

Macromedia Flash MX

Animated Clock Tutorial

ver. 2006.07.11

Special Thanks to:
Mr. Doyle and the 2005/06 Comm-Tech Students at
Beamsville District Secondary School
(District School Board of Niagara)

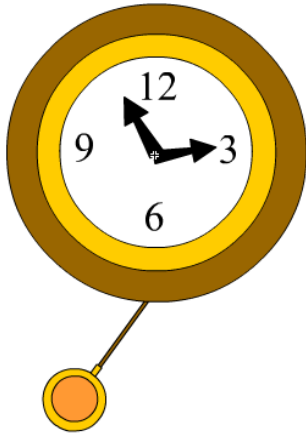
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Animated Clock Tutorial

LAST MODIFIED: 20060711



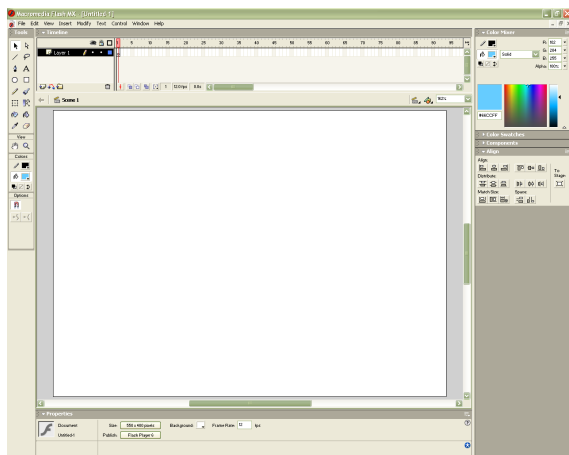
In the following tutorial, you will practice your Flash drawing skills and create a cycle animation in the form of a clock.

Like a real clock, your's will be made from a collection of different parts. In Flash, these parts are known as Movie Clips -- These are the building blocks for designing and animating objects in Macromedia Flash.

1. Preparation

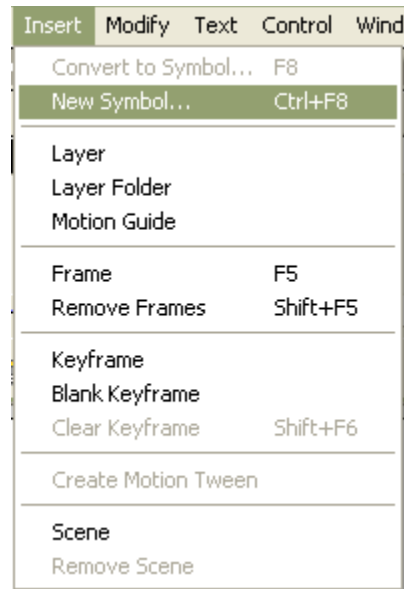
If you have completed the 3D Room tutorial, load your project now. Otherwise, start with a new document.

Note: Once completed, you can copy and paste your animated clock into any Flash projects that you create.

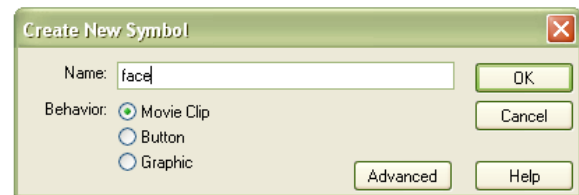


2. Designing Your Clock's Face

From the top menu bar, select INSERT -> NEW SYMBOL ...

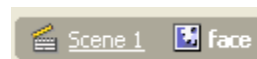


Type “face” in the name field, and select Movie Clip for the symbol’s behaviour ...



After you click OK, notice that the screen’s interface changes.

For example, the word “face” now appears beside “Scene 1”. This indicates that you are editing the symbol “face” ...

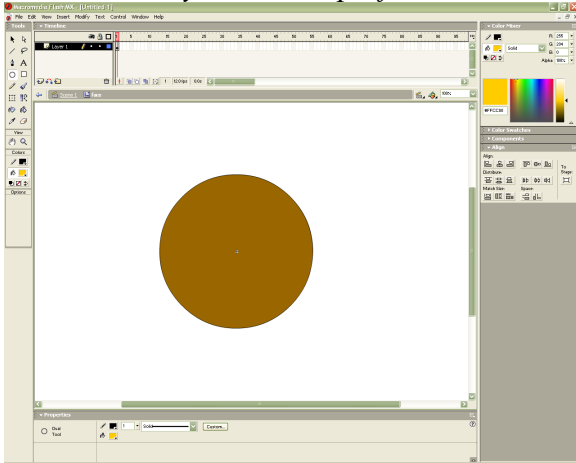


You should also see a crosshair in the middle of your screen. This indicates the center of your symbol ...

