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| ELECTRONICS |
| *Complete 20 stars* |
| Rating | No | Exercises of Electronics | Sign |
| \* | 1 | Make a collection of newspaper and/or magazine articles on recent developments in electronics. |  |
| \*\* | 2 | Design and build a simple circuit to control the brightness of a bulb with a selection of resistors, or a variable resistor |  |
| \* | 3 | Make a small wall chart showing how we can identify carbon resistors by their colour code. |  |
| \* | 4 | Collect, mount and label 5 examples each of conductors, and insulators. |  |
| \*\* | 5 | Describe, with the aid of diagrams, the construction of a crystal microphone and a moving-coil loudspeaker. |  |
| \*\*\* | 6 | Build a simple working crystal (or one diode) radio set. |  |
| \*\* | 7 | With the aid of black diagrams, explain how a simple radio receiver works, including tuning, demodulating, and audio frequency amplifying. |  |
| \*\* | 8 | Draw a block diagram of a simple radio transmitter and explain in your own words what happens at each stage. Include words like “carrier wave,” “frequency”, “wavelength” and “modulated”. |  |
| \* | 9 | Draw and name the symbols of at least 10 commonly used electronics parts. |  |
| \* | 10 | Find out what L.E.D. is. Demonstrate one working, using a torch cell and the appropriate resistor. |  |
| \*\*\* | 11 | Build a small 1 transistor amplifier which can be added to your crystal. |  |
| \* | 12 | Write a short account in your own words, of someone who was famous in developing radio communications. |  |
| \*\*\* | 13 | Design and build a simple burglar alarm using a Reed switch, relay, battery, and some sort of alarm, e.g. bell, buzzer, light. |  |
| \*\*\* | 14 | Find out what termistors do. With a thermistor, relay, battery, design and build a firm alarm. |  |
| \*\* | 15 | Collect and name at least 10 different components found in a radio or TV set. |  |
| \* | 16 | Demonstrate to your teacher that you can use a multimeter to measure voltage, current and resistance. |  |
| \*\* | 17 | Demonstrate your soldering skills by soldering some small nails into an interesting geometric shape. |  |
| \*\*\* | 18 | Find out what a bridge rectifier is. Construct one using diodes and demonstrate it working, using a power pack from school which has a low voltage A. C. supply. |  |
| \*\* | 19 | Make a wall chart showing how a transistor functions. |  |
| \*\* | 20 | Using batteries, bulbs and switches build and demonstrate an AND gate and an OR gate. |  |