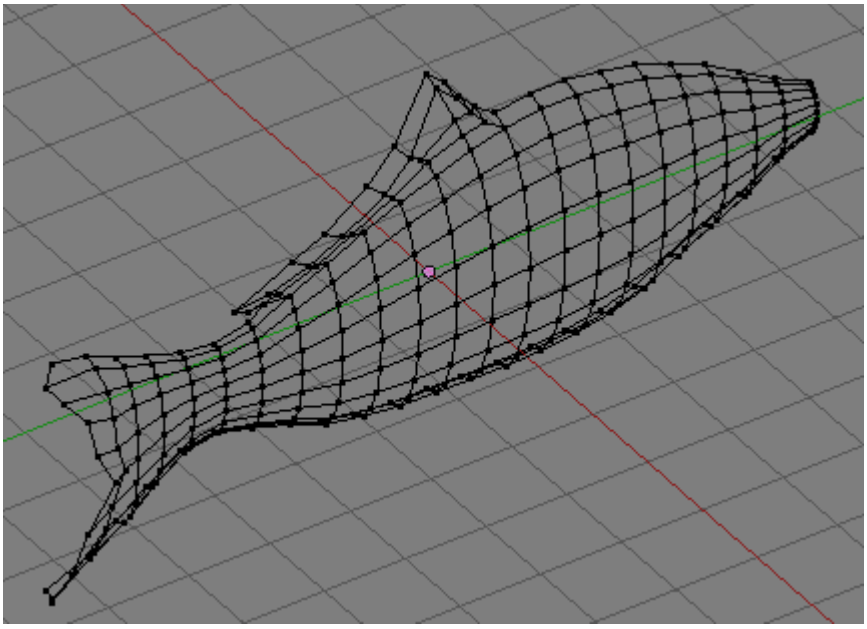
15. Switch to Front Ortho view.
16. Scale the fish to 40% of its x-dimension. S X 0.4
17. Apply the Rotation and Scale.
18. Go to edit mode.
19. Box select all vertices on the left hand side of x-axis.
20. Delete all the selected vertices.
21. Add a mirror modifier.
    Enable clipping.