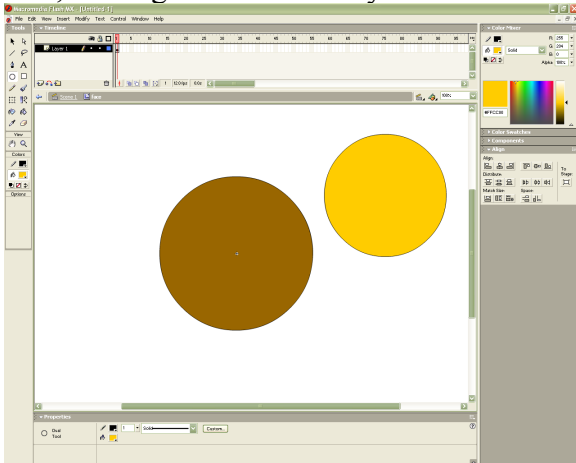
+


 Using the **Oval Tool**, draw the outer frame of your clock face ...

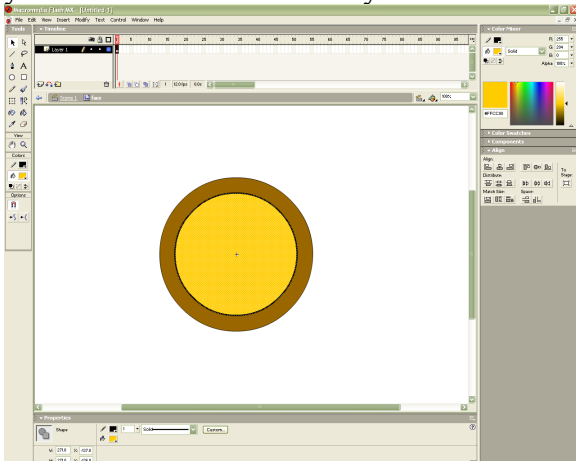
Hint: Hold the <SHIFT> key while you draw to make your oval a perfect circle.



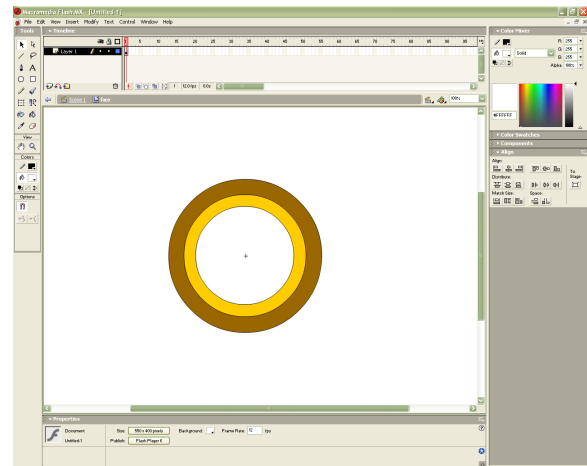
Draw the trim for your clock face off to one side, making it smaller than your frame ...



 Using the **Arrow Tool**, double-click on your trim and center it over your frame

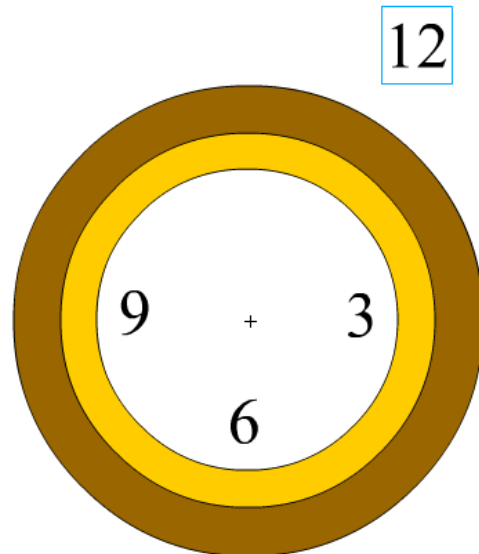


Repeat the previous two steps once more to create the middle of your clock face ...




Using the text tool, add the numbers to your clock face.

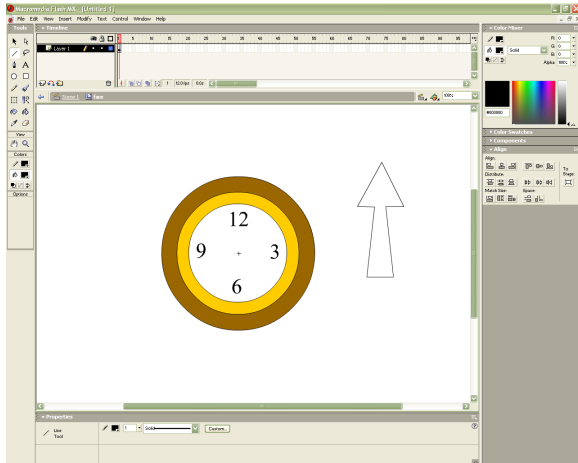
Note: The colour of your text will be the same as your previous fill colour, therefore, make sure you change your fill colour, otherwise you will have white text on a white background.




