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Steps to determining how many ping-pong balls can fit in a bus:

1. Determine size of bus (need to know which model to be precise)
   1. http://www.blue-bird.com/uploadedFiles/Blue-Bird/Products/School/Vision/SB-VIS-0710.pdf
2. Find **interior volume** (without seats)



* 1. Find volume of the rectangle
  2. Find volume of the semi-cylinder
  3. Find volume of the steps area
  4. Find volume of wheel well
  5. **Interior volume** = volume of rectangle + volume of semi-cylinder + volume of steps – wheel well

1. Find total volume of a bench (multiply by number of benches to get total volume of benches)
   1. Seat cushion volume = seat cushion length \* seat cushion width \* seat cushion height
   2. Seat back volume = seat back length \* seat back width \* seat back height
   3. Seat volume = seat cushion volume + seat back volume
   4. **total bench volume** = seat volume \* number of benches
2. Find **volume of the driver's seat**
3. Find **volume of steering wheel**
4. **Usable Volume** = **interior volume** - **total bench volume** - **driver's seat volume - steering wheel volume**
5. Find **volume of a ping-pong ball**
   1. Source: http://www.tabletennismaster.com/ping-pong-balls.html
   2. Diameter: 40mm = 0.04m
   3. Radius(r): 20mm = 0.02m
   4. **Ping-pong ball volume**: 4/3 \* π \* (0.02m)3 = 0.0000335m3
   5. Convert volume for meters to feet: 0.0000335m3 \* 3.281= 0.00011 feet3
6. Assuming that the ping-pong balls can fit perfectly into the bus, divide usable volume by ping-pong ball volume and round down to get the amount of ping-pong balls that can fit in the bus. This won’t actually be the correct number though since the ping-pong balls won’t fit perfectly with no space in between them, as can be seen with the red filling in the image below.  
   
   1. **Theoretical number of ping-pong balls in bus: usable volume** / **ping-pong ball volume**
7. Better to treat each ping-pong ball as a square with side distance of 40mm. Volume of square would be 0.04m \* 0.04m 0.04m = 0.000064 m3. Convert to feet: 0.04m3 \* 3.281 = 0.0022601 feet3
   1. **Number of ping-pong balls in bus**: **usable volume** / **square ping-pong ball volume**

*Note: This number does not take into account bars beneath seats, step hand-rail or dashboard objects (such as door lever).*