

Lunar New Year maths activities for IGCSE and GCSE

IGCSE Math Revision · IGCSE and GCSE (Higher and Extended) · Student sheet

Name _____

Class _____

Date _____

No calculator needed.

Starter (5 minutes)

1. Find the remainder when 2030 is divided by 12.
2. Find the LCM of 10 and 12.
3. Find the HCF of 36 and 60.
4. Find the n th term of 8, 20, 32, 44, ...

Main activity (35 minutes)

Task A: The 12-year cycle

Number the 12 animals of the cycle 1 to 12 in the traditional order (Rat, Ox, Tiger, Rabbit, Dragon, Snake, Horse, Goat, Monkey, Rooster, Dog, Pig). In this activity, for the lunar year that begins in calendar year Y : work out $Y - 4$, divide by 12 and add 1 to the remainder to get the animal number.

- a. Find the animal number for the lunar year that begins in 2031.
- b. Which calendar years from 2001 to 2100 give animal number 1? How many are there?
- c. The years in part (b), continued for ever, form a sequence. Find its n th term, starting with 2008, and its 50th term.

Task B: Lanterns and lions

LCM and HCF problems.

- a. Red lanterns hang every 4 m along a street and gold lanterns every 6 m, both starting at 0 m. How often are a red and a gold lantern at the same place? How many such places are there from 0 m to 100 m?
- b. A lion dance team has 48 dancers and 36 drummers. They split into identical groups with no one left over. What is the greatest number of groups?
- c. Lanterns of three colours hang every 4 m, 6 m and 9 m, all starting at 0 m. Where do all three next meet?

Task C: Remainders and ratio

Work with remainders and ratio.

- a. Find the smallest positive number that leaves remainder 3 when divided by 12 and remainder 2 when divided by 5.
- b. 156 coins are shared between two children in the ratio 5 : 7. How many does each get?
- c. A string of beads repeats a pattern of 12 colours. Which colour (1 to 12) is the 500th bead?

Extension

1. Find the smallest number greater than 1 that leaves remainder 1 when divided by 7, by 10 and by 12.
2. A 10-year cycle and a 12-year cycle start together. After how many years do they next start together, and how many times has each cycle been completed?