Teaching The Fundamentals: Level 2 Compound Interest

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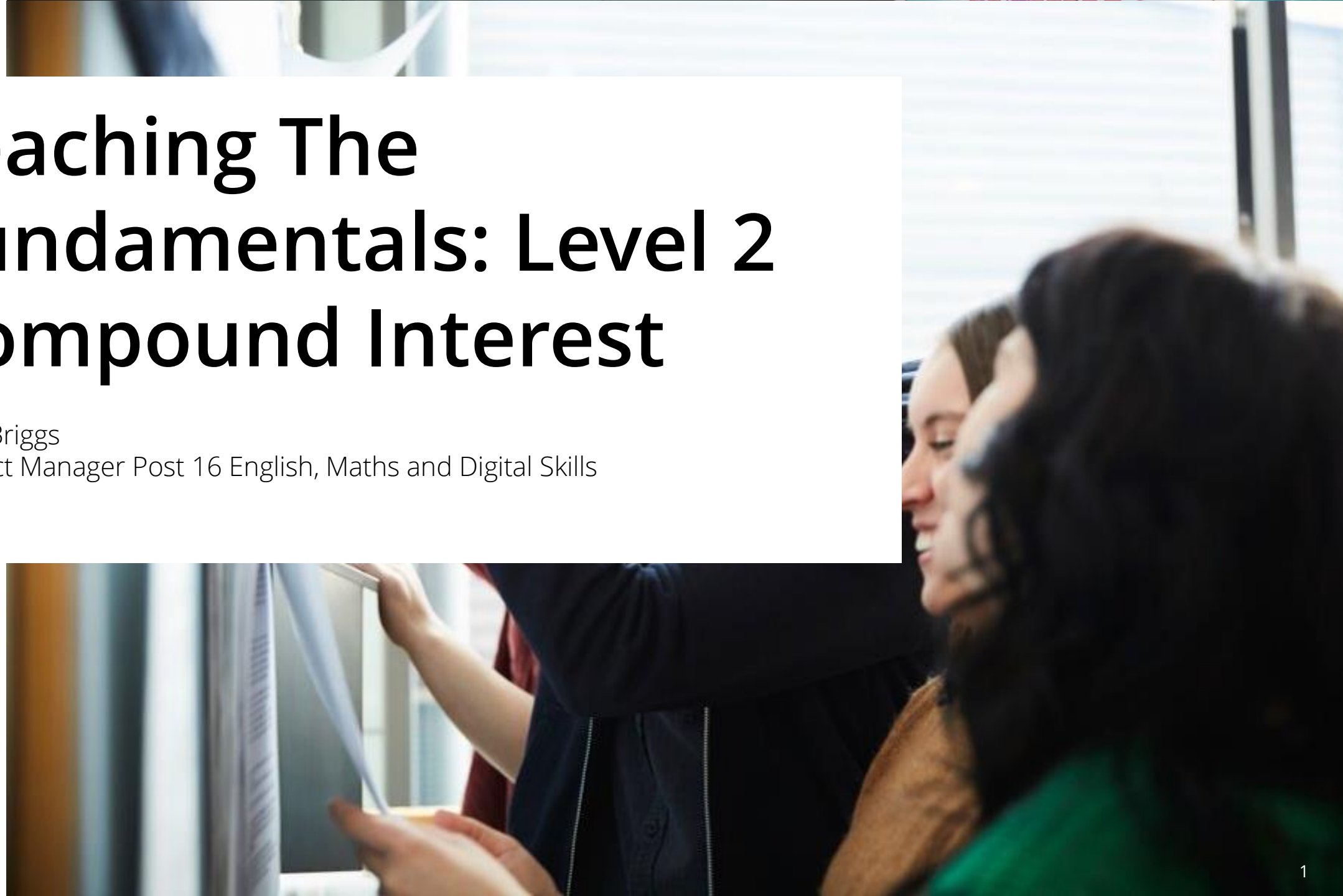

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Compound Interest

What does the Chief Examiner say?

- Working with compound interest is not well answered.
- Learners confuse this topic with simple interest.
- One initial correct step may be seen but then the second step is often incorrect.
- Centres are advised to practice working with constant interest rates over a period of time or with different interest rates over for each year but it is important that learners appreciate the compound aspect of this topic.

Compound Interest

Remember the Formula

- Learners would really benefit from remembering the formula for compound interest.
- We do allow for the build up method, but learners are more liable to make mistakes.

Joe sees this offer in his bank.

Open a new savings account today!

- Invest for 3 years
- Receive 2% compound interest
- Maximum investment £1000

Joe invests the maximum amount of money.

How much money will his investment be worth after 3 years?

Question	Process	Mark	Mark Ref	Evidence
Q1	Begins to work with compound interest	1 or	**A**	(100 + 2) ÷ 100 (=1.02) **OR** (1000 ÷ 100) x 2 (=20) **and** 1000 + 20 (=1020)
	Full process to find total amount	2 or	**AB**	e.g. 1000 x $(1.02)^3$ (=1061.208) Allow build up method
	Accurate figure	3	**ABC**	1061.20(8) **or** 1061.21
	Total marks for question	**3**		

Compound Interest

How to Use the Formula

- Let's look at the formula.

$$A = P(1 + \frac{r}{100})^n$$

  - A is the final amount (or the answer)
  - P is the original principal amount
  - r is the interest rate over a given period
  - n is the number of times the interest rate is applied (usually in years)

Compound Interest

How to Use the Formula

$$A = P(1 + \frac{r}{100})^n$$

- A is the final amount (or the answer)
- P in this question is £1000
- r is 2%
- n is 3 years

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Compound Interest

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- Maximum investment £1000

Joe invests the maximum amount of money.

How much money will his investment be worth after 3 years?

$A = 1000(1+2/100)^3$

$A = 1000(1.02)^3$

$A = 1000\ (1.02 \times 1.02 \times 1.02)$

$A = 1061.208$

$A = £1061.21$

Compound Interest

Ways to Practice: Numberless Problem-Solving

Carlos invests some money.

He receives compound interest on that money every year it is invested.

How can he work out how much interest he will earn over a set number of years?

Carlos invests some money.

He receives compound interest on that money every year it is invested.

He thinks that after a set number of years he will have saved a certain amount.

How can he check if he is correct?

Compound Interest

Ways to Practice: Scaffolded Questions

Carlos invests £4500 for 3 years.
He receives compound interest of 1.5% per year.

Carlos thinks the total of the money he invests and the interest will be more than £4750 at the end of the 3 years.

Is he correct?
Show why you think this.

a. What is the formula for compound interest?

b. How much is he going to invest?

c. How many years will he invest it for?

d. What will the interest rate be?

e. How much will his investment be at the end?

f. Is he correct? How do you know this?

Compound Interest

Remember to read the question carefully

Ryan takes out a 2 year loan of £16 000

He will pay 2.8% compound interest per annum.

Ryan wants to work out how much interest he will pay on the loan.

How much interest will Ryan pay?

Bill takes out a loan with an annual interest rate of 12.6%

He borrows £1500 for 3 years.

Work out how much money Bill will owe at the end of 3 years.

Mina invests £125 000 for 2 years.

The investment account earns 1.5% compound interest per annum.

After 2 years she withdraws £25 000.

How much money is left in her investment account?


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