



GRADE 8 · FUNCTIONS · HOMEWORK

MODELLING WITH A LINEAR FUNCTION

Today's goal: I can construct a function to model a linear relationship between two quantities, determine the rate of change and initial value of the function from a description, from two values, or from a table or graph and interpret the rate of change and initial value in terms of the situation it models.



Pick your peppers!

Everyone does Mild & Medium. Then climb as high as you can.



Medium
Digit the Fox



Spicy
Blaze the Dragon



Extra Spicy
Pi the Owl



REMEMBER Rate = difference PER unit. Initial value = the amount at $x = 0$, worked back to.



FAMILY CORNER

No need to remember this math yourself! Ask your student to teach you Mr DJ's example, then try the first Mild problem together.



MEDIUM

Digit the Fox: Stretch your brain.

- 1 A candle is 18 cm after 2 hours and 10 cm after 6 hours. Find the rate.

Answer

- 2 Same candle. How tall was it when lit?

Answer

- 3 Write the candle's model and check both readings.

Answer

- 4 How long until the candle burns out?

Answer

- 5 A gym costs £46 for 2 months and £82 for 5 months. Find the monthly fee and the joining fee.

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Answered 8, or 2 without the sign. A burning candle cannot have a positive rate.



🔥🔥🔥 **SPICY**

Blaze the Dragon: Bring the heat!

- 6 Interpret both numbers, with units.

Answer

- 7 Explain why the rate is a difference divided by something, not just a difference.

Answer



🧠🧠🧠 **EXTRA SPICY**

Pi the Owl: Big-brain challenge.

- 8 Mia builds a model from two readings and checks it on the first one, which fits. Is that enough?

Answer



How did this sheet feel? ☐ Easy for me ☐ Just right ☐ Made me think

Stuck? Watch Mr DJ explain it

Step-by-step video lessons on YouTube: [youtube.com/@MathWithMrDJ](https://www.youtube.com/@MathWithMrDJ)

Brain break: daily puzzles

Three new math puzzles every day, free: puzzles.mathwithmrdj.com