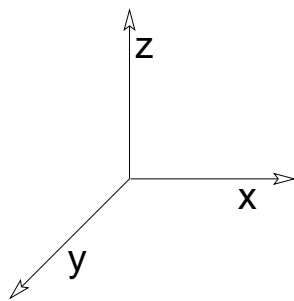
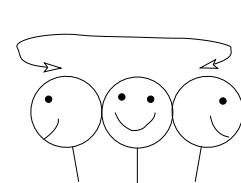


Some people have a hard time understanding about **roll**, **pitch**, and **yaw**. Here is a picture that may help:

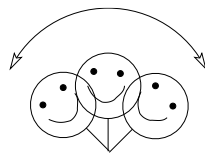


- *yaw* refers to the direction in which the body is facing i.e., its orientation within the  $xy$  plane, or the rotation of a body around the  $z$  axis
- *roll* refers to whether the body is upside-down or not i.e., its orientation within the  $yz$  plane, or the rotation of a body around the  $x$  axis
- *pitch* refers to whether the body is tilted i.e., its orientation within the  $xz$  plane, or the rotation of a body around the  $y$  axis

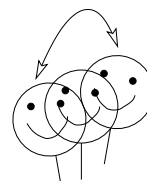
Here are some more pictures that may help:



**yaw**  
like when you shake your head "no"



**roll**  
like when your neck hurts and you roll your head to the left and right in order to stretch out your neck...



**pitch**  
like when you nod your head "yes"