

Why Johnny Can't Do Math...

The Difference in Math Teaching Styles

Behaviorism	Biblical Worldview
The Look-Say System ↓	Inductive Reasoning ↓
Drill & Practice ↓	The Learning Cycle ↓
Incremental Review (i.e. Saxon Math)	Making Math Meaningful (Quine Math)

BEHAVIORISM: A theory that assumes human behavior is primarily a reflexive reaction to stimuli, which is limited to quantifiable, objective data, and excludes the person's individual soul. "Man, according to the behaviorist view, has no soul, he has no mind; he neither initiates, originates, or creates. Man is accepted as a machine and he is treated as a machine." (Francis Schaeffer)

LOOK-SAY SYSTEM: Children are repeatedly shown pictures and numbers, or sing songs to memorize mathematical equations. They learn to mindlessly parrot back, but do not understand what they are saying, and are unable to think mathematically.

DRILL & PRACTICE: A subset of the *Look-Say System*; the child is taught a specific skill, and follows page after page of similar problems in hopes of memorizing the facts.

INCREMENTAL REVIEW: A spread-out adaptation of *Drill & Practice* introduced by *John Saxon*, where a specific skill is introduced with concentrated attention, then gradually reduced over time. Similar to the technique used by trainers to teach animals new tricks.

BIBLICAL WORLDVIEW APPROACH: A method introduced by *David Quine* based on the belief that man is a special creation of God with abilities and needs to worship, create, and reason. This approach teaches children to understand a mathematical idea or concept *before* they are taught the associated skill, which greatly reduces the amount of drill needed.

INDUCTIVE REASONING: Students make personal observations and learn how to draw logical conclusions and general principles from patterns.

LEARNING CYCLE: An instruction model based on *Inductive Reasoning* that moves through the phases of observation, interpretation, and application. In this way the student processes the mathematical concept personally, and then uses their understanding to formulate theories and conclusions. Other examples of this model are the *Scientific Method* and Inductive Bible Studies.