

Going beyond the math textbook

ARVIND GUPTA ANSWERS YOUR MATH QUESTIONS

BY ARVIND GUPTA, VANCOUVER SUN MARCH 17, 2009



The stress of homework is getting to Zachary Drever, a Grade 3 student.

Photograph by: Marc Bence, CanWest News Service

Darlene Couwenberghs:

I am a math teacher for the Delta school district. I was so excited when I opened the paper this morning and found this lovely piece of journalism. I have been trying to make math more relevant by incorporating math projects into my classroom. I have been having difficulty with Math 10 Principles. I have only found one to go with the linear relations unit. The Applications projects don't cross over easily. I was wondering if you would know of any relevant projects, or if you could point me in the right direction.

Hello, Darlene,

Kudos to you for going beyond the textbook to introduce your students to applications of mathematics.

While there many physical phenomena that provide the opportunity to explore linear relationships, here is an in-class activity your students can do with just a tape measure.

In Leonardo Da Vinci's drawing of an idealized figure, the Vitruvian Man, the man's height is the same as his arm span.

Have your students test the hypothesis that these values are linearly related by having everyone in the class measure their height and their arm span with a tape measure. Plot these values on a graph with

height along one axis, and arm span along another. What do they observe?

This activity combines measurement, graphing and statistical interpretation and can be extended in many ways. Can the students predict their height from their forearm length? Let your students use their creativity to come up with more ideas. Visit the Math Matters web page to find links to lots more math activities.

Good luck, and I hope this helps!

Diana Schmidt:

What are your recommendations for the child in elementary school in Vancouver who loves math but finds all the materials provided in class 'too easy'? The child may not necessarily be a math prodigy but grasps concepts quickly and wants more challenging material than the curriculum has provided so far, even when given material from higher grades.

Hello, Diana.

I don't know if you are writing this question as a parent or teacher, but my answer would be the same either way.

To keep the child engaged and excited about math, the student, parent, and teacher all need to agree on a plan to stimulate the child both in the classroom and at home.

Becoming bored with math by not being challenged puts the child at risk of losing his or her passion for the subject. My recommendation: go deeper, not higher.

First, the teacher needs to be certain the child thoroughly understands a concept and can transfer the understanding to new situations rather than just memorizing "how to get the right answer".

For example, does the child think that 74 is an odd number because there is an odd digit in the 10's place? This kind of misconception is common if children just memorize a rule about 0, 2, 4, 6, 8 representing even numbers.

If the child has truly mastered a concept, the teacher and family need to decide if they want to move on to learning outcomes from higher grades to fulfill the child's need for challenge.

This may or may not be appropriate depending on the individual, but even if it is, the child may still need further challenge.

In either case, I would encourage some in depth problem solving or logic puzzles on the topic of study to take the child to some higher level, deeper thinking.

A great site to look at is www.nrich.maths.org which provides free mathematics enrichment materials (problems, articles and games) for teachers and learners from ages five to 19 years. All the resources are designed to develop subject knowledge, problem solving and mathematical thinking skills. Sudoku, Kakuro and Kenken games are other quick ideas for now.

You will find many more suggestions for math games, puzzles, and activities to stimulate, improve, and challenge mathematical thinking in our week 2 article about math phobia. You can also read our article in the coming weeks about good math maintenance for students who are doing well in math class. Have fun with it!

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