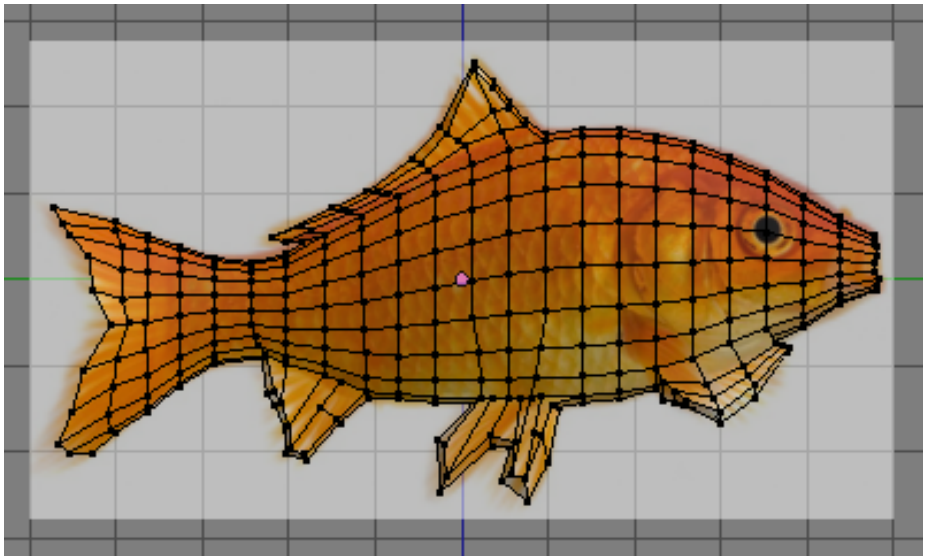


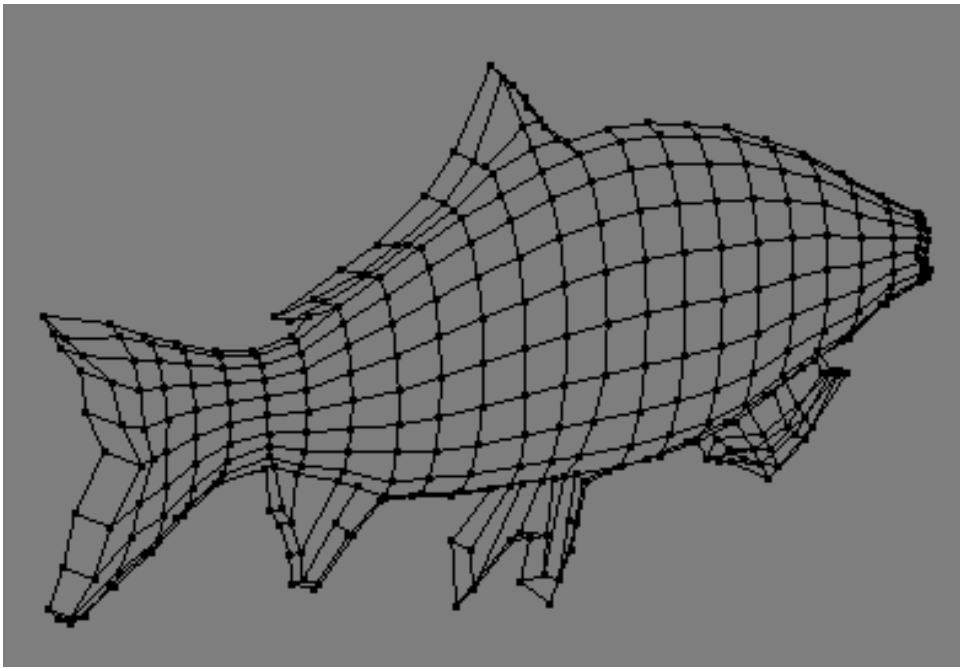
22. Extrude the faces along the top fin.
23. Loop cut and add new geometry if necessary.
24. Adjust the new faces so the outline fits just inside the top fin.