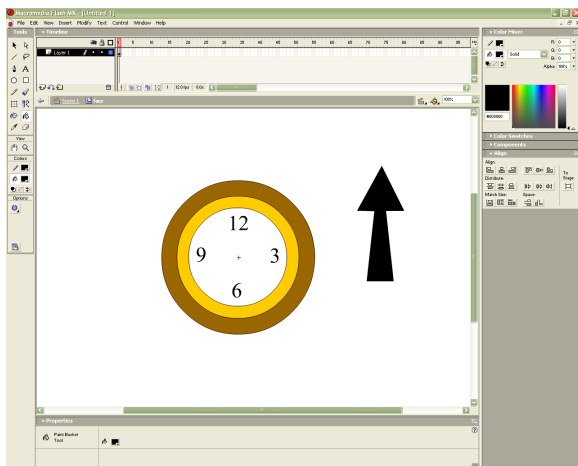
Remember, you can move objects into place by using the **Arrow Tool**. Similarly, you can make fine adjustments by tapping the arrow keys on your keyboard. This is known as “nudging.”

Once you have the numbers in place, you're ready to design your hour and minute hands.

 Using the **Line Tool**, draw the outline of your hour hand somewhere beside your clock face ...



 Fill this shape using the **Paint Bucket**.

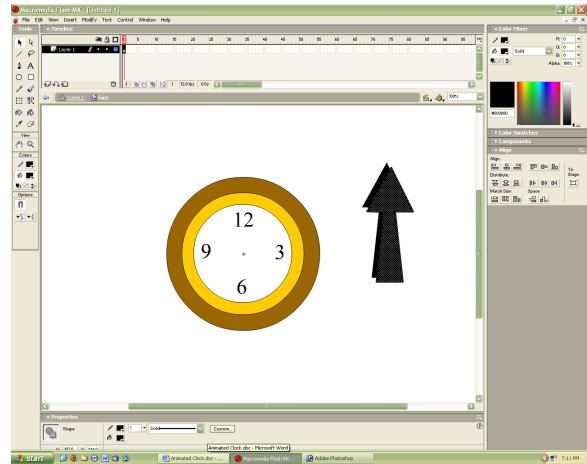


For this tutorial, we'll make a duplicate copy of this arrow for our minute hand.

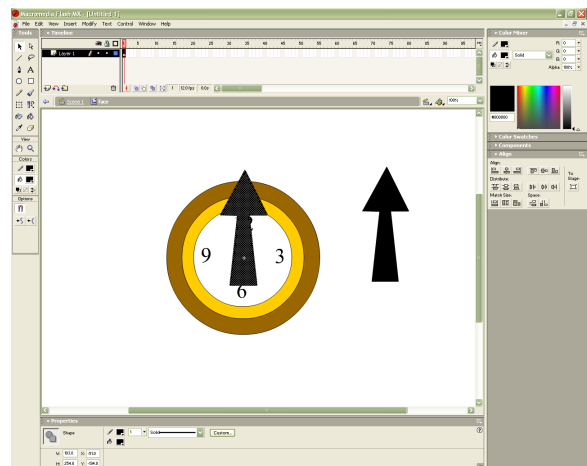
Using the **Arrow Tool**, double-click on your hour hand to select it, *or* draw a box around it using the same tool.


To duplicate an object, you can select the following menu: EDIT -> DUPLICATE

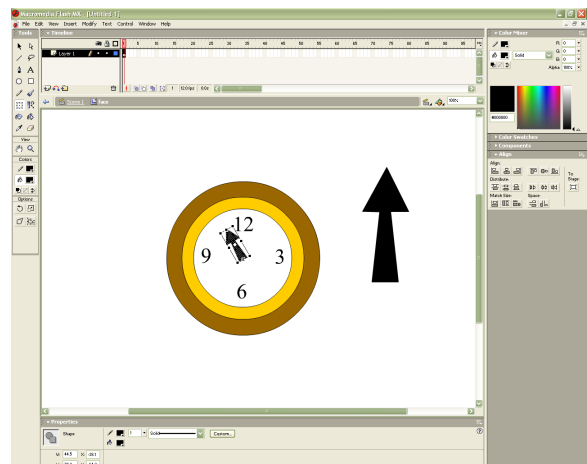
You can also hold the <CTRL> key and press the letter "d" on your keyboard ...




