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| Stories |
| Just off outdoors |
| Electric circuit |
| Electricity is dangerous |
| Cotton batteries |
| Sunshine is free |
| Circuit training |
| Hot under the bonnet |
| What is electricity? |

1. Where does the Space Station get its electricity?
2. What happens when you turn the switch on?
3. Electricity carries lots of what?
4. That means it can be what?
5. Most types of battery are what?
6. What do solar panels do?
7. What does electricity from your own solar panel cost?
8. What is a battery?
9. The circuit has a battery, a switch and what else?
10. Heat is a form of what?
11. An electric heater changes electrical energy into what?
12. Heat is often a sign that all your energy is not doing what?
13. Where would you like all the energy stored in petrol to get to?
14. What fraction of the energy in petrol gets turned into useless heat?
15. Why is energy useful?
16. Why is electricity useful?
17. Name three other kinds of energy that electricity can be changed into.
18. Give one example of an appliance and the energy it changes electricity into.
19. What is electrical energy more often called?

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| Stories |
| Circuit training (part 2) |
| Circuit training (part 3) |
| Beefy batteries |
| Get up and go |

1. What’s the first thing to learn about electricity?
2. What happens if you stop it flowing?
3. What is a circuit?
4. What happens when you open a switch?
5. What can the electricity do when you close the switch?
6. So it passes its energy to what?
7. Part 3 of Circuit training has the same three components as Part 1, but we’ve now ------ the switch.
8. You could make this simple circuit even simpler, but why wouldn’t you?
9. When the switch is open there is a ---.
10. What makes ordinary car batteries heavy but not very big?
11. What’s the battery’s main job in a petrol car?
12. In a petrol car, where does the energy come from that makes the car move?
13. In an electric car, where does the energy come from that makes the car move?
14. What does it take to move?
15. If you walk where does the energy come from?
16. If you take a plane where does the energy come from?
17. If you drive an electric car where does the energy come from?

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| Stories |
| Electric sky |
| More lights, less light |
| More lights, less light (part 2) |
| What is electricity (part 2) |

1. What is lightning?
2. Why do you get injured or killed if you’re struck by lightning?
3. What should you do if you’re in a car during a lightning storm?
4. What should you not touch in a car or a house when lightning’s nearby?
5. What do you not want to be if you’re caught in a lightning storm?
6. In the simple electric circuit, what could you replaced the light by?
7. If you want it to work, the circuit has to be --------.
8. Why does it not matter where you put the second bulb in the circuit?
9. When you have two bulbs in a circuit what is shared between them?
10. The more bulbs in a circuit the ---- energy each gets.
11. One kind of ------ can be changed into another.
12. What does a power station create?
13. A power station changes some other kind of ------ into electricity.
14. Give two examples of other kinds of energy that are changed into electricity in power stations.
15. What does a power station do with the electricity it makes?

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| Stories |
| More lights, same light |
| Operation Ouch! |
| Solar lamps save lives |
| Wee can help |
| Going up the ladder |

1. What do we need to get to each bulb to get two to shine as brightly as one?
2. Where is the energy coming from?
3. Light is a form of what?
4. So how can you get twice as much light?
5. What is an electrical component?
6. What lesson did Troy learn from his bad experience with electricity?
7. What is the electrical energy from the solar lamp stored in?
8. How many people have no mains electricity?
9. What does a solar lamp cost to run?
10. What’s another benefit?
11. What does this clever way to charge a mobile phone use?
12. What do they do with it?
13. What kind of thing turns it into electricity?
14. What has Andy been installing on his farm?
15. How much electricity will they produce when he and Roger have finished?
16. How does Andy get out of going up on the roof?

