

Nova's Night Sky: The Science of Bonfire Night

Learning objective: To understand the origins and safety considerations of Bonfire Night, and to analyze the chemical and historical significance of the celebration.

Nova the Owl is preparing for a night of stargazing while others enjoy the festivities. Read the following statements and decide whether they are 'True' or 'False'. If you choose False, you must provide a brief justification explaining the correct historical or safety fact. Use the word bank to help you construct your explanations.

Word bank: Guy Fawkes · Parliament · 1605 · Safety · Chemical reactions · Gunpowder · Reflective · Tradition

1. 1. True or False: The Gunpowder Plot of 1605 was a successful attempt to destroy the Houses of Parliament. Justify your answer. (2 marks)

2. 2. True or False: Fireworks create brilliant colors in the sky due to simple heat energy alone. Explain why this is scientifically incomplete. (2 marks)

3. 3. True or False: It is recommended to stand as close to the bonfire as possible to ensure you can see the sparks clearly. Explain why this is incorrect. (2 marks)

4. 4. Compare and contrast: How do the historical reasons for Bonfire Night differ from the modern-day ways families celebrate the event? Justify your perspective. (3 marks)

5. 5. What might happen if the chemical compounds inside a firework were mixed incorrectly? Explain the importance of precision in science. (2 marks)

6. 6. Imagine you are organising a community firework display. Create a budget plan for safety equipment: If you have £50, and you buy 4 fire blankets at £8.50 each, how much money is left for other supplies? Show your math. (2 marks)

Draw: Draw a scientific diagram of a firework exploding in the night sky. Label the parts of the firework using terms like 'fuse', 'elevator charge', and 'stars' (the chemical pellets that create color).



Extension challenge: Nova asks: 'If we celebrate the failure of the plot to destroy Parliament, is it right that we still use fireworks that contain gunpowder?' Write a persuasive paragraph justifying whether you think the tradition should continue in its current form or be reimagined.