

Mathematics

# **Financial Mathematics - Downloadable resource.**

## **Lesson 1 of 4: Income Tax.**

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# Try this

What is 0% of £10,000?

What is 20% of £20,000?

What is 40% of £75,000?

What is 45% of £235,500?

What is the sum of: 0% of £12,500, 20% of £37,500 and 40% of £10,000?

Bearing in mind the title of the lesson, why have I chosen these percentages and figures? What does it relate to?



# Connect

**Tax** – A compulsory amount or percentage from an individual or firm to contribute to state revenue.

**Income tax** – A percentage-based tax placed on an individual's income.

What does income tax look like in real life?

0% for the first £12,500 earned (£0-£12,500).

20% for the next £37,500 earned (£12,500-£50,000).

40% for the next £100,000 earned (£50,000-£150,000).

45% thereafter (£150,000+).



# Connect

**How much income tax would you pay if you earned £27,000 per year?**

0% on the first £12,500.

20% on the following £14,500 (because  $£27,000 - £12,500 = £14,500$ ).

It now becomes a simpler problem, **the sum of: 0% of £12,500 and 20% of £14,500.**

Therefore, you pay **£2,900 per year in income tax.**



# Connect

**How much income tax would you pay if you earned £74,000 per year?**

0% on the first £12,500.

20% on the following £37,500.

40% on the following £24,000 (because  $£74,000 - £50,000 = £24,000$ ).

It now becomes a simpler problem, **the sum of: 0% of £12,500, 20% of £37,500 and 40% of £24,000.**

Therefore, you pay **£17,100 per year in income tax.**



# Independent Task

Using the tax rates mentioned earlier, how much income tax would you pay if you earned...

- 1) £9,000 per year?
- 2) £15,000 per year?
- 3) £24,500 per year?
- 4) £78,900 per year?
- 5) £190,000 per year?
- 6) £1,000,000 per year?

## A reminder

0% for the first £12,500 earned (£0-£12,500)  
20% for the next £37,500 earned (£12,500-£50,000)  
40% for the next £100,000 earned (£50,000-£150,000)  
45% thereafter (£150,000+)



# Explore

If you were the Chancellor of the Exchequer (the person who ultimately decides on whether tax rates change), would you increase or decrease income tax?

If you increased income tax for every band, would this lead to loads of extra money for the Government? Why might it not?

Would it be best to have a flat rate system (where everyone pays the same rate, regardless of earnings)?

