

Simple Straight-forward Examples



Nothing ruins a good math lesson like a bad example.

Struggling students often confuse their difficulties learning new math concepts in algebra and geometry with their deficiencies in arithmetic

These difficulties can be avoided by using simple straight-forward examples that work and clarify the idea presented, without variation, focusing on the new concepts or skills being taught – not distracted by needless arithmetic. Once students understand the concepts, then teachers can scaffold up to using variations, then getting to use numbers that are not so compatible.

Using simple, straight-forward examples that work, that clarify what is being presented, without variation, and not bogging students down in needless arithmetic doesn't just happen. Pre-planning and choosing examples in advance is very important. Teachers have a tendency to use exercises from the book as their examples. And too often, those examples have variations or distract students with arithmetic taking their focus off the topic being introduced.

If examples were pre-chosen to assist struggling students and build confidence in their ability to learn new concepts and skills, students should not need calculators when concepts and skills are initially introduced.

A simple example of this is the

Triangle Sum Theorem states *the sum of the interior angles of a triangle is 180°* . If the angles are named $\angle A$, $\angle B$ and $\angle C$ and $m\angle A = 60^\circ$, $m\angle B = 100^\circ$ and students were asked to find the $m\angle C$. Most students will be able to do the arithmetic in their head as the teacher sets up the equation and finds $m\angle C = 20^\circ$.

I don't want to over simplify the idea of using simple straightforward examples that work, but students have to experience success so we can get them to believe they can do the math. So doing two or three examples with nice numbers like above keeps the focus on learning the math.

Whereas, if the measures of the angles were not as compatible, say $m\angle A = 68^\circ$ and $m\angle B = 86^\circ$ and $m\angle C = 86^\circ$, then, while not hard, the students would be concentrating on the arithmetic. That is adding 68 and 86 and subtracting the sum from 180. In other words, the arithmetic is a distraction. What we want students to walk away with is the sum of the interior angles of a triangle is 180° – that it is easy.

After two or three examples using very compatible counting numbers, then we can do problems with less compatible counting numbers or insert an algebraic expression to represent the third angle. But, concentrating on the math concept first addresses the needs and confidence levels of struggling students.