# Anchor Boxes for Weapon Detection using Deep Learning

YOLO uses anchor boxes to help predict bounding boxes for detecting objects of various sizes and aspects ratios, improving detection accuracy for things like weapons.

→ Masks (which anchors go to which layer)

Each [yolo] layer uses 3 anchors via the mask line:

- First YOLO layer (13×13, small objects)
  mask = 6,7,8 → anchors: (116,90), (156,198), (373,326)
- Second YOLO layer (26×26, medium objects)
  mask = 3,4,5 → anchors: (30,61), (62,45), (59,119)
- Third YOLO layer (52×52, large objects)
  mask = 0,1,2 → anchors: (10,13), (16,30), (33,23)

→Your config is using these anchor boxes:

[(10,13), (16,30), (33,23),
(30,61), (62,45), (59,119),
(116,90), (156,198), (373,326)]

→And they're divided among the 3 YOLO layers like this:

1. Small objects (52×52 grid) : (10,13), (16,30), (33,23)
2. Medium objects (26×26 grid) : (30,61), (62,45), (59,119)
3. Large objects (13×13 grid) : (116,90), (156,198), (373,326)