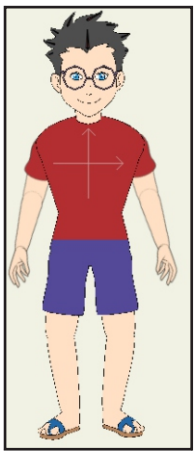
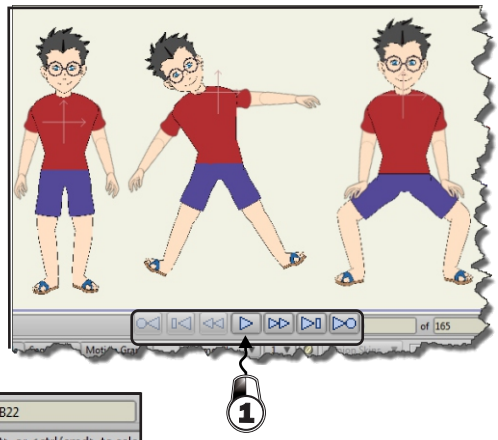
Creating Dynamic Bones

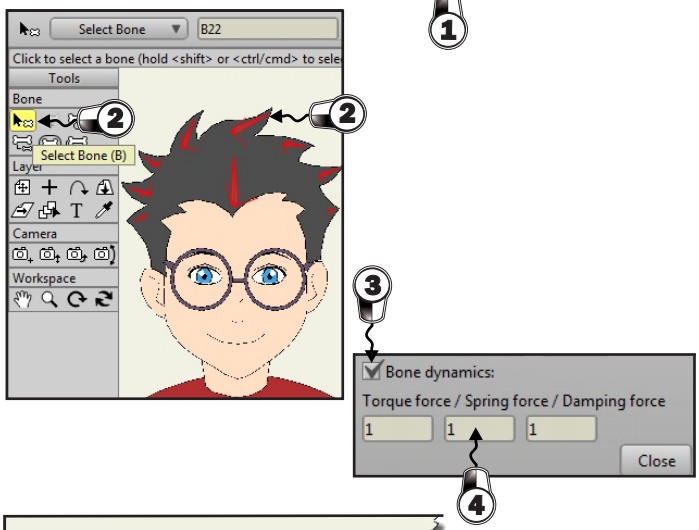
Lesson 5

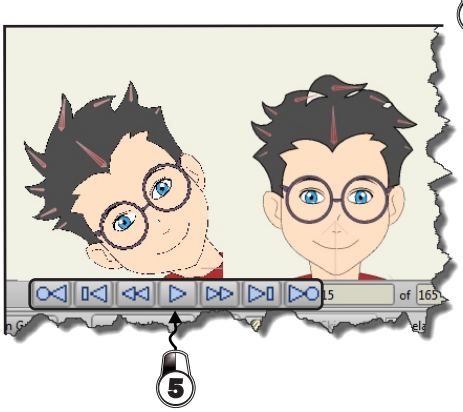
A cool feature that can be applied to both Layer and Region bound bones is **Bone Dynamics**. This is where we can apply physics to certain bones so they react to movement. Good examples of these would be creating feathers that react to the movement of a wing, physics-based hair, springy objects, and so forth. Here we will not be using a bird that have wings, instead we will still be using the same character(Mr. Flex).

Open the example file **`BoneDynamics.anime`**.You will see Mr. Flex again, this time, it looks like his hair is spiky! We will be applying Bone Dynamics to these two layers by performing the following steps below.









1. Hit the **Play** button on your timeline to see what the animation looks like. Notice how the **hair** remains stationary as the character **hops** and **jumps**.
2. Go back to **frame 0**, click the **Select Bone** tool, and highlight all the bones that make up the hair, you can use and hold the **CTRL key** while clicking the rest of the hair bones , as shown. There should be a total of nine(9) bones selected.
3. Click on the **Bone Constraints** drop-down menu on the top bar and notice how there is an object to enable **Bone Dynamics** at the bottom of the panel. **Click to turn on** the Bone dynamics checkbox.
4. For the **Torque**, **Spring**, and **Damping** settings, leave it to their default values or you can adjust it and experiment to view effects as you change the values of each field.
5. Close the panel and click on the **Play** button or press the **Spacebar key** again to see the effect. Now notice how the hair react to the movement of Mr. Flex. This is done without us having to manually animate anything. The picture(right) shows hair movements as the character move.
6. Save your work in own folder.

You can change the Torque, Spring, and Damping settings to adjust how these bones will react to movements of your asset or character. Try changing the numbers to see what results you come up with. Subtle movements with Dynamic Bones can really add extra depth to your work. Try using it in different situations to see what benefits it brings.

6 Bringing a Cartoon Character to Life

Laboratory Activities

Lab 6.1 Layer Binding Dee
Lab 6.2 Jake's Layer Binding
Lab 6.3 Flexi-Binding Fred
Lab 6.4 Flexi-Binding Jefrey
Lab 6.5 Point Binding the Skeleton
Lab 6.6 Restricting Bone Movements
Lab 6.7 Animating the Human Skeleton
Lab 6.8 Smart Bones on Skeleton (Smart Bone Action)
Lab 6.9 Mouth Switch & Smart Bones

Chapter 6 Project 1 Animating Bully
Chapter 6 Project 2 Dog goes to the Beach

Point Binding the Skeleton

Lab Exercise 6.5

Task: Bind the points of a human skeleton
Expected Output File: None
Work File: Human body skeleton.jpg

1. Launch the Anime Studio from your desktop.
2. Create a new Anime Studio project.
3. Draw this character or use any of the tracing techniques and color it, use the work file provided for this workbook for tracing.
4. Group each part of the body and make a separate layer in each part. As shown, parts are grouped and under each group are the parts.
5. Before adding bones to this character, on the Layers Panel, add a new Bone Layer and name it "**Character Bone**" and then drag all the layers inside this bone layer.
6. To add bones to this character, use these tools below. The picture shown is your reference or guide on where bones are added.

   Add Bone (A) Select Bone (B)
7. Check then the bone strength and the child-parent bone rules, else do the re-parenting. Below are tools to use when doing these task.

   Bone Strength (S) Reparent Bone (P)
8. Color each bone to easily identify. It is hard to determine the front and back if it has the same color, to do this, select the bone using Select Bone tool, then click on the top bar and choose a color.
9. Done? let's do Point Binding, use this tool below for point binding, Refer to Chapter 5 of your work text. Use the tool below to do the task.

   Bind Points (I)
10. Do the same steps on how to bind the points through the bones. Make sure it is properly binded, use the tools below for bone manipulations and adjust the size of the bone proportionate to its part. To rig bones you have to imagine how our body is move when respect to our bones.

    Manipulate Bones (Z) Transform Bone (T)
11. Save this project file to your folder.