Bank Account With Interest Rate

Fluxion Example Description

1 Problem Setting

Someone saves a portion of their pocket money each month and deposits the saved amount (Piggy Bank) at the end of the year on their savings account. The bank grants a certain fixed interest rate per year on the accumulated amount up that point.

2 Modeling

The balance increases each year by depositing the piggy bank money and with the interest accumulated on the current balance. So:

$$Balance' = PiggyBank + Interest \tag{1}$$

The pocket money is the amount saved up each month (total of 12 times in year) and placed in the Piggy bank. Afterwards, the interest is calculated

$$Interest = \frac{InterestRate}{100} * Balance \tag{2}$$

3 Variations and Further Suggestions

- Set a non-zero starting amount
- Investigate the effects of interest rate and pocket money amount on the credit balance by using sliders.
- Compare to the model for monthly payments with annual or monthly interest