

## Fidget Spinner Instructions

1. Copy and paste the svg code at <http://steamcoded.org/lessons/Fidget.svg.txt>
  2. Draw a circle at (500,500) with a radius of 280 and attribute class="case"  
Hint: `<circle cx="500" cy="500" r="280" class="case" />`
  3. Draw a circle at (500,187.5) with a radius of 143 and attribute class="bg"  
add attribute transform="rotate(60,500,500)" to rotate it 60 degrees
  4. Copy the circle of step 3 and paste on the next line, then change the rotation angle from 60 degrees to 180 degrees
  5. Copy the circle of step 3 and paste on the next line, then change the rotation angle from 60 degrees to 300 degrees
  6. Create a group element with attribute class="s1" that will contain 3 child elements  
Hint: `<g class="s1">` Don't forget the closing tag `</g>` a couple of lines down
  7. Draw a circle at (500,187.5) with a radius of 170 and attribute class="case"
  8. Draw a circle at (500,187.5) with a radius of 120 and attribute class="c1"
  9. Draw a circle at (500,187.5) with a radius of 60 (no class attribute).  
Note: the circle gets its style from the group element class: s1
  10. Copy the entire group (all the code from steps 7-10) and paste on the next line, then change the group element class to s2 and add attribute transform="rotate(120,500,500)"
  11. Copy the entire group (all the code from steps 7-10) and paste on the next line, then change the group element class to s3 and add attribute transform="rotate(240,500,500)"
  12. Draw a circle at (500,500) with a radius of 135 and attribute class="c2"
  13. Draw a circle at (500,500) with a radius of 110 and attribute class="c3"
- When complete, change the style attribute of the first element with id="grid" from "display:initial" to "display:none" which hides the grid. Then change the style attribute of the element with id="code" from "opacity:0.5" to "opacity:1"
14. Animate the fidget spinner by adding attribute class="animate" to the group element with id="code"
  15. The `<style>` section of code contains definitions that are referenced by a class attribute on an element, for example class="case" references style .case  
Change the style attributes and notice the effect

## SMIL animation

16. Remove the CSS animation of step 14 by deleting the class attribute
17. Add an <animateTransform element on the line after the group with id="code"  

```
<animateTransform id="a1" attributeName="transform" type="rotate"
  values="0,500,500;360,500,500" dur="0.5s" begin="0s;a5.end" />
```

This will rotate the fidget spinner 360 degrees in 0.5 seconds
18. Copy step 16 and paste on the next line, then change  
id="a2" dur="0.75s" begin="a1.end"  
This will rotate the fidget spinner 360 degrees in 0.75 seconds  
when animation with id="a1" ends
19. Copy step 16 and paste on the next line, then change  
id="a3" dur="1s" begin="a2.end"  
This will rotate the fidget spinner 360 degrees in 1 seconds  
when animation with id="a2" ends
20. Copy step 16 and paste on the next line, then change  
id="a4" dur="1.5s" begin="a3.end"  
This will rotate the fidget spinner 360 degrees in 1.5 seconds  
when animation with id="a3" ends
21. Copy step 16 and paste on the next line, then change  
id="a5" dur="2s" begin="a4.end"  
This will rotate the fidget spinner 360 degrees in 1 seconds  
when animation with id="a4" ends

## Notes

22. The animation id="a1" begins at 0s or begins when animation with id="a5" ends