# Vector basics

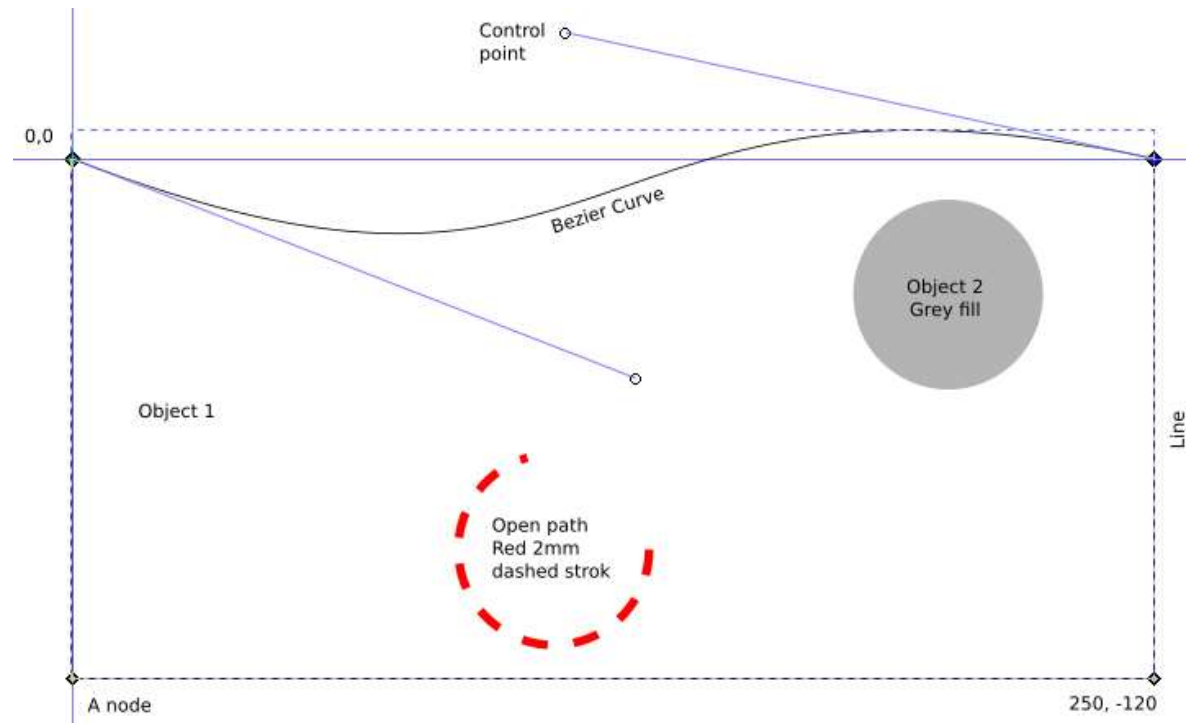*Example file:* *vector-explanation-diagram.svg*



**Figure 20: A simple vector file**

1. A vector graphics **file** consists of **objects**
2. Each object consists of a set of **points** on a Cartesian plane
3. These points are called **nodes**
4. The nodes are connected by **lines** or **curves**
5. Two nodes and the line or curve between them is called a **segment**
6. A series of segments is called a **path**
7. Paths can be **open**, with a start and end node - e.g. a line
8. Paths can be **closed, with the start and end nodes connected** - e.g. a rectangle
9. A closed path can be **filled** with a solid colour, a gradient or a pattern
10. Any path can have a **stroke** (outline) consisting of a colour, a thickness, and a style

Only closed paths can be cut out as a separate piece from the sheet.

A **Bezier curve** has start and end nodes and **control points** to modify the shape of the curve.

Fills are not relevant to laser cutting, as the laser only sees the line to be cut.