



## KS3 Science Module Four: Let's Talk



During this module you are training to become a technician for the rock band 'Effervescence'. In order to be a great technician, you need to demonstrate that you understand electricity and its uses. You are working towards completing a work-related report that will prove to the band that you are the best technician to support them on their world tour next year. Your teacher will tell you when to concentrate on each section, but you can start as soon as you like. Make sure you know which level you are aiming for. Use the level ladders to help you.

**Task 1: Write a job description for a band technician. Outline the main tasks and science knowledge required to do the job effectively.**



**Level 3:** List 3 skills that are essential for a band technician

**Level 4:** Describe what the job involves and the science knowledge required.

**Level 5:** Explain how the science links to the roles involved in the work.

**Level 6:** Describe how the different aspects of the science are applied specifically to the different techniques and skills involved in being a band technician.

**Task 2: Draw a graph and write a conclusion to the electrical test standard procedure about the relationship between current and voltage.**

**Level 3:** With help draw a graph and state what it shows.

**Level 4:** Draw a graph independently and describe the pattern in the graph.

**Level 5:** Draw a line of best fit and outline the relationship between current and voltage. Explain each of these variables and the effect they have in your DT board game.

**Level 6:** Indicate any outliers on your graph and calculate the gradient of the graph, relating it to the variables *e.g. for every 0.5V increase in voltage, the current increases by ...*

**Task 3: Outline how electrical circuits work and the risks involved in working with electricity. Make sure you include the following key terms: voltage, current, energy transfers.**



**Level 3:** State how to set up an electrical circuit.

**Level 4:** Define each of the key terms listed above and describe the part they play in an electrical circuit

**Level 5:** Explain why each part of a circuit is necessary.

**Level 6:** Compare the rules for voltage and current in series and parallel circuits.

**Task 4: Evaluate the data collected and the techniques you used from the wires investigation. Outline how your data supports ideas about resistance.**

**Level 3:** Make a relevant comment about how well your experiment went.

**Level 4:** Describe how reliable your data is.

**Level 5:** Explain what you would do to improve your experiment, if you were to repeat it.

**Level 6:** Relate the scatter in your graph to the reliability of your data. How confident are you with your techniques and your results?

**Task 5: Draw a simple circuit diagram to show how to set up the stage for a concert. Use conventional circuit symbols and explain your choice of circuit.**



**Level 3:** With support, draw a simple diagram using some of the correct symbols.

**Level 4:** Draw an accurate circuit diagram and describe the type of circuit you have chosen.

**Level 5:** Explain your choice of circuit.

**Level 6:** Provide alternative circuit diagrams and compare them to explain the best choice for the concert.