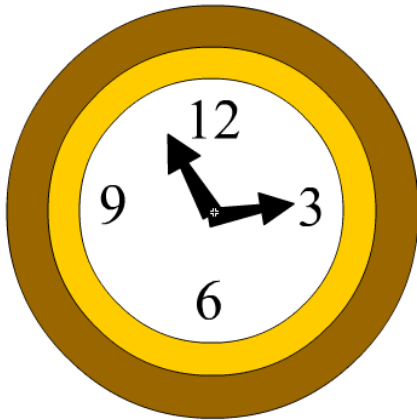
Move the new hand onto your clock face. *Make sure you do not deselect it at any time.*



 Using the **Free Transform Tool**, scale your object by pulling on the corner handles.



 Using the **Arrow Tool**, double-click on your other hand to select it, then scale and rotate it using the **Free Transform Tool**.



Your clock face is now complete.

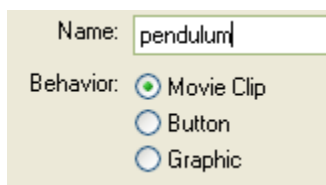
If you have not done so, save a copy of your work before continuing.

3. Designing the Pendulum

The pendulum will be the part of our clock that is animated. Like our clock face, the pendulum will be a **MOVIE CLIP** symbol.

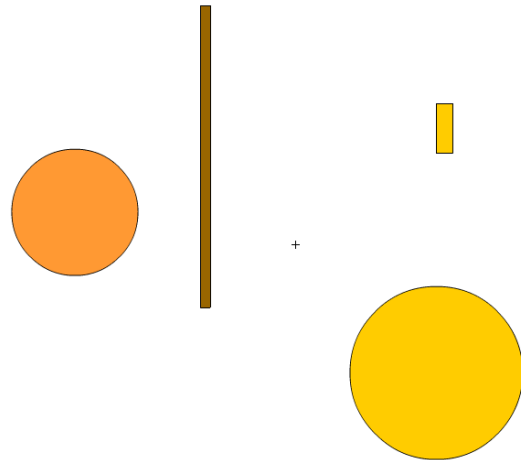
From the top menu bar, select **INSERT -> NEW SYMBOL ...**

Type “**pendulum**” in the name field, and select **Movie Clip** for the behaviour ...

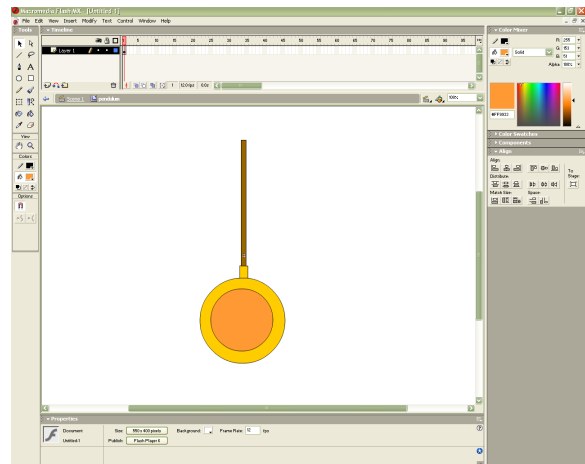


Note: Every symbol that you create is stored in a safe place known as the Library. When you click OK, your clock face will disappear, but don't worry ... it's safe, so long as you've saved your current project.

The shape of your pendulum is really up to you. Try to build it from separate pieces just like we did with our clock face ...



Remember, you can move these pieces into place by using the **Arrow Tool** as well as “nudging” them using your arrow keys.



You now have the parts required to build your clock. Our next section will show you how to combine these pieces together to form a cycle animation.

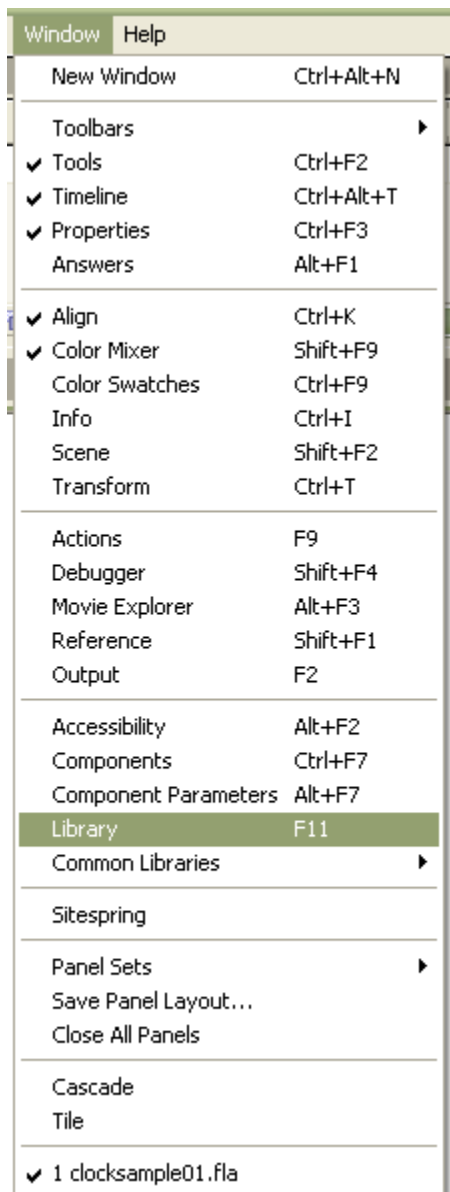
The important thing to remember here is that every part that we want to animate needs to be a separate **Movie Clip** symbol. In this case, the only moving part will be our pendulum ... *Now let's ANIMATE!*

