



R Girls School



title: "Generating Sequences Part 1"

author: "Type your name here"

date: "`r format(Sys.time(), '%d %B, %Y')`"

output: html_document

```
``{r setup, include=FALSE}
```

```
knitr::opts_chunk$set(echo = TRUE)
```

```
library(tidyverse)
```

```
``
```

KS3: Generating Sequences Part 1

Lesson objectives

Generating sequences using R code

Success criteria

- * Generate different sequences using R code

Keywords

- * sequence

- * term = the numbers in the sequence

- * nth term

Remember

Knit your R markdown document frequently. Knit for the final time when you have completed the lesson. This final output file will be the one your teacher marks.

Write your code in the code chunks.

You can run your R code chunk in the Markdown file by clicking on the little arrow on the right of the chunk.

Worked Example 1

First we will tell R to generate a sequence.

This is how you generate a sequence of numbers from 1 to 100 where the terms increase by 1.

```
``{r chunk1}
seq(from=1,to=100,by=1)
``
```

Use the above example R code in chunk1 to generate the following sequences. Remember to edit the numbers in the code.

Knit your document after each question to check your sequence.

Activity 1 Questions

Q1 Generate a sequence from 1 to 100 where the terms increase by 10

```
``{r chunk2}
```

```
``
```

Q2 Generate a sequence from 5 to 95 where the terms increase by 5.

```
``{r chunk3}
```

```
``
```

Q3 Generate a sequence from 3 to 399 where the terms increase by 4.

```
``{r chunk4}
```

```

Q4 Generate a sequence from 1 to 9 where the terms increase by 3.

```\${r chunk5}```

```

#### #### Worked Example 2

Now we will generate a sequence that starts from a number and goes up to the nth term, where the nth term is for example 10.

For example a sequence from 1 where the terms go up by 1 till the 10th term.

```\${r chunk6}```

seq(from=1, length.out=10, by=1)

```

Use the above example R code in chunk6 to generate the following sequences.

Knit your document after each question to check your sequence.

#### ##### Activity 2 Questions

Q1 Generate a sequence from 1 where the terms go up by 4 up to the 100th term

```\${r chunk7}```

```

Q2 Generate a sequence from 5 where the terms go up by 10 up to the 89th term

```\${r chunk8}```

```

Q3 Generate a sequence from 3 where the terms go up by 3 up to the 33rd term

```
```{r chunk9}
```

```
```
```

#### #### Worked Example 3

So the terms have increased by a particular number, but we can also decrease by a number and produce a backward sequence.

For example, we can sequence from 100 to 1 by -1

```
```{r chunk10}
```

```
seq(from=100, to=1, by=-1)
```

```
```
```

Use the above example R code in chunk10 to answer the following questions.

Knit your document after each question to check your sequence is correct.

#### ##### Activity 3 Questions

Q1 Generate a sequence that goes down from 50 to 0 where the terms go down by 5.

```
```{r chunk11}
```

```
```
```

Q2 Generate a sequence from 10 to -10 where the terms go down by 1.

```
```{r chunk12}
```

```
```
```

Q3 Generate a sequence that goes down from 20 to 10 where the terms go down by 2.

```
``{r chunk14}
```

```
``
```

KNIT YOUR DOCUMENT for the final time. This will be the version your teacher marks.

## THE END