

Clock Project

Clock Body

1. Set up the content folder. Title the folder *Clock_Project*.
2. Create a template half the size of the clock body's side profile.
3. On layer two, build a box with a semi-circular top which fits within the template on layer 1.
 - Combine a box and ball by using the *Make Polygon* tool.
4. Use the *Lathe* tool to construct the 3-dimensional clock body.
5. With the *Smooth Shift* tool and the *Stretch* tool or the *Bevel* tool, move the front face of the clock body inward to construct the clock face.
6. Save as *Clock Body*.

Clock Feet

1. Cut and paste the clock body onto layer 1. Make it a background layer.
2. On layer 2, make a small ball to the dimensions of the feet on the specification sheet.
3. Copy and paste the other balls in place, or, use the *Mirror* tool.
4. Save.

Clock Posts

1. Cut and paste clock body with feet onto layer 1. Make it the background layer.
2. On layer 2, use the *Disc* tool to make the hammer post.
3. Copy, paste and rotate the hammer post to make the bell posts.
4. Copy, paste and rotate hammer post to make the horizontal part of the hammer.
5. Copy, paste and move the hammer post to make the hands rod of the clock.
6. Save.

Clock Bells

1. Copy and Paste one of the feet spheres to make the general shape of one of the bells.
2. Position the copied sphere on top of a bell post.
3. Resize the bell sphere to the approximate size in the diagram (around 200%).
4. Delete the lower half of the bell sphere and rotate it into position.
5. Give the bell an inside face.
6. Use *Smooth Shift* to give the bell some thickness.
7. Use the *Mirror* tool to duplicate the bell on the other post.
8. Cut and paste all objects onto layer one and save.

Clock Face

1. Make a small box for one of the tick marks on the face of the clock.
2. Use the *Rotate* tools to rotate the mark 30 degree\$.
3. Copy, paste and rotate the mark 12 times. Don't make the numbers.
4. Cut and paste the tick marks to layer one
5. Save
6. Make the triangle shape for the top of one of the hands (3-sided disc
7. Make the bottom portion of the hand (a 4-point polygon).
8. Select both polygons of the hand and *Merge Polygons*.

9. Copy and paste the first hand to create the second hand.
10. Shorten or lengthen the second had as needed.
11. Add thickness to the hands with *Extrude*.
12. Cut and paste hands onto layer one.
13. Save.

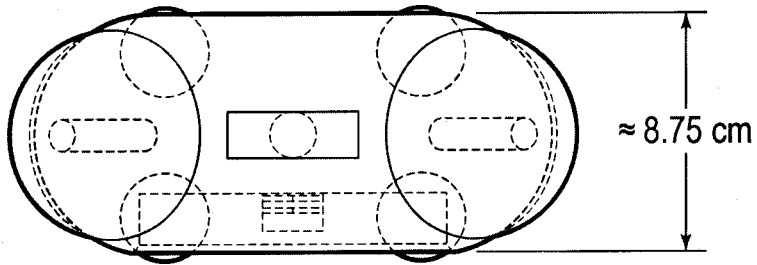
Surfacing the Clock

1. Select one of the bells.
2. Change the surface of the bell to the following:
 - Name: Right _ Bell
 - Color: Yellow (reduce blue to 000)
 - Diffuse: 70%
 - Specular: 30%
 - Smoothing: turn on
3. Do the same to the other bell. Name it Left Bell.
4. Select the hammer and name it Hammer. The surface should be the same as the bells.
5. Select the bell posts and name them Bell _ Posts. Use the same surface as bells.
6. Select the hand rod on in the face of the clock and name it Rod. Surface the same.
7. Name and surface the Tick Marks the same surface numbers as the bells.
8. Select the hands and change the surface to:
 - Name: Hands
 - Color: Red
 - Diffuse: 70%
 - Specular: 30%
 - Smoothing: turn on
9. Select the clock body and change its surface to:
 - Name: Body
 - Color: Blue
 - Diffuse, Specular, and Smoothing are the same
10. Select, name (Feet), and surface the clock feet with the same numbers as the body.
11. Select the front face of the clock. Name it Face and change surface color to white.
12. Save.

Layering Clock

1. Select and place each part that is to move onto its own layer.
 - Left bell to layer 2
 - Right bell to layer 3
 - Hammer to layer 4
 - Minute hand to layer 5
 - Hour hand to layer 6
 - The rest of the clock will remain in layer one
2. Save

Clock Project Specifications

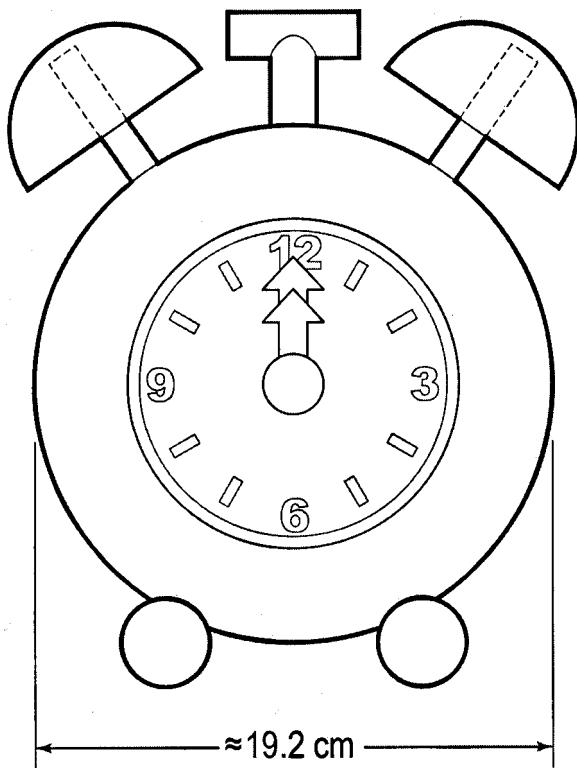


Top view

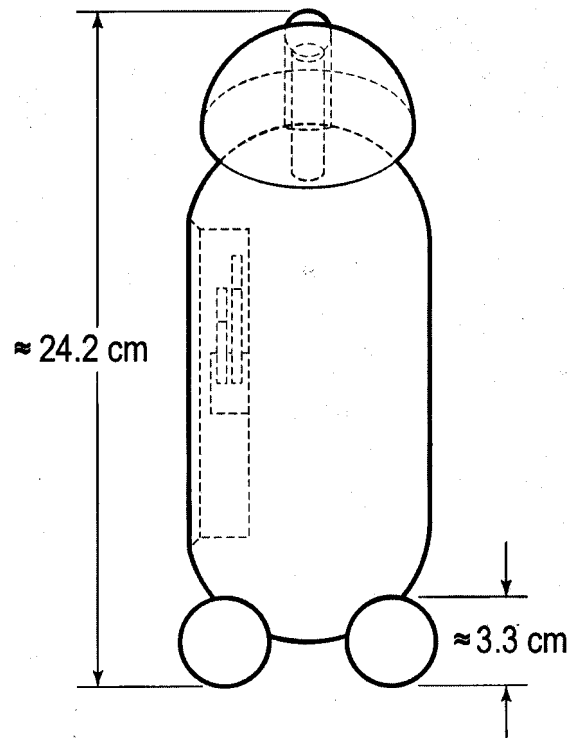
Notes:

[1] All dimensions are approximate.

[2] Numbers and tick-marks omitted for clarity in Top and Side Views.



Front view



Side view