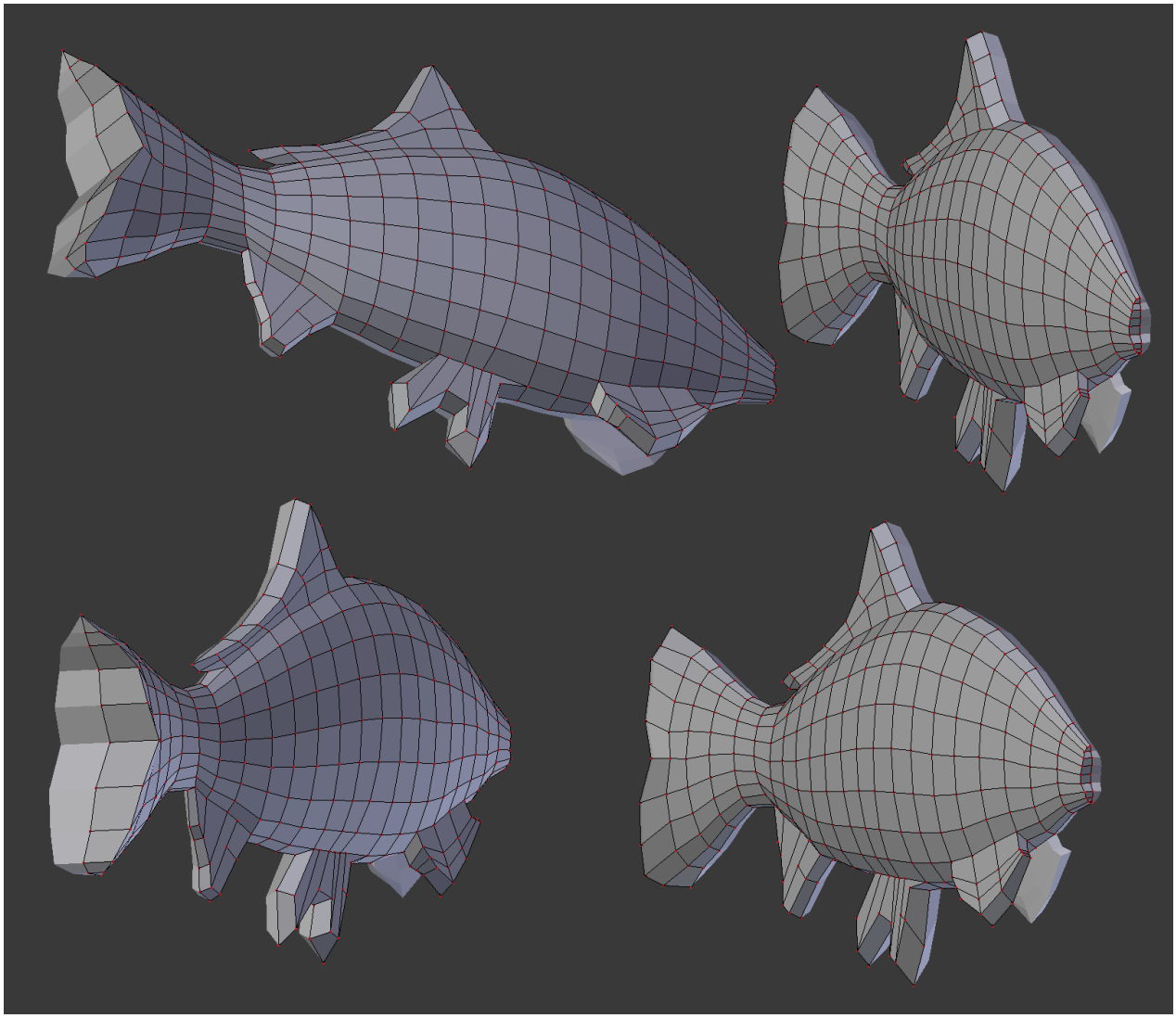




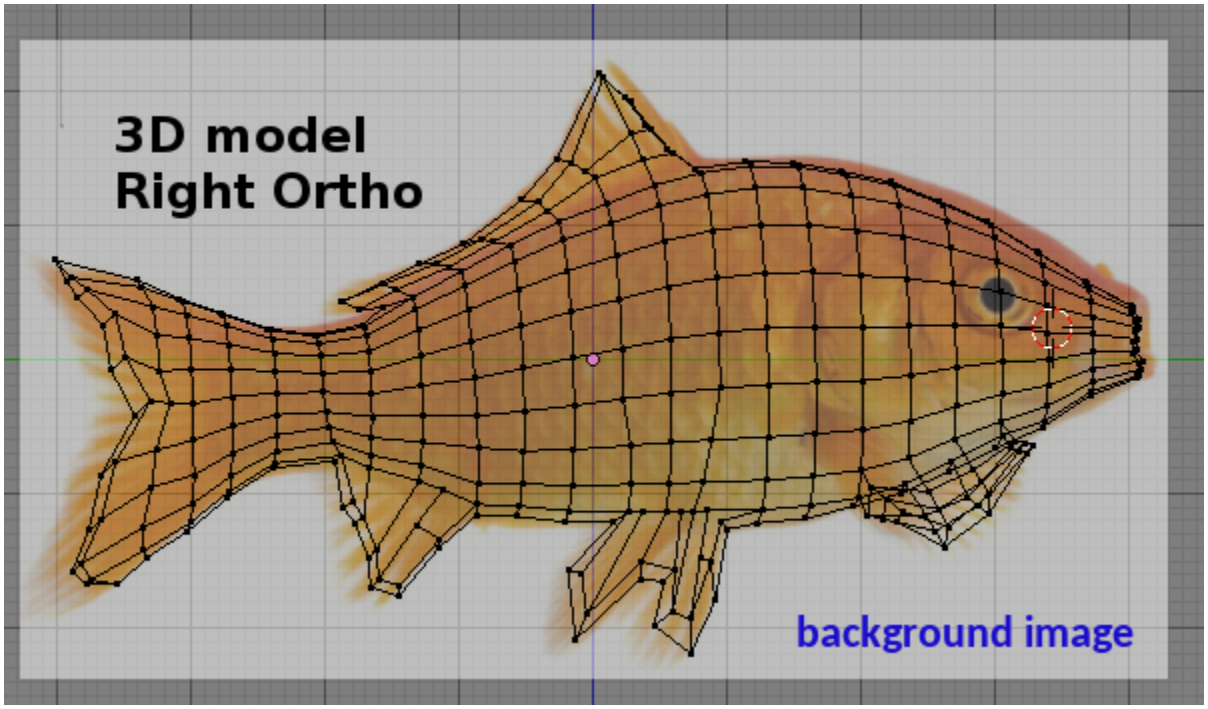
25. Complete the modeling of other fins.
26. Close the hole at both ends of the fish.