PART TWO: Animating Your Clock

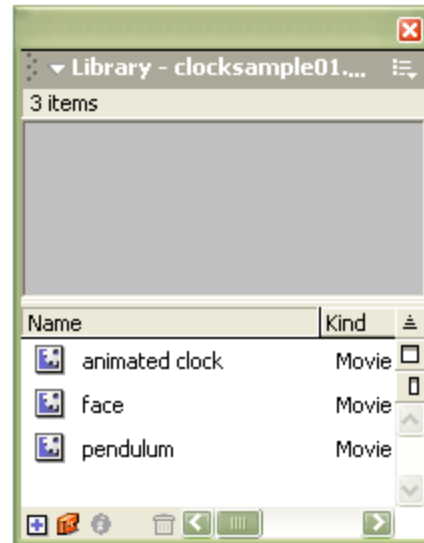
From the top menu bar, select INSERT -> NEW SYMBOL. Type “**animated clock**” in the name field, and select Movie Clip for the behaviour.

We now need to find our symbols that are safely stored in **The Library**.

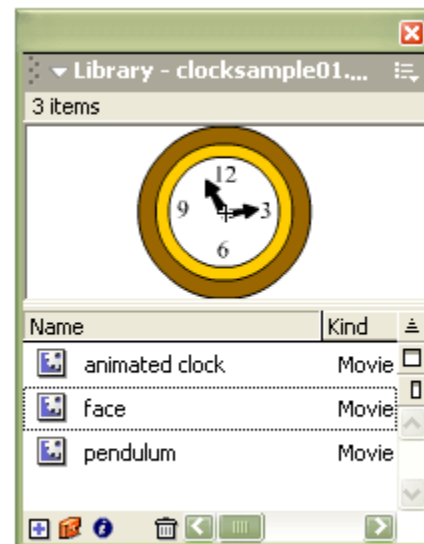
Open the library by selecting the menu WINDOW -> LIBRARY ...



Notice that we have three symbols in our library ...

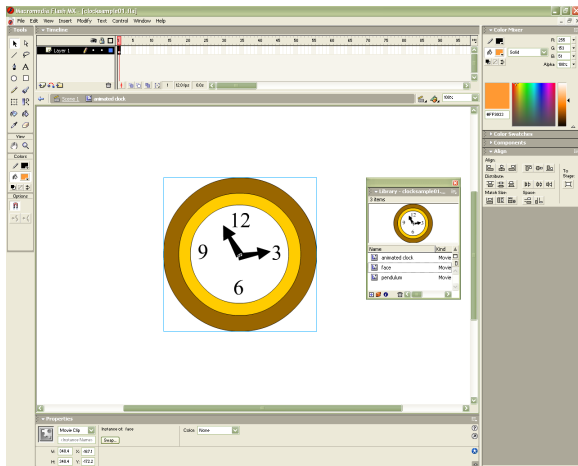


Single click on your “face” Movie Clip ...



A picture of your clock face should appear in the preview window. If you ever need to edit one of your symbols, you would **DOUBLE CLICK** on its preview picture.

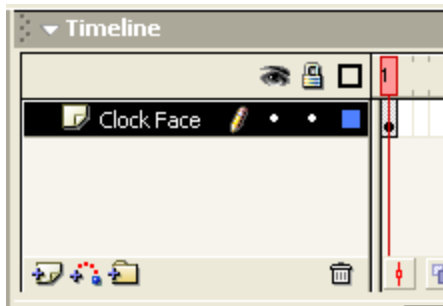
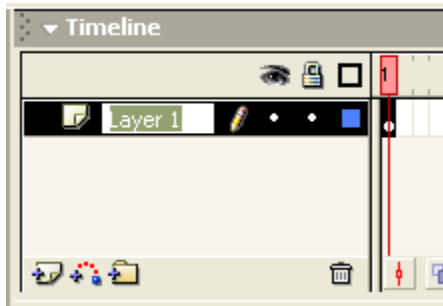
For this example, our clock face is good to go, so we'll move it onto our stage by **CLICK** and **DRAGGING** the preview picture onto our work area ...



