

Global alignment

Match = 2

Mismatch or insertion = -1

	-	g	a	a	t	t
-	0	← -1	← -2	← -3	← -4	← -5
g	↑ -1	↖ 2	← 1	← 0	← -1	← -2
g	↑ -2	↖ 1	↖ 1	← 0	← -1	← -2
a	↑ -3	↑ 0	↖ 3	↖ 3	← 2	← 1
t	↑ -4	↑ -1	↑ 2	↖ 2	↖ 5	← 4
c	↑ -5	↑ -2	↑ 1	↖ 1	↑ 4	← 4
t	↑ -6	↑ -3	↑ 0	↖ 0	↖ 3	↖ 6

```

S1 g g a t c t
   | | | |
S2 g a a t - t
  
```

Score = (4 * 2) + (2 * -1) = 6

Global alignment

Match = 2

Mismatch or insertion = -1

	-	g	g	a	t	c
-	0	← -1	← -2	← -3	← -4	← -5
g	↑ -1	↖ 2	↖ 1	← 0	← -1	← -2
a	↑ -2	↑ 1	↖ 1	↖ 3	← 2	← 1
a	↑ -3	↑ 0	↖ ↑ 0	↖ 3	↖ 2	↖ 1
t	↑ -4	↑ -1	↖ ↑ -1	↑ 2	↖ 5	← 4
t	↑ -5	↑ -2	↖ ↑ -2	↑ 1	↖ ↑ 4	← 4
c	↑ -6	↑ -3	↖ ↑ -3	↑ 0	↑ 3	↖ 6

S1 g a a t t c
 | | | |
 S2 g g a - t c

S1 g a a t t c
 | | | |
 S2 g g a t - c

Score = (4 * 2) + (2 * -1) = 6

Ends-free alignment

Match = 2

Mismatch or insertion = -1

	-	c	t	a	t	c	a
-	0	0	0	0	0	0	0
a	↑ 0	↖ ↗ -1	↖ ↗ -1	↖ 2	← 1	← 0	↖ 2
t	↑ 0	↖ ↗ -1	↖ 1	↑ 1	↖ 4	← 3	← 2
c	↑ 0	↖ 2	← 1	↖ ↗ 0	↑ 3	↖ 6	← 5
g	↑ 0	↑ 1	↖ 1	↖ ↗ 0	↑ 2	↑ 5	↖ 5
t	↑ 0	↑ 0	↖ 3	← 2	↖ 2	↑ 4	↖ ↗ 4
t	↑ 0	↖ ↗ -1	↖ ↗ 2	↖ 2	↖ 4	↖ ↗ 3	↖ ↗ 3
g	↑ 0	↖ ↗ -1	↑ 1	↖ ↗ 1	↑ 3	↖ 3	↖ ↗ 2

```

S1 - - a t c g t t g
      | | |
S2 c t a t c a - - -
    
```

Score = (3 * 2) + (6 * -1) = 0

Local alignment

Match = 2

Mismatch or insertion = -1

	-	g	a	a	t	t
-	0	← 0	← 0	← 0	← 0	← 0
g	↑ 0	↖ 2	← 1	← 0	↗ 0	↗ 0
g	↑ 0	↖ 2	↘ 1	← 0	↗ 0	↗ 0
a	↑ 0	↑ 1	↖ 4	↘ 3	← 2	← 1
t	↑ 0	↑ 0	↑ 3	← 3	↖ 5	↘ 4
c	↑ 0	↗ 0	↑ 2	↗ 2	↑ 4	← 4
a	↑ 0	↗ 0	← 2	← 4	↖ 3	↖ 3

Sub1 g g a t
 | | |
 Sub2 g a a t

Sub1 g a - t
 | | |
 Sub2 g a a t

Sub1 g - a t
 | | |
 Sub2 g a a t

Score = (3 * 2) + (1 * -1) = 5