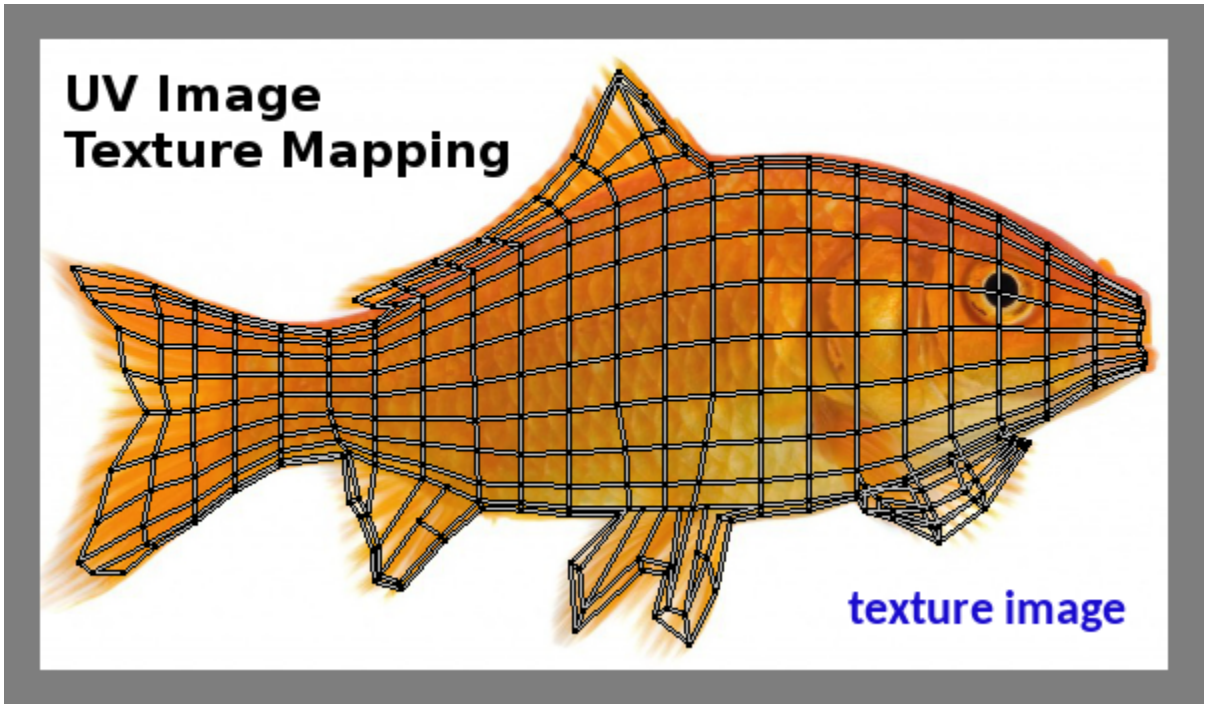




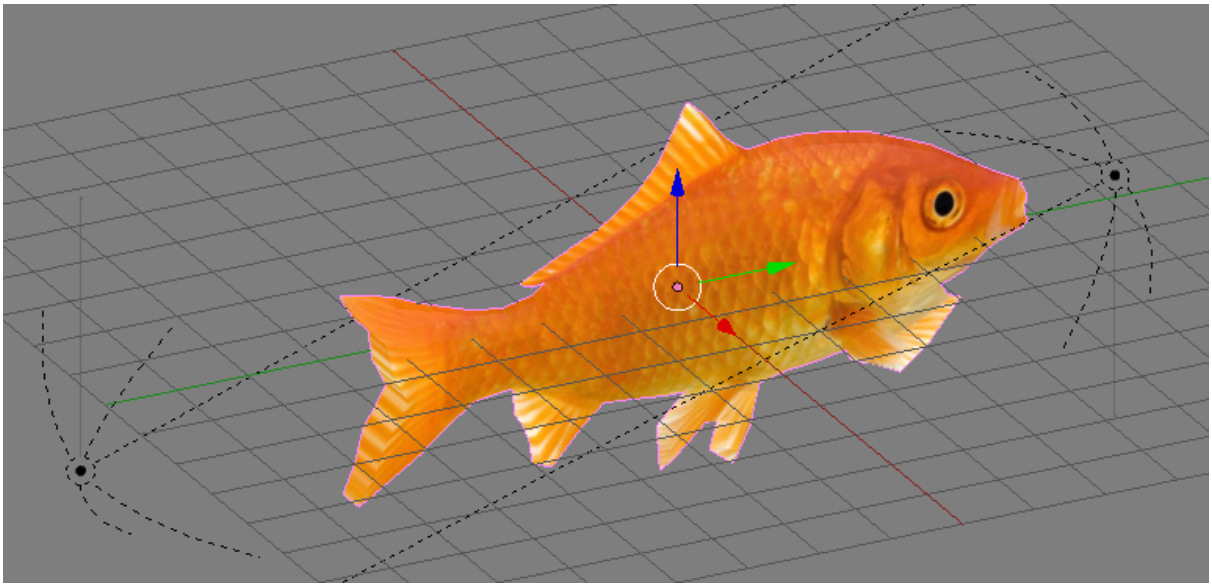


27. Select the fish's material (add a material if necessary).
28. Change its Specular to 0.025.
29. Add a texture of 'Image or Movie' type.
30. Select the 'goldfish' picture as image.
31. Switch to Edit mode.
32. Open up the UV/Image Editor view.
33. Select all vertices of the fish in Edit mode.
34. Mesh ----> UV Unwrap ----> Project from View.
35. Open up the UV/Image Editor view.
36. Scale and move the faces until the texture covers the fish model correctly.