Notice that a BLUE selection box appears around your clock face. This indicates that the drawing is a SYMBOL (ie. Movie Clip).

Let's rename the current layer on the timeline from "Layer 1" to "Clock Face".

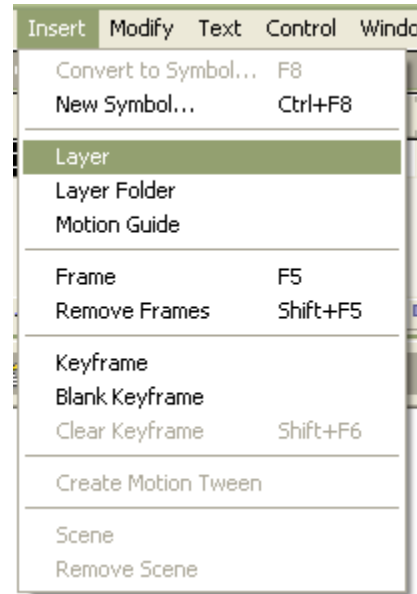
You can rename a layer by double-clicking on its name ...



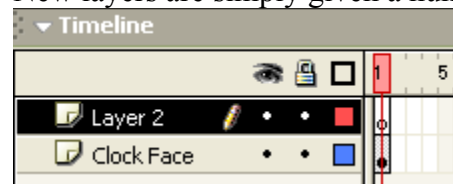
Press <ENTER> after you have renamed the layer to "Clock Face."

We're now ready to add our "Pendulum" Movie Clip symbol. Since this piece will be animated, it needs to be on its own layer.

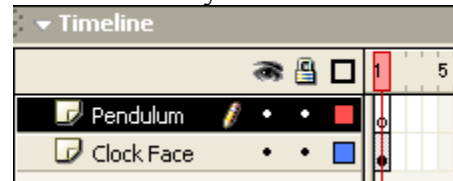
Select INSERT -> LAYER ...



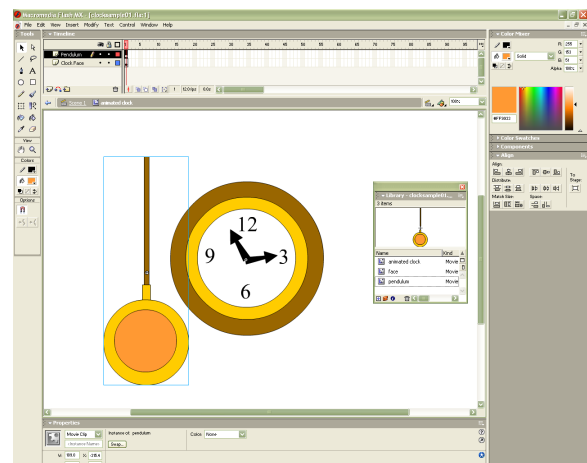
New layers are simply given a number ...



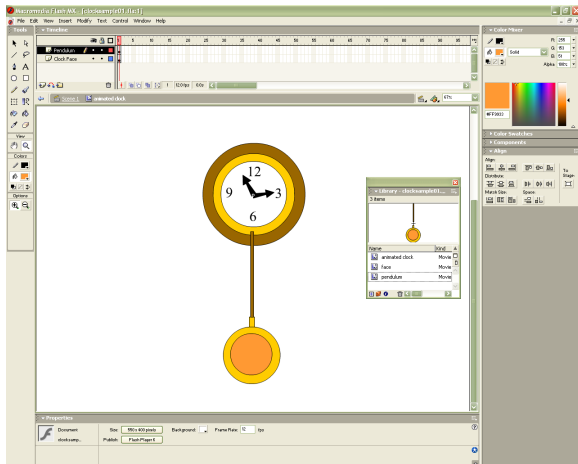
Rename this layer to "Pendulum" ...



Select your "Pendulum" Movie Clip in the Library and drag a copy onto the stage ...

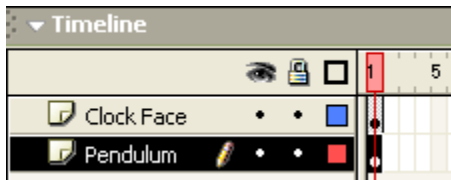


For this example, we're going to zoom out a little and then position the pendulum below the clock face by using the **Arrow Tool** ...

