# Motorised Vehicle Worksheet

Name: _____

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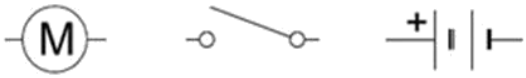
|---|---|
| Name these electrical parts:<br>     <br>..... ..... ..... ..... | |
| Draw your circuit using these circuit symbols, and using lines to represent the wires. Label the components.<br>  | |
| Is metal an insulator or a conductor? | |
| Is plastic an insulator or a conductor? | |
| What could happen if you short circuit your battery? | |
| What will happen if you leave the circuit switched on for a long time? | |
| If you measure a time T to travel a distance D, how do you calculate the average speed? | |
| What was the average speed of your vehicle? | |
| Which of your items are acting as bearings? | |
| Why does the pulley need to be a tight fit on the axle? | |

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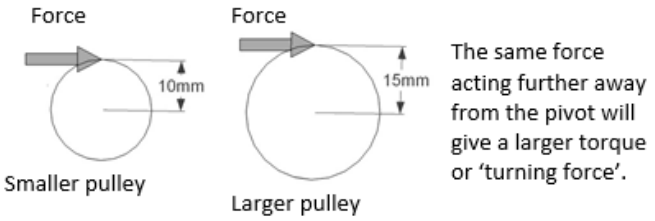
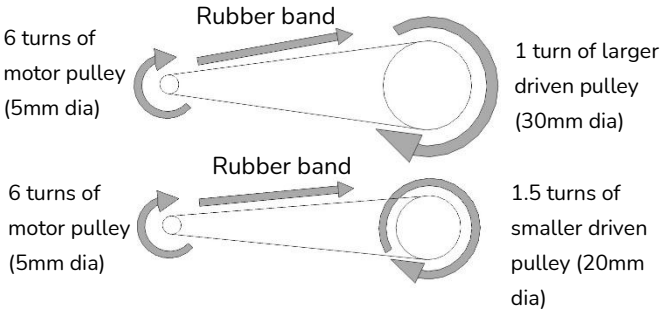
|---|---|
| **Why do the wheels need to be a tight fit on the axles?** | |
| **If your vehicle goes backwards, what can you change to make it go forwards?** | |
| **Which goes faster, a vehicle with a larger driven pulley or one with a smaller driven pulley?** | |
| **Which goes up steeper slopes, a vehicle with a larger driven pulley or one with a smaller driven pulley?** | |
| **EXTENSION QUESTIONS** | |
| **Why do cars have rubber tyres?** | |
| **If you were cycling up a steep hill, would you choose a gear which gives you low speed and high torque ('turning force') or high speed and low torque?** | |
| **Explain why the size of the driven pulley affects the hill climbing ability of your vehicle.**<br>  | |
| **Explain why the size of the driven pulley affects the speed of your vehicle.**<br>  | |