|  |
| --- |
| Stories |
| Just off outdoors |
| Electric circuit |
| Cotton batteries |
| Sunshine is free |
| Fireworks on Jupiter |
| What is electricity? |
| Circuit training |

1. Where does the Space Station get its electricity?
2. What happened to the room when Alex turned the switch on?
3. Most types of battery are what to the environment?
4. What do solar panels do?
5. After you’ve bought solar panels, what does the electricity from them cost?
6. What is causing the blue lights on Jupiter that look like a firework display?
7. What is electricity?
8. Why is electricity so useful?
9. What kind of energy does a toaster change electrical energy into?
10. What kind of energy does a buzzer change electrical energy into?
11. What is one word for electrical energy?
12. What is a battery?
13. How are the battery, the switch and the light bulb joined together?

|  |
| --- |
| Stories |
| Circuit training (Part 2) |
| Circuit training (Part 3) |
| Electric sky |

1. What happens if you stop electricity flowing around and around?
2. What do we call a complete loop?
3. How does a switch stop electricity flowing?
4. What happens when you close a switch in an electrical circuit?
5. What do you always need so electricity can flow around it?
6. What’s the difference between the circuits shown in Part 1 and Part 3 of Circuit training?
7. How could you make the circuit slightly simpler?
8. When the switch is open there is a ---.
9. What is lightning?
10. There is so much what in a bolt of lightning?
11. Where should you go if there is lightning near you?
12. What should you do if you’re in a car?
13. What should you not touch if there is lightning outside?
14. Where should you not shelter?
15. Why not?

|  |
| --- |
| Stories |
| More lights, less light |
| More lights, less light(Part 2) |
| What is electricity (Part 2)? |

1. What does your circuit have to be if you want your bulb to light up?
2. What does your circuit have to be, if you want your robot to do what it does?
3. Why does it not matter where in the circuit you put a second bulb?
4. What is the brightness of the bulbs like when you have two in the circuit compared to only one?
5. The energy in the electricity is now being ------ between the two bulbs.
6. So how much energy is each bulb getting now, compared to with only one in the circuit?
7. How much energy would each bulb get with five in the circuit, compared to with only one?
8. What is a power station?
9. What does a coal power station create electrical energy from?
10. What does a wind farm create electrical energy from?
11. What do all power stations have in common?
12. Where do they send it?

|  |
| --- |
| Stories |
| More lights, same light |
| Operation Ouch! |
| Solar lamps save lives |
| Wee can help |

1. How can we get two bulbs to shine as brightly as one?
2. Where does the energy come from?
3. Light is a form of what?
4. If you want two buzzers to sound as loud as one you need to provide ----- as much electrical energy.
5. An electrical component is one part of an electrical -------.
6. What has Troy’s bad experience taught him about electricity?
7. What does the solar panel make electricity from?
8. Where is the electrical energy stored?
9. How many people in the world have no access to mains electricity?
10. What do the solar lamps cost to run?
11. Why are they safer than kerosene lamps?
12. With what have scientists found a way to charge your mobile phone?
13. What kind of creature is making the electricity in the battery?
14. What are they making it from?

|  |
| --- |
| Stories |
| Going up the ladder |
| Conductors and insulators |

1. What has Andy been installing on his farm?
2. Do a little sum to calculate how much energy the solar panels deliver on the Space Station.
3. How do Roget and Tim Peake stay safe when they’re working on the solar panels?
4. If Roger is Tim Peake, what is Andy?
5. How does an electric switch work?
6. What is the name for materials that allow electricity to pass through them easily?
7. What are most good conductors made of?
8. What is the name for materials that don’t allow electricity to pass through them easily?
9. Why do electric wires have a plastic sleeve around them?
10. Why does electricity pass easily through a switch when it’s closed?
11. Why can’t electricity pass through a switch when it’s open?

|  |
| --- |
| Stories |
| Conductors & insulators (Part 2) |
| Series problem |
| Series problem (Part 2) |

1. Is air a conductor or an insulator?
2. If something is an insulator what does that mean?
3. You can switch lights off because mains electricity hasn’t enough energy to pass through ---.
4. If electricity has enough ------ it will pass through an insulator.
5. What’s the one form of electricity that has enough energy to pass through air?
6. With more bulbs in a circuit how do we get them to shine as brightly as with just one?
7. With what did my parents decorate the Christmas tree?
8. What always happened on Christmas Eve?
9. What did my Dad keep a supply of?
10. So you’d think he could just do what?
11. What’s the two-word phrase in English for ‘coming one after another’?
12. If the components of an electric circuit are connected together one after another what do we call the circuit?
13. What happens if one bulb in a series circuit fails?
14. Why did my Dad not know which one had failed?

|  |
| --- |
| Stories |
| Parallel paths |
| Parallel paths (Part 2) |
| Danger, high voltage |

1. What is there no problem with, if you connect light bulbs in series?
2. What *is* there a problem with, if you connect light bulbs in series?
3. To solve this problem you need to use a different kind of electrical -------.
4. In a series circuit, electricity flows through components, one after -------.
5. With this new circuit how does electricity flow through the light bulbs?
6. With this new type of circuit what happens to the other bulbs if one bulb fails?
7. Why does that happen?
8. How do we say the components are connected when each has its own complete circuit?
9. What do we call this type of electrical circuit?
10. What does voltage tell you about a battery?
11. Why won’t you get a shock from an AA battery?
12. Why can you get a shock from a 9-volt battery on your tongue but not on your skin?
13. How much more energy has electricity from the mains than from an AA battery?
14. Why does lightning need high energy?
15. What is the first factor in how dangerous electricity can be?
16. What is the second factor in how dangerous electricity can be?

|  |
| --- |
| Stories |
| Dawn of solar cells |
| Electric vehicle |
| Electrical word meanings |

1. There are two problems with the solar cells we make now; state one.
2. How much of the light energy that falls on a solar cell is converted to electrical energy?
3. Dawn is doing research on a new type of solar cell, made from what?
4. What make is Andy’s electric car?
5. How does he charge it up on sunny days?
6. Andy mentions four advantages of electric cars; state two of them.
7. What’s the effect on greenhouse gases if the electric car’s electricity is from fossil fuels?
8. Why does Andy use the solar panels on his farm to charge his electric car?
9. What is electricity?
10. What is a battery?
11. What is voltage?
12. Give two examples of conductor.
13. Give two examples of an insulator.
14. How are the components connected in a series circuit?
15. How are the components connected in a parallel circuit?