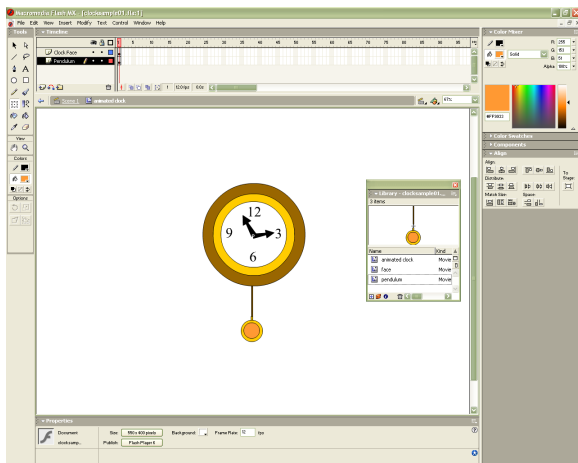


Notice that the pendulum is currently on **TOP** of the clock face.

We can move it behind by clicking on the Pendulum layer name and dragging it below the Clock Face layer.



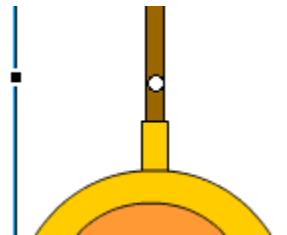
Using the **Free Transform Tool**, make sure that your clock and pendulum are scaled to the size you want ...



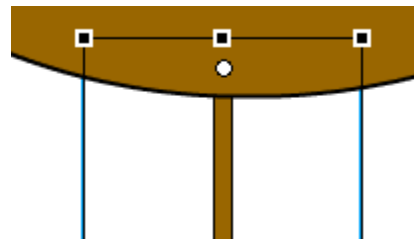
For this animation to work properly, we want the pendulum to swing from the top part of its arm where it connects to the clock face. In order for this to happen, we need to move its center point.

Using the **Free Transform Tool**, click once on your pendulum.

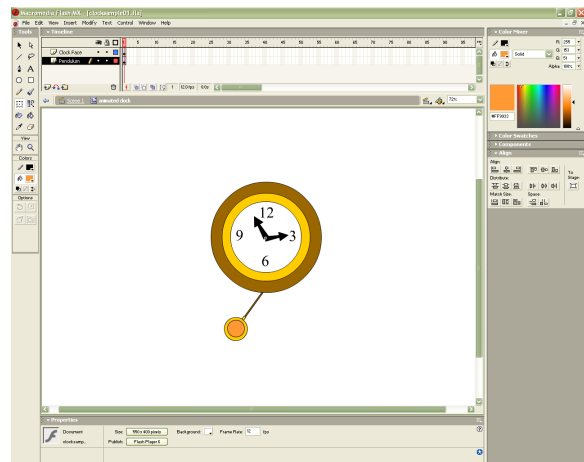
The center point looks like a tiny white circle ...



Click and drag this point to where the pendulum connects with the clock face ...



Using the same **Free Transform Tool**, rotate the pendulum to one side ...



This is our pendulum's starting position.

Our default animation frame rate is 12 frames per second. This means that our eyes will see 12 pictures for every second.

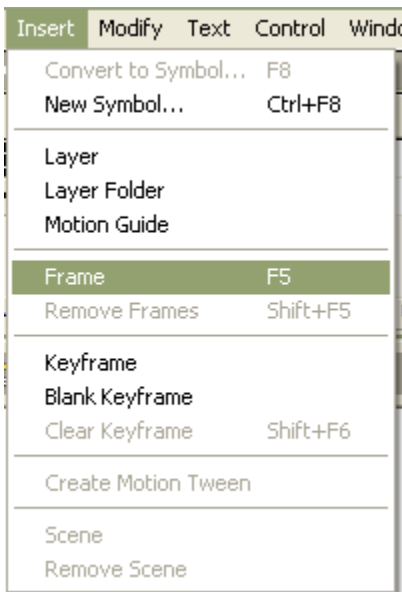
If our pendulum swings back-and-forth once every second, it will complete a full cycle in 12 frames.

Therefore, our Clock Face needs to exist for 12 frames on the timeline.

Click on FRAME 12 on the Clock Face layer (not the Pendulum layer) ...



To add extra frames to this point, select the menu **INSERT -> FRAME ...**



You should see a gray bar appear between frame 1 and frame 12 ...



This means that our Clock Face remains “static” or does not change for 12 frames.

