TEACHER NOTES for ALGEBRA REAL-LIFE PICURE HANDOUT:

14-11   **They're Everywhere! They're Everywhere!**   ½ day

• After students run the Hi-Tech Brains lab, they should have a good idea that linear equations are "everywhere." Since we also teach that slope is constant change, students can see that constant change occurs whenever they see a pattern. After we ran this lab the first time, students came to us with examples they saw of linear equations.

• Deceased author Tom Strauss took photos of some of the things they spotted (or he gave them his digital camera and they took the photos) and you'll see those pictures on handout 14-11. Every photo represents a linear equation. For example, on problem #1, every time a table is added, 4 chairs are also added, so the constant change or slope is 4. The equation is $C = 4T + 2$, where C represents the number of chairs and T represents the number of tables. The y-intercept this time represents the 2 extra chairs sitting against the back wall. It's nice to add that if a person was to count the number of chairs in the room, most people would probably do it as the algebra "does" in the equation, that is, 4 times 3 plus the 2 chairs at the back.

• Question #2 is interesting in that the y-intercept is negative. The constant change is 12 markers per box and the **equation is M = 12B - 5**, where the - 5 represents the 5 missing markers. (We would not expect most students to write the equation as $M = 12B + 7$, because they are encouraged, and we expect, them to check their answers. So if they wrote the wrong equation and checked by filling in the 7 boxes, they would get $7 \cdot 12 + 7$ and that would be too many markers.)

• After you run the lab and this handout, your students will see that "Algebra is Everywhere." You can help guide them in looking for more real-life equations by telling them to look for patterns. For example, rows of glasses stacked up probably fit a linear equation, as do the lights or tiles in your classroom ceiling, and perhaps the number of chairs in your room also fit a linear equation. Once you see a few, they are easy to spot.

• When you make copies of this particular handout, check to see if your photocopy machine has a "photo" setting. If so, the copies of this handout will be much sharper and crisper. We usually copy this handout single-sided rather than back-to-back.