Bonfire Night maths activities for IGCSE and GCSE: KS3 / MYP

IGCSE Math Revision · MYP / KS3 (ages 11 to 14) · 5 November · Student sheet

Name _____ Class _____ Date _____

No calculator needed. Use π = 22/7 where a question says so.

Starter (5 minutes)

1. How many days are there from 5 November to 25 December?

2. A rocket's height is $h = 20t - 5t^2$ metres after t seconds. Find h when $t = 2$.

3. Write down the next two terms: 5, 11, 17, 23, ...

4. Sparklers come in packs of 12. How many packs are needed for 100 sparklers?

Main activity (30 minutes)

Task A: Flash and bang

You see a firework burst, then hear the bang a moment later. Take the speed of sound to be 340 m/s.

a. The bang arrives 3 seconds after the flash. How far away is the firework?

b. Another firework is 1.7 km away. How long does its bang take to reach you?

c. A rocket climbs 150 m in 5 seconds. Find its average speed.

Task B: Bonfire geometry

The bonfire is built in a field with a circular safety zone around it.

a. From the side, the bonfire is an isosceles triangle with a 40° angle at the top. Find each base angle.

b. Another triangle has angles of 35° and 85°. Find the third angle.

c. The safety zone is a circle of radius 14 m. Taking $\pi = 22/7$, find its area.

d. Spectators stand round the edge of the safety zone, 2 m apart. Taking $\pi = 22/7$, how many can stand round it?

Extension

1. Rockets cost £4 and Roman candles cost £6. Sam spends exactly £50 and buys at least one of each. In how many different ways can Sam do this?