

# Self-build play equipment for children

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## Self-Build Play Equipment For Children

The concept of the project is to develop such playing equipment for the children through which energy can be generated to cut down the energy bills of the households. Simple modifications and additions to the common playing equipment for the children can make them generate energy [2].

These modifications include the installation of simple electrical and mechanical devices such as electronic controllers and generators on the playing equipment. Some of the playground equipments which can be used to utilize energy and which can be offered to the customers are explained in the following paragraphs.

A merry go round is a playing equipment very commonly seen in parks and is also one of the children's favorite. By installing simple electronic controllers, wind power generators and speed-increasing gearboxes a portion of the kinetic energy generated by the children can be converted into electrical power [7]. The electric power produced can be stored in batteries. These batteries can be then utilized to light up the house at night preferably through LED lights. The product can be designed to power the lighting of the whole house for more than a week with only a few hours of play by the children. The product can be sold as a complete package consisting of the playing equipment coupled with the generator assembly, high performance LED lights, batteries and the wires to install the electrical circuit. The product can be a very good investment because the payback is very quick.

Another simple but innovative playing equipment can be a 'tow down zip-line' in which children can pull themselves down from a height on platforms suspended on a rope. Two pulleys on either side of the rope are rotated as the children grab and pull the rope while going down. Generator can be

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coupled with one of the pulley to generate electric power which can be utilized to power lighting in the same manner as the merry go round. This product is new for the children as it is not very commonly seen in the parks and thus can attract more customers. The height of the rope can be kept low to ensure safety of the playing children. The product can be sold in the form of ropes and pulleys along with generator and the lights. The whole system can be assembled easily at site of installation.

When the children play with the playing equipments, they generate kinetic energy which can be harnessed for useful purposes. Another useful playing equipment which can be used to get electrical power is the swing set. Swing set is the most common playing equipment used by children. The principle of generating power is the same by coupling the swing with electric generator and using the generated electricity for lighting purposes. LEDs and the circuit can be sold along with the product.

A simple application of the energy generated by the children while playing is utilizing the see-saw as a pump. The children while playing can pump underground water through the see-saw. The working principle of the see-saw can be the same as a hand pump which utilizes a cable and piston assembly for pumping water [1]. The piston and cable assembly can be coupled with the see-saw and see-saw pump can be set up for children after boring the ground for underground water. The see-saw pump can be utilized to water the lawn and garden and thus the overall energy bills can be reduced [6].

These simple playing equipments can be developed as a source of providing additional power sources to households and can serve as playing equipment for children as well [5]. The key is to keep the design of the products

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attractive and enjoyable for the children.

#### References

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