Mathematics KOER workshop
Content Analysis of Textbook

How do we look at the textbook?

- What are the topics that are covered?
- What are the skills that are being built?
- How is it different from last year Class 9?
- How does it build from Class 8 textbook?
- How have other textbooks dealt with the same topic?
- Can we identify levels of content and skills?
- What strategies can we use?
- What resources can be used?

Simultaneous Linear equations

- Introduction to two variables
- Substitution, Elimination, Proportional evaluation
- Use of graphs in simultaneous equations
- Applications

  Syllabus in Class 8
- Definition of algebraic equation
- Methods of solving- manipulating LHS/ RHS
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Approach in NCERT textbooks

- Generalizing and combining variables
- Using algebraic expressions to express results
- Visualizing and analyzing graphs
- Graphs to represent variation
- Linear equation in two variables introduced through graphs
- (in class 10), simultaneous linear equations are introduced

Skills and concepts

- Algebraic thinking
  - Generalizing from patterns and abstracting
  - Analyzing and forming algebraic expressions
  - Combining algