



Lesson 6

Repay Loans Worksheet

K-W-L Chart

What I Know	What I Wonder	What I Learned

New Commands: make a list of all the new Python commands you learn throughout the lesson

Activity 1:

Read the program. Write down your predictions and comment the code on the worksheet.

```
1. print("Loan Payment Calculator: Even Principal Payments")
2.
3. loan = int(input("Loan Amount (GBP £): "))
4. term = int(input("Number of Payments (months): "))
5.
6. print("The annual interest rate is 5.4%")
7. rate = 0.054
8. balance = loan
9.
10. for i in range(1, term + 1):
11.
12.     principal_payment = round(loan / term, 2)
13.     interest_payment = round(balance * (rate/12), 2)
14.     print("Repayment", i, ":", principal_payment + interest_payment)
15.
16.     balance = loan - principal_payment*i
17.     print("Unpaid Balance:", balance)
```

Questions:

- What is the control structure?
 - What does 'range(1, term+1)' mean?
 - How to calculate the unpaid balance of the loan after each repayment?
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- Run the program and check against your predictions
 - Explain how iteration in the Loan Payment Calculator works and draw a flowchart.

**Activity 2:**

Task 1: Read the python script and summarize the mathematical expression. Write down on the worksheet.

Task 2: Based on the result returned by the Loan Payment Calculator, create a graph to present the loan repayments.

Activity 3:

Task 3: Modify the program to pay the loan repayments annually.

Task 4: The interest rate can be different across different repayment terms. Add the conditionals into the program you have created in the third task.

Term (Years)	Interest Rate
3	5.4%
5	5.6%
8	6.1%
10	5.8%

Activity 4:

Create a Loan Repayment Calculator application for even total payments. The loan repayment schedule looks like this:

Loan Amount: \$12,000

Interest Rate: 10%

Loan Terms: 6

Month	Unpaid Amount	Principal Payment	Interest Payment	Total Payment
0	\$12,000	/	/	/
1				\$2,058.74
2				\$2,058.74
3				\$2,058.74
4				\$2,058.74
5				\$2,058.74
6				\$2,058.74

Extension:

1. Research the concept of compound interest.
2. Write your own code that calculates the compound interest with user defined parameters