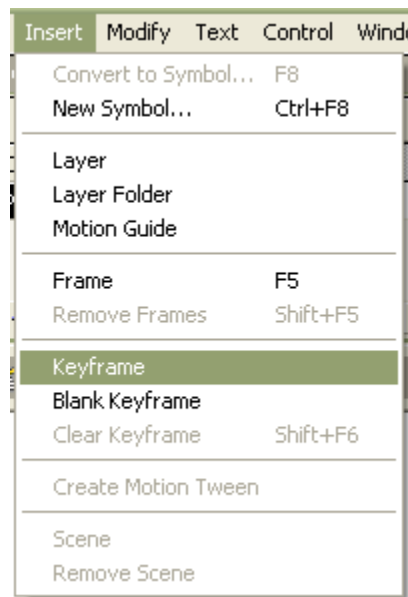
HOWEVER ...

Our pendulum is a little different because it does move. To indicate these changes in direction, we need to use KEY FRAMES.

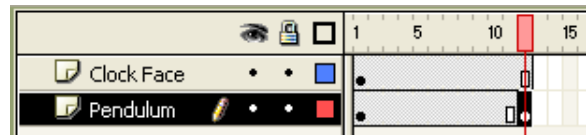
Select FRAME 12 on the Pendulum layer...



Select **INSERT -> KEYFRAME ...**



Notice that the frame has a DOT inside of it. This indicates a keyframe has been added ...




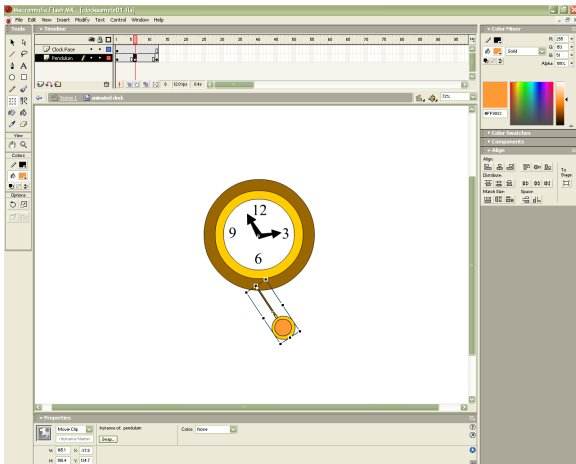
Because our pendulum swing ends where it started, we do not need to change anything for this keyframe.

However, we do need to add another keyframe at the half-way point so that our pendulum can swing to the other side.

Add a keyframe to Frame 6 on the Pendulum layer ...



 Using the **Free Transform Tool**, rotate your pendulum so that it is swinging to the opposite side...



To complete this animation, our last steps are to tell Macromedia Flash to animate the frames “in-between” our keyframes.

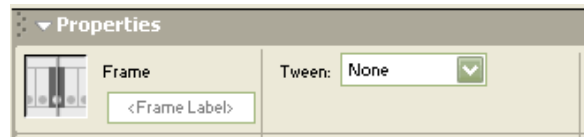
In other words, we want Flash to fill in the extra pictures so that it looks like our pendulum is swinging like a clock.

Click on your Pendulum layer’s name to select the entire layer ...

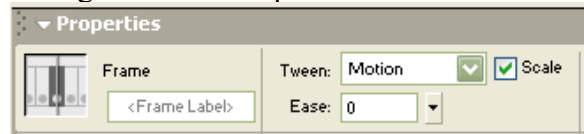


Notice that all of the frames are highlighted in black.

At the bottom of your screen, look for the **PROPERTIES** section and find the word “Tween” (ie. “in-between”).



Change the Tween option to **MOTION** ...



We use Motion Tweens whenever we animate a Movie Clip symbol.

Notice that your timeline now has a blue arrow that travels from one keyframe to the next. This indicates that a Motion Tween has been successfully applied ...

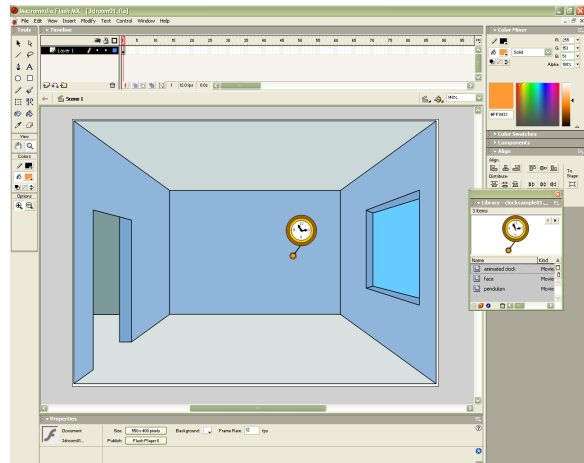


Press <ENTER> to test your animation.

PART THREE: Adding Your Clock to a Project

To add your clock to your current project, click on the **SCENE 1** icon and drag a copy of “Animated Clock” from the library to your stage.

To test your project, select the menu: **CONTROL -> TEST MOVIE**.



[end]