Growing Minds in Math #1

Lessons for Stimulating Thinking

Author: R.E. Myers
Editor: Jonathan Gross
Illustrator: Bron Smith
Book Design: Jeff Richards

ELE90/106306
ISBN: 978-0-7877-2061-2
Release Date 2015

The pages in this packet were originally published in
Growing Minds, (ELE90/1063).

Lorenz

Lorenz Educational Press
Milliken Publishing Company
Teaching and Learning Company
Show What You Know® Publishing
LEP interactive

Teacher's Guide For "A House For All Seasons"

ABOUT THE ACTIVITY

This activity will appeal to students who have the kind of mind that sees possibilities in materials, machines, and situations. They are likely to be visually and spatially oriented. An inventive and practical man has put his house on tractor rollers so that it can be rotated to take advantage of the sun as the seasons change. It's a simple idea, but it hasn't been applied to houses often. There are reasons why houses are placed on foundations and are expected to do little or no moving. On the other hand, the man in Idaho must be saving a bit on his fuel bill because he can take advantage of whatever sunlight is available during the year.

Levels 1 and 2: Putting an idea into context; applying the principle to other objects and creating diagrams showing how they work.

Your students are invited to apply the principle of rotation to other objects that don't ordinarily have that feature. A Lazy Susan is an example of a household object which has the principal attribute of rotating 360 degrees. Are there others? Your students may think of several good ones.

Level 3: Explaining the advantages of rotating for the two objects

After thinking of two objects that would benefit from being capable of rotating 360 degrees, your students are asked to justify their inventions. They should be as practical as possible in citing the advantages that the objects will have when they can rotate freely.

Targeted Learner Outcomes: The student will:

- apply the rotating principle to two objects
- diagram her or his ideas
- explain the advantages of having the objects rotate

Name Date

A House For All Seasons

A. A man in Idaho has solved the problem of having shade for his living room on hot summer days. He has set up his house so that it will rotate 360 degrees in either direction. If he wants the kitchen to have the morning sun, he rotates the house so that the kitchen faces east, giving him and his wife a cheery room in which to start the winter days.

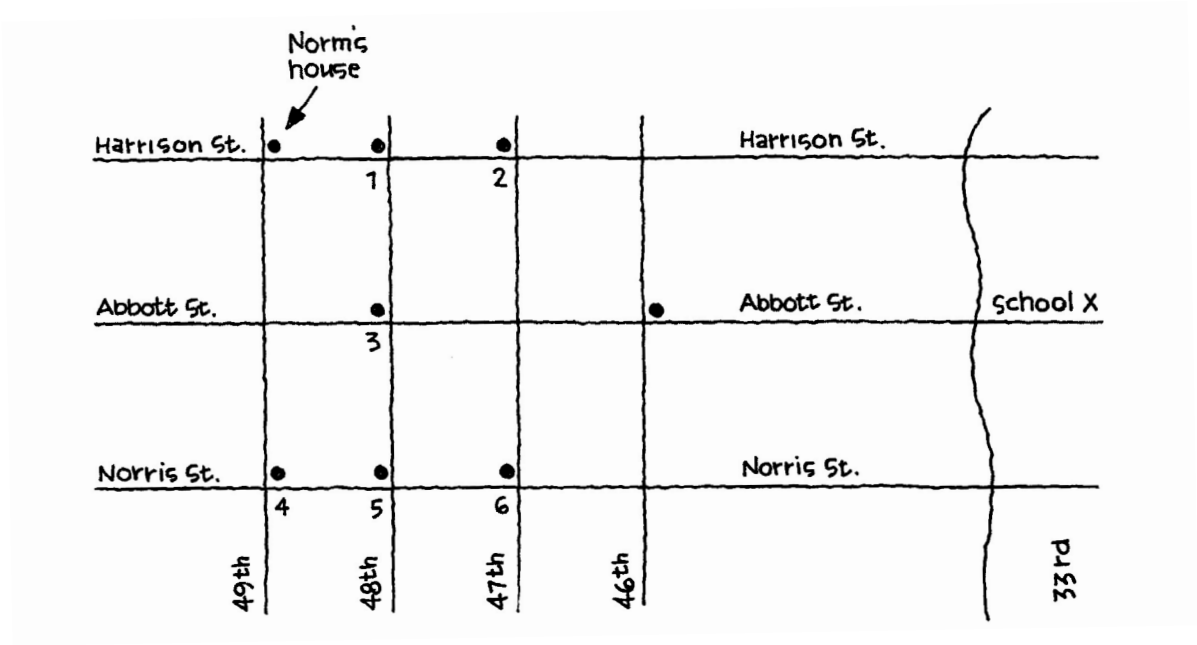
The same principle might be applied to other stationary objects. We already have any number of retail displays that can be rotated 360 degrees; racks for greeting cards and sunglasses are just two examples. Name at least two objects—small or large—that would benefit from someone's being able to rotate them 360 degrees. Diagram your inventions and explain the principles upon which they operate.

B. Describe the practical advantages of your inventions. Give at least three.

Name Date

A New Route

A. Norm lives on the edge of town, where he raises chickens. Since he has quite a few, he has extra eggs to sell to people in his neighborhood. He delivers his eggs on Mondays and Fridays on his way to school in the morning. Norm has seven customers. Here are their locations on three streets near Norm's house. The numbers mark the houses Norm serves and the order in which he delivers his eggs.



He has built a box for each customer. He carefully stacks the seven dozen eggs in a wagon that he pulls, and then he puts a dozen eggs in each customer's box on the way to his school on Abbott St.

For several months, everything worked out well for Norm. He was never late to school, even though he had a mile to go after he had delivered eggs to his last customer. Then a snag developed. Two families complained about Norm taking shortcuts through their properties, and he has to figure out how he can deliver his eggs in the same amount of time.

What should his new route be? You can find his original route simply by connecting the dots in order on the map above. Is there any other route Norm can take that will get him to school on time? Explain.

B. How might Norm solve his problem?