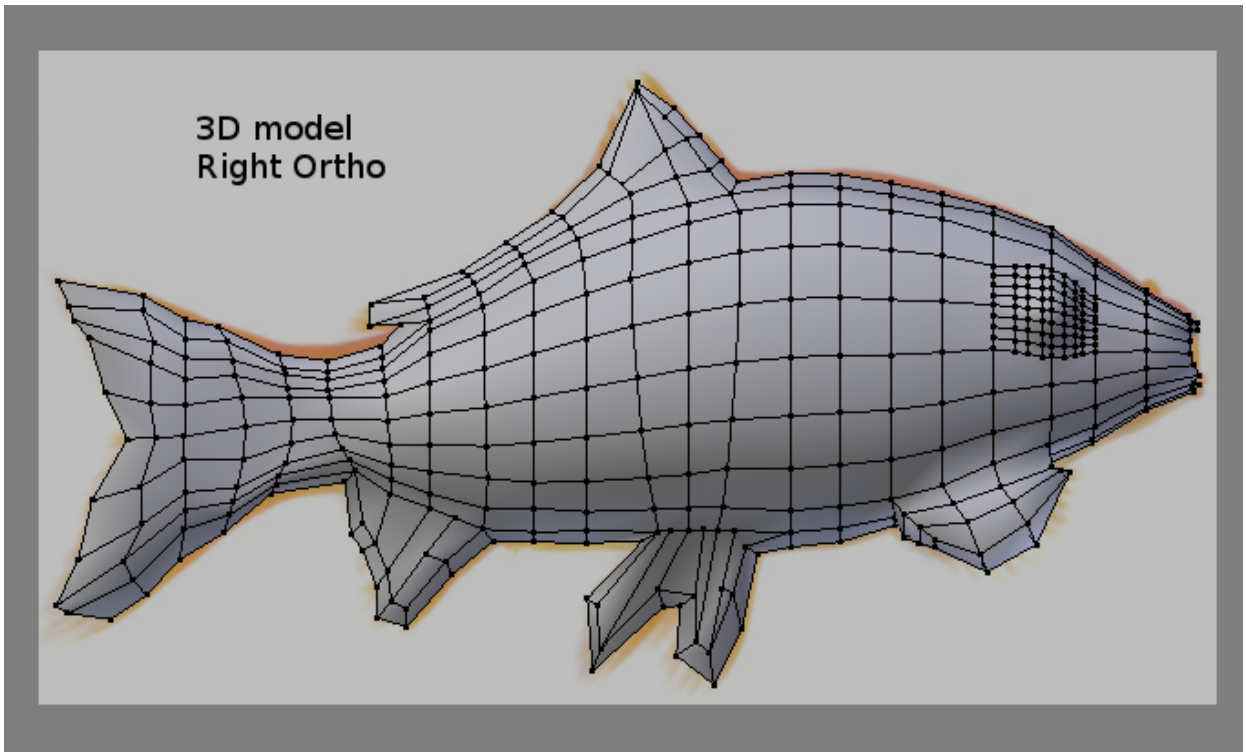


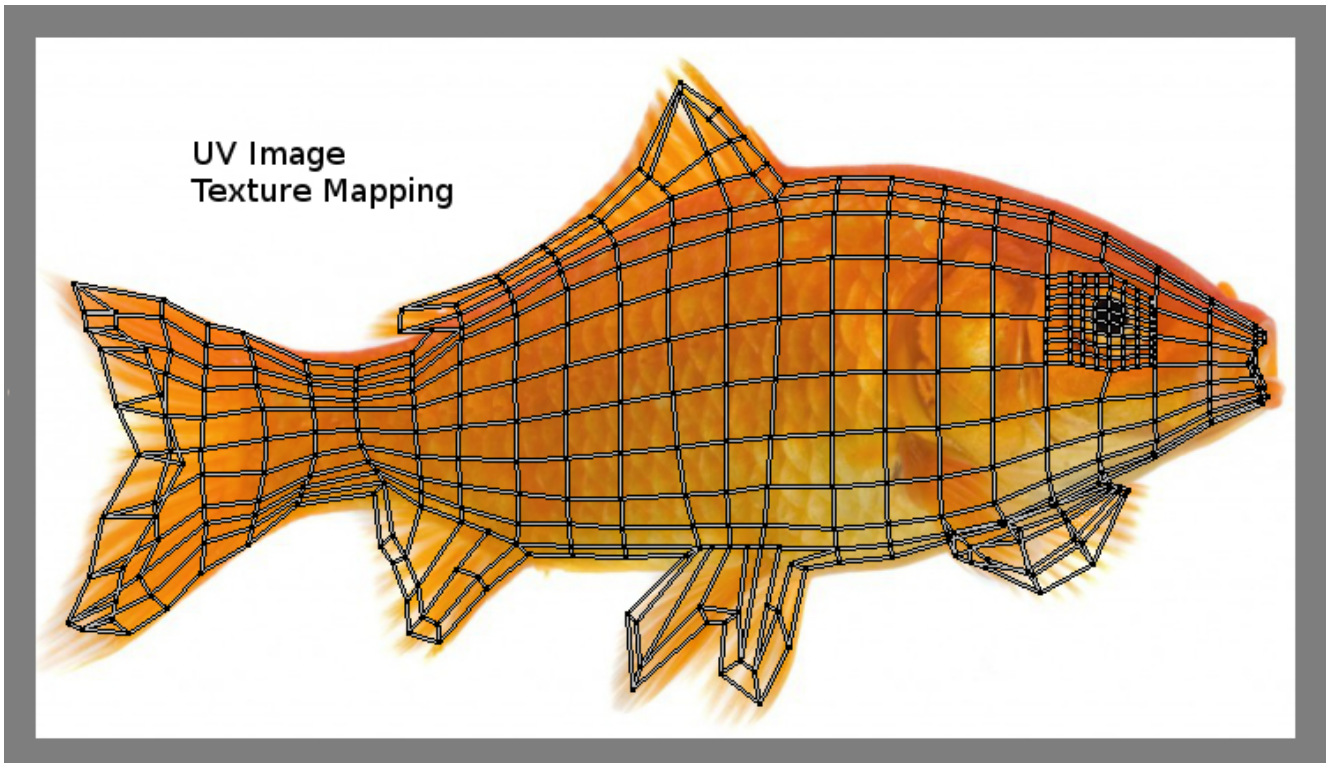


37. Delete the original default lights.
38. Add two Hemi lights (aiming approximately toward each other, with the fish in between)
39. Select GLSL as shading.



40. Add more geometry to the mesh near the fish's eyeballs.
41. Use proportional mode to pull the center of the eyeball a little bit outward.
42. Readjust the UV mapping so the eyeballs of the mesh and texture coincide.





43. Set 3D-cursor at the center of the fish.
44. Add armature (single bone).
45. This will be the root bone.
46. With the bone selected, switch to Edit mode.
47. Select the head or tail of the bone and extrude new bones.
48. Switch to Object mode when done.
49. Select Select Armature.
50. Switch to Pose Mode.
51. Open Timeline Editor.

52. Move timeline bar to frame 1.
53. Pose the bones.
54. Select all the bones.
55. Insert a keyframe (press I), choose LocRot.
56. Copy the pose.
57. Move timeline bar to frame 14.
58. Paste the x-flipped pose.
59. Select all the bones.
60. Insert a keyframe (press I), choose LocRot.
61. Move timeline bar to frame 28.
62. Paste the original pose.
63. Select all the bones.
64. Insert a keyframe (press I), choose LocRot.
65. Press Alt-A to play the animation.
66.
67. Switch to Game Engine.
68. Apply the mirror modifier.
69. Open Logic Editor
70. Select Armature
71. Add 'Always' sensor.
72. Add 'Action' actuator:
73. Mode: Loop Stop
74. Continue: check
75. Value: Goldfish Swimming
76. Start Frame: 1
77. End Frame: 28.