



Practice STEM Scholarship paper

Name:

School:

King's Ely
STEM Scholarship

Please read **all** parts of this paper before starting.

This is a scholarship paper. The questions may seem rather strange, but please answer them in whatever way you think most effective.

You will be given credit for effective explanation; explain everything as thoroughly as you can.

Use additional paper if you wish

STEM people solve practical problems.

Imagine yourself in the situation below. Some possible problems are detailed. Read them all and think carefully.

Situation:



An Aeroplane Journey



Possible Problems:

- I. Chicken in the in flight meal is contaminated with harmful bacteria
- II. A loud grinding noise is heard from the aeroplane on take off
- III. The pilot becomes gravely ill
- IV. The automatic navigation system fails.

1. **Choose a Problem**

(a) I am choosing problem number

(b) **Explain** a possible cause of the problem you have chosen above.

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2. **Science** – *How are you going to find out about the problem?*

- (a) **What** ideas in **Science** might you use to begin to investigate the problem you have chosen and explained above?

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- (b) **Suggest** an **experiment** you could do or have done in a laboratory that might help you find out more about the problem. Draw a diagram to help you if you wish

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(c) **How** would your experiment help solve the problem?

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3. **Maths/Computing** – *How will you work out what the experiment is telling you?*

(a) **What Mathematical and/ or computing processes** might you use to help you analyse the data from the Science experiment you have just suggested?

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(b) **How** would these mathematical and or computing processes help you analyse your data?

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(c) **What** do you think the results of your experiment might be?

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End