CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

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Project Number

22209

Project Title

Are Kids Too Light for Their Backpacks?

Abstract

Objectives/Goals

Last year my pack weighed a ton. I had to carry my books around to all my classes 'cause going to my locker between classes was unrealistic. I soon got back pains. This school year began with a policy that allows kids to get a class set of books and a set to keep at home. my doctor recommended that my backpack not weigh more than 15-20% of my own body mass.In researching the reasoning behind my doctor#s recommendation,I found that there are many organizations that recommend that backpacks should weigh less than 15-20% of a kids body weight.I decided to see if the school policy on the extra set of books for home would help to meet this standard.I weighed a mix of boy and girl seventh and eight grade and their packs,then converted their weights into mass and calculated the % of each kids pack mass in relation to each kids body mass.The data showed that seventh graders carried a higher % of their body mass in their backpacks than eighth graders did.For each group tested the total backpack mass was less than 15% of the total body mass. The data showed that only two kids had backpacks that exceeded more than 20% of their body mass. Since the change of the policy on books,kids now keep approximately fourteen lbs. of books at home.If the average pack in all the groups weighed 6.4 kg's more,then all the groups would exceed the backpack standards.

Methods/Materials

Students(male, female, seventh and eighth grade), Scale, Pencil, Calculator, pc

Results

My data shows that kids today really are not carrying around that much weight these days.I observed that the girls did not like to be weighed.Whereas the boys did like to be weighed and would hog the scale from me,so I could not further expand my collection of data. In addition, the average girl did happen to weigh more than the average boy.

Conclusions/Discussion

Seventh graders carried a higher percentage of their body mass in their backpacks than eighth graders did.For each group tested, the total backpack mass was less than 15% of the total body mass. The data showed that only two students had backpacks that exceeded more than 20% of their body mass.Since the change of the school policy on books, students now keep approximately fourteen pounds of books at home.If the average backpack in all the groups weighed 6.4 kilograms more, then all the groups would exceed the backpack standards.

Summary Statement

i weighed kids and their packs to see if they're carrying too much weight.

Help Received

dad helped with written report; friend helped convert units; teacher helped with paper work

Preliminary