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| Stories |
| Conductors and insulators |
| Conductors and insulators (part 2) |
| Series problem |
| Series problem (part 2) |

1. How does an electric switch work?
2. What do we call a material that allows electricity to pass through it very easily?
3. What are most of them made of?
4. What do we call a material that doesn’t allow electricity to pass through it easily?
5. Why do electric wires have a plastic sleeve around them?
6. Why does electricity not pass through a switch that’s open?
7. What does it mean when we say air is an insulator?
8. Why can’t electricity from the mains pass through air?
9. But if electricity has enough energy it can do what?
10. What natural form of electricity has enough energy to pass through air?
11. We can get any number of bulbs as bright as we want if we just connect more ---------.
12. What was my favourite Christmas card?
13. What would always happen on Christmas Eve?
14. What did my Dad keep spares of?
15. So you might think fixing a ------ bulb would be easy?
16. What’s a shorter expression that means ‘coming one after another’?
17. What do we call an electric circuit in which everything is connected in series?
18. If twenty light bulbs are connected in series and one fails, what happens?

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| Stories |
| Danger, high voltage |
| Parallel paths |
| Parallel paths (part 2) |

1. What does voltage tell you about electricity?
2. Why won’t you get an electric shock from an AA battery?
3. Why can you get a shock on your tongue from a PP3 battery but not on your skin?
4. How much more energy has mains electricity than an AA battery?
5. What’s the voltage of a lightning bolt?
6. The higher the voltage, the more --------- the electricity.
7. If you connect light bulbs in series, you can get enough brightness if your electricity has enough -------.
8. But there is still a problem when you connect things in series – what is it?
9. What is the solution?
10. All the circuits we’ve looked at so far, the electricity flowed through them everything in what way?
11. They were connected -- ------.
12. In this new circuit the electricity goes through the bulbs how?
13. It’s like each bulb has what?
14. In this kind of circuit, if one bulb fails what happens to the others?
15. What is the name for this kind of circuit?
16. In an electric car, where does the energy come from?
17. What piece of machinery makes the wheels go round?
18. What’s the first advantage, mentioned in the story, of an electric car over a petrol car?
19. What’s the second advantage?
20. In a petrol car, four fifths of the energy stored in petrol is wasted as what?
21. In an electric car, what fraction of the energy stored in the battery makes the wheels go round?
22. Electric cars are much more what than petrol cars?

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| Stories |
| Electric cars |
| What does efficiency mean? |
| Down from the roof |

1. What does it mean when we say electric cars are much more efficient than petrol cars?
2. What is the precise meaning of efficiency in science?
3. In a car, efficiency is the fraction of the energy used that does what?
4. A petrol car is around 20% efficient, but an electric car is around --% efficient.
5. Andy made the tea in an electric kettle, but what kind of energy made the electricity?
6. What was the danger if Tim Peake had repaired the solar panels in daylight?

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| Stories |
| Dawn of solar cells |
| Making muscles move |
| Electrical word meanings |

1. Most methods of making electricity damage what?
2. What do solar cells convert into electricity?
3. Solar cells are expensive and -----------.
4. What fraction of the sunlight energy falling on a solar cell is converted to electricity?
5. What unusual material is Dawn looking at to make solar cells?
6. If you decide to move your leg, your brain sends an electrical signal to your what?
7. Electrical signals travel from your brain to what, then down long nerves in your legs?
8. When you move your arms, the electrical signal goes through the ------ cord.
9. If your backbone gets broken what usually gets damaged too?
10. What does that often mean for your arms and legs?
11. But the muscles can be made to move using what from outside the body?
12. Electricity is a form of what?
13. A battery is a source of what?
14. Voltage is a measure of what?
15. Give an example of a material that makes a good conductor.
16. Give an example of a material that makes an insulator.
17. What is a series circuit?
18. If a device fails in a parallel circuit, what happens?

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| Stories |
| Electric vehicle |
| Car of the future |

1. What’s the make and model of Andy’s electric car?
2. What does he use to charge it when the sun is shining?
3. Andy mentions four advantages of electric cars. State two of them.
4. Electric cars can have reduced emissions of what?
5. But only when the electricity that charges them has not been generated from what?
6. So we need to charge electric car batteries with what kind of energy?
7. Not long ago how far could an electric car go before its battery had to be recharged?
8. So what did their drivers worry about?
9. What is the name for that worry?
10. Two other problems are mentioned; state one of them.
11. What could you not do if you had one of those cars?
12. What’s the first big improvement?
13. What is the second?
14. How far, when the story was written, could the Tesla Model S travel on a single charge?