

## Legacy ti-nspire

### The Legacy

Your school has been left £1,000,000 in the will of an ex-pupil ...

The ex-pupil made some conditions on how the money should be invested and used. These were:

- the school should benefit by spending part of the investment every year;
- the money should have a lifetime of at least 50 years.

This is an opportunity for you to investigate what happens when variables such as interest, inflation rates and the amount spent each year are changed. Investigating how a small change in interest rates can affect the total income over different time periods can be enlightening. Investigating the impact of spending large amounts of money up-front can also provide valuable insights.

- Why would the ex-pupil want the money to have a long-term impact?
- What is the importance of inflation in any model you try?
- Why would you invest the money?

Choose two models to compare. Think about:

- total expenditure for each model,
- benefits and limitations of each model,
- comparisons between models,
- how a change in inflation might change the recommendations,
- how a change in the time-scale for using the money might affect any recommendation.

What model would you recommend to ensure the best return for the school over a period of 50 years?



**Model A**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- the same (constant) expenditure each year.

**Model B**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- yearly expenditure increasing to take account of inflation.

**Model A**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- the same (constant) expenditure each year.

**Model B**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- yearly expenditure increasing to take account of inflation.

**Model C**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- yearly expenditure reducing to take account of inflation

**Model D**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- the expenditure each year increasing by a fixed factor.

**Model C**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- yearly expenditure reducing to take account of inflation

**Model D**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- the expenditure each year increasing by a fixed factor.

**Model E**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- expenditure reducing by a fixed amount each year down to a limit.

**The Legacy £1000000**

**The money should have a lifetime of  $\geq 50$  years.**

**The school benefits in some way (spends part of the investment) every year.**

**Model E**

Investigate a model based on:

- a fixed interest on your balance each year (4% say)
- expenditure reducing by a fixed amount each year down to a limit.

**The Legacy £1000000**

**The money should have a lifetime of  $\geq 50$  years.**

**The school benefits in some way (spends part of the investment) every year.**