

Create an SVG image of a Football Field

1. Copy and Paste the 3000x1600 grid from:
<http://steamcoded.org/lessons/grid3000x1600.svg.txt>
2. After the opening `<svg>` tag add a `<style>` element as follows:

```
<style type="text/css"><![CDATA[
  .hashmarks {stroke:white;stroke-width:50;stroke-dasharray:6,19;}
  .yardlines {stroke:white;stroke-width:1400;stroke-dasharray:10,115;}
  .yardlinetext {fill:white;stroke:white;stroke-width:6;font-size:100px;font-family:Arial;}
  .lj {text-anchor:start;}
  .rj {text-anchor:end;}
]]>
</style>
```
3. Add a `<rect>` element with attributes: `width="100%" height="100%" style="fill:green;"`
4. Add a group element `<g>` with attribute `transform=translate(0,100)"`
Don't forget the ending `</g>` tag
5. Inside the group from step 4, add a `<rect>` element with attributes:
`x="25" y="25" width="2950" height="1350"`
`style="fill:none;stroke:white;stroke-width:50;"`
6. Add a `<path>` element with attributes:
`d="M245,700L2755,700"`
`class="yardlines"`
7. Add a group element `<g>` with attribute `class="hashmarks"`
8. Add 2 `<path>` elements inside the group of step 7 with attributes:
Path 1: `d="M247,525L2753,525"`
Path 2: `d="M247,875L2753,875"`
9. Outside the group element of step 7, add a group element `<g>` with attribute:
`class="yardlinetext"`
10. Inside the group from step 9, add 2 group elements to put the 10 yardline on the field

```
<g transform="translate(500,1250)">
  <text x="-1" y="0" class="rj">1</text>
  <text x="9" y="0" class="lj">0</text>
</g>
<g transform="rotate(180,500,700) translate(500,1250)">
  <text x="-1" y="0" class="rj">1</text>
  <text x="9" y="0" class="lj">0</text>
</g>
```
11. Copy the code from step 10 and paste it on the next line, then change:
value 500 to 750 in 3 places
x attributes to -8
text value from 1 to 2 (20 yard line)
12. Copy the code from step 11 and paste it on the next line, then change:
value 750 to 1000 in 3 places
text value from 2 to 3 (30 yard line)
13. Copy the code from step 12 and paste it on the next line, then change:
value 1000 to 1250 in 3 places
text value from 3 to 4 (40 yard line)
14. Copy the code from step 13 and paste it on the next line, then change:
value 1250 to 1500 in 3 places
text value from 4 to 5 (50 yard line)
15. Copy the code from step 14 and paste it on the next line, then change:
value 1500 to 1750 in 3 places
text value from 5 to 4 (40 yard line)

16. Copy the code from step 15 and paste it on the next line, then change:
value 1750 to 2000 in 3 places
text value from 4 to 3 (30 yard line)
17. Copy the code from step 16 and paste it on the next line, then change:
value 2000 to 2250 in 3 places
text value from 3 to 2 (20 yard line)
18. Copy the code from step 17 and paste it on the next line, then change:
value 2250 to 2500 in 3 places
x attributes to -1
text value from 2 to 1 (10 yard line)
19. Print the field with the grid showing, then hide the grid by change the display style from initial to none, and the opacity from 0.5 to 1

Add a Football Play to the Football Field

1. Add a definitions element `<defs>` after the `<style>` element near the top of the code
2. Add a `<path>` element with attributes: `id="route" d="M2250,325L1725,325"` to the `<defs>`
3. Add another `<path>` element with attributes: `id="rac" d="M1725,325L800,900L0,375"`
4. Add a `<symbol>` with attributes: `id="receiver" overflow="visible"` to the `<defs>`
5. In the browser, copy the code from the lessons link for the receiver.txt, then paste the code into the `<symbol>` element created in step 2

6. After the code for the football field, add a `<use>` element as shown below:

```
<use x="0" y="0" xlink:href="#receiver">
  <animateMotion id="a1" dur="0.8s" begin="0s;a2.end">
    <mpath xlink:href="#route" />
  </animateMotion>
  <animateMotion id="a2" dur="2s" begin="a1.end">
    <mpath xlink:href="#rac" />
  </animateMotion>
</use>
```

Add a football to pass to the receiver

7. Add another `<symbol>` element to the `<defs>` section of the code as shown:

```
<symbol id="football" overflow="visible">
  <g transform="rotate(60,25,-20)">
    <text x="0" y="0" style="font-size:50px;">&#127944;</text>
  </g>
</symbol>
```
8. Add another `<path>` element with attributes: `id="pass" d="M2250,700L1725,325"` to the `<defs>` section of the code
9. Add another `<use>` element by copying the from step 6 and pasting on the next line, then change `#receiver` to `#football`
change `#route` to `#pass`

Add a quarterback

10. Copy the code for the `<symbol>` definition of the receiver and paste on the next line, then change the transform attribute to add a rotation transformation:
`transform="translate(130,-100) scale(-10,10) rotate(-45,13,13)"`
also change the id from "receiver" to "qb"
11. Add a `<use>` element on the line after the other `<use>` elements to reference the "qb"
`<use x="2250" y="700" xlink:href="#qb" />`

Add a pass defender

10. Copy the code for the `<symbol>` definition of the receiver and paste on the next line, then change the transform and style attribute to read:
`transform="translate(0,-100) scale(10)" style="fill:blue;"`
also change the id from "receiver" to "d1" and
change the style of the first `<path>` element from "fill:white;" to "fill:#999;"
11. Add another `<path>` element with attributes: `id="defend" d="M2125,500L1825,325"` to the `<defs>` section of the code
12. Add another `<path>` element with attributes: `id="offscreen" d="M-100,-100"` to the `<defs>` section of the code
13. Copy the `<use>` element referencing the `#receiver` and paste on the next line, then change
`#receiver` to "d1"
`#route` to `#defend`
`#rac` to `#offscreen`

Add a defender giving chase

14. Copy the code for the <symbol> definition of the defender (id="d1") and paste on the next line, then change the transform attribute to read:
transform="translate(130,-100) scale(-10,10)"
also change the id from "d1" to "d2"
15. Add another <path> element with attributes: id="chase" d="M1825,325L700,950L250,375" to the <defs> section of the code
16. Copy the <use> element referencing the #d1 and paste on the next line, then change
#d1 to "d2"
#defend to #offscreen
#offscreen to #chase