










# Polygons and Curves

Creative Coding & Generative Art in Processing 2  
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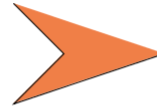
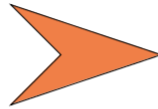
Slides revised by Michael Goldwasser

## Drawing Tools - Basic Shapes

- |             |   |           |   |
|-------------|---|-----------|---|
| ➤ Point     |  | ➤ Arc     |  |
| ➤ Line      |  | ➤ Quad    |  |
| ➤ Triangle  |  | ➤ Polygon |  |
| ➤ Rectangle |  | ➤ Curve   |  |
| ➤ Ellipse   |  |           |   |

## Basic Shapes: Polygons

```
beginShape();
vertex(x1, y1);
...
vertex(xN, yN);
endShape(CLOSE);
```



```
fill(240, 127, 71);
beginShape();
vertex(100, 50);
vertex(150, 100);
vertex(100, 150);
vertex(250, 100);
endShape(CLOSE);
```

```
fill(240, 127, 71);
beginShape();
vertex(100, 50);
vertex(150, 100);
vertex(100, 150);
vertex(250, 100);
endShape();
```

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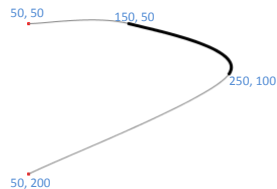
## Basic Shapes: Curves

```
curve(cpx1, cpy1, x1, y1, x2, y2, cpx2, cpy2);
```

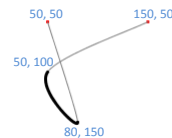
cpx1,cpy1- control point#1  
 x1, y1 - start of curve  
 x2, y2 - end of curve  
 cpx2,cpy2- control point#2

Draws a Catmull-Rom Spline between x1, y1 and x2, y2

Examples:



```
curve(50, 50, 150, 50, 250, 100, 50, 200);
```



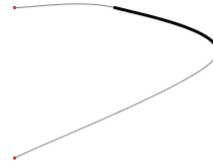
```
curve(50, 50, 80, 150, 50, 100, 150, 50);
```

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## More Complex Curves

```
beginShape();
curveVertex(x1, y1);
...
curveVertex(xN, yN);
endShape(CLOSE);
```



```
curve(50, 50, 150, 50, 250, 100, 50, 200);
```

```
beginShape();
curveVertex(50, 50);
curveVertex(150, 50);
curveVertex(250, 100);
curveVertex(50, 200);
endShape();
```

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## Example: A Penguin

```
// penguin
size(400, 500);
smooth();

background(0);
stroke(245, 63, 55);
strokeWeight(3);
fill(0);

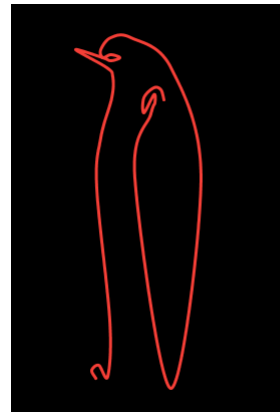
beginShape();
curveVertex(105, 400);
curveVertex(105, 400);
curveVertex(101, 392);
curveVertex(108, 387);
curveVertex(117, 398);
curveVertex(119, 342);
curveVertex(106, 210);
curveVertex(110, 160);
curveVertex(121, 120);
curveVertex(122, 99);
curveVertex(116, 90);

curveVertex(85, 72);
curveVertex(112, 80);
curveVertex(120, 83);
curveVertex(129, 80);
curveVertex(120, 77);

curveVertex(112, 80);
curveVertex(110, 72);
curveVertex(120, 60);
curveVertex(140, 60);
curveVertex(180, 90);

curveVertex(210, 200);
curveVertex(180, 410);
curveVertex(144, 200);
curveVertex(160, 136);
curveVertex(164, 125);
curveVertex(163, 117);
curveVertex(153, 135);
curveVertex(153, 120);
curveVertex(163, 110);
curveVertex(170, 112);
curveVertex(173, 122);
curveVertex(173, 122);

endShape();
```



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