

Electric Car

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This project I have done with grade 8 students but could be also done with other grades.

Materials

wood 1 cm x 1 cm (usually 40 cm long available from Spectrum/Kidder)

2 pieces 10 cm

2 pieces 7 cm

1 piece 3 cm

1 popsicle stick 7 cm (or 1 cm x 1 cm wood could be used)

3/16" dowelling can be bought from hardware and usually comes 4' length (or smaller lengths found in Dollar stores).

2 3/16" dowelling, 8 cm

1 3/16" dowelling 11 cm

Pieces of straws are glued to the frame and used to hold dowelling in place.

gears (available from Spectrum/Kidder, the large package with 150 assorted pieces is the most economical for class project-\$35, a package has sufficient gears for 19 cars, the gears have a 3/16" hole, except the 12 teeth gear which a small hole for a motor shaft)

2 40 teeth gears

2 30 teeth gears

1 20 teeth gear

1 12 teeth gear with small hole for motor shaft

The brass fasteners used in the switch can be bought at Staples and usually comes in packages of 100

2 fasteners are needed for each car

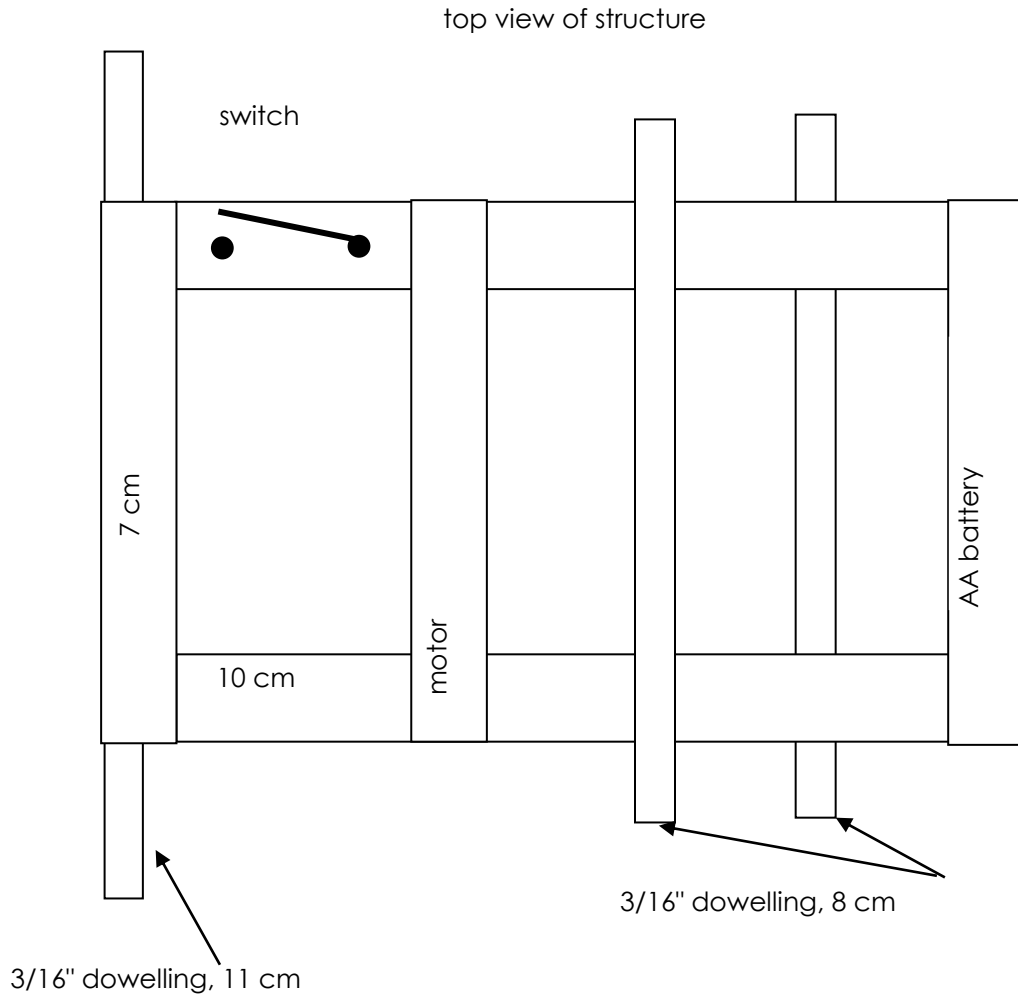
I use a short copper wire for the arm of the switch. In the past I used a paper clip but now most paper clips have a plastic coating making them a poor conductor.

Motor

The cheapest motor that I've been able to find is the economy motor sold by Spectrum. They can be bought individually (\$1.20) or package of 100 (\$85.00).

The battery holder is optional. I've used a paper cylinder to hold the battery and an elastic band to keep the wires in place at each end of the battery. However,

if a plastic holder is desired then the cheapest that I've found is from Amazon (\$1.00 each). Spectrum/Kidder do sell them but double the price.



side view of structure

