Blog PROGRESS REPORT Weekly Total

/18

TERM 3 During the following class in Mathematics, Science and Technology you need to complete the following progress report and place on your BLOG.

1. **Group rolls and Evaluation of each students contribution (6 marks)**

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| --- | --- | --- | --- |
| **Student name** | **Title and description of students role.** | **Contribution to STEM project this week** | **Marks** |
| Aiden  Sloots | Component Collector and Appliance Affixer:   * Collected any components that the group required to construct the circuit * Affixed wires, switches and the fan to the house using masking tape | This week I contributed to the group by:   * Collecting the house from M3.1b when it was time to create the circuit * Attached the electrical components to the house using masking tape. * Assisted the group with any concerns or questions regarding the IntoScience lesson on Monday | **2** |
| Ky Broome | Grand Photographer and Thinker. Stripping and wire cutting apprentice.   * Helped to stripped and cut wires with the help of Izaak. * Photographed some videos to be posted on the Stem blog. * Took some photographs for the Stem blog. * Looked at possible switches to be placed in the house but Izaak decided to make his own that work great. | This week I contributed to the team/group by:   * Rotated the collection of the house with Aiden. * Stripped some wires ready to be attached to one another to allow the components to work on the house. * Tried to help the team by discussing the possible switches to buy from Jaycar but we decided against this option. | **2** |
| Izaak  Cerneaz | Wire stripping expert/Team Leader   * striped most wires * To help with any tasks that people are struggling with such as Intoscience | This week I contributed by:   * I stripped the wires because Aiden and Ky couldn’t * Helped Ky with some IntoScience questions * Assisted in constructing the house circuit | **2** |

1. **Identify what you have completed in class this week on the STEM Project. (6 marks)**

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| **Describe TWO :**  Problems/difficulties you encountered this week.  (In Mathematics, Science/Technology/group work/resources) | 1. The first difficulty that I faced this week was that the switch that I installed was failing to operate the fan properly. 2. The second challenge that I faced this week is that the first switch that was created had to be held down in order to work, making it extremely impractical. | **Marks**  **2** |
| **Explain** for both problems:  What did you did to resolve this problem. | 1. I solved this problem by systematically breaking down the circuit to identify the problem. First of all, I removed the fan from the circuit and connected it directly to the transformer. When activated, the transformer successfully supplied the fan with power, showing me that the fan was not the problem. Next, I removed the switch from the circuit and attached it to the transformer and fan using pre-made wires with alligator clips. When activated while a current was fed from the transformer, the switch successfully activated the fan, identifying that the problem in the circuit is located in the wiring rather than the components. 2. In order to solve this problem, I, with the help of group, developed a new switch in which the paper clip is slid onto the split pin rather than held down. This means that electricity can flow without having to have someone constantly hold down the switch. | **2** |
| **SKILLS Learnt**  **Describe two** new skill you have learnt this week in working on your STEM project. | 1. The first skill I learnt this week is the ability to strip the rubber casing off of wires. This is done by using a ‘wire stripper’ to cut into through the rubber insulation and pull it off. This is difficult at first, as not enough pressure will cease to cut the insulation, while too much pressure will split the entire wire. The stripping of the insulation exposed the wire within, allowing for connection to other wires and components. 2. The second skill I learnt this week is the ability to create an electrical circuit, from scratch, without the use of alligator clips, i.e.: Having to strip the insulation from wires to allow connection, rather than connecting components through alligator clips. This meant that our circuit had little to no room for error, as a wire strip gone wrong could cut the wire shorter than planned, causing for a modification to the circuit design. | **2** |

1. **Blog Presentation – Information and presentation of your BLOG. (6marks)**

Marks will be awarded for any of the following additions to your Blog this week.

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| --- | --- | --- |
| **Blog Information** |  | **Mark** |
| Copies of individual /group work  Images/ Videos of your work/ Attempts to answers weekly Focus question | Focus Questions also found on Lesson 1 Blog  Stem Question 4: What is voltage and current?  Current and voltage are two interrelated characteristics of electricity. Although they are similar in ways and have large impacts on each other, they are two completely separate things.  Voltage is the power or strength of the electrons and is measured in volts. A higher voltage means higher power and a higher risk when handling electricity. Voltage decreases as resistance increases, such as when more components are added to the circuit, as the electricity has to push through each component, losing its strength. Voltage will always decrease in a series circuit as the electrons have to flow through each component consecutively. However, in a parallel circuit which every branch only has one component, the voltage would remain constant. This is because, unlike the series circuit, the voltage doesn’t have to share itself amongst multiple components in the same branch.  Current is the strength or ‘push’ of the flow of electrons, rather than the strength of the electricity itself. Current is measured in amperes or amps, and unlike voltage, current remains constant in a series circuit. This is due to a series circuit having only one path to flow down, meaning it is unable to split itself amongst conductors. Due to a parallel circuit having multiple branches for the electrons to flow down, current is shared equally among the branches in a series circuit.   Stem Question 5: How do we measure voltage and current in a circuit?  Voltage and current can be measured in a circuit using a voltmeter and an ammeter respectively.  A voltmeter must be placed in parallel to the component it is measuring. This is because the voltmeter works by measuring the voltage at the input to the component and also the output. From this the voltmeter calculates the voltage and displays it on its dials as volts. (V)  Current is measured using an ammeter and it must be placed in series with the component(s) in order to measure the current. Current is the flow of electrons and therefore the ammeter needs to be placed in circuit so that it can measure the current as the flow passes through it. The ammeter then displays this on its dial as amperes or amps. (A) | **3** |
| ICT: Hyperlinks, User friendly blog/ Videos of group work/ Links to research | The Squad:  <http://izaakstemblog.weebly.com/>  <http://kystemblog.weebly.com/>  [http://slootsstem.weebly.com/](http://slootsstem.weebly.com/week-three)  Series and Parallel Circuits:  <https://www.youtube.com/watch?v=TJhPBxrCOXk>  IntoScience  <http://intoscience.com/>  Small Blueprinter:  <http://www.smallblueprinter.com/sbp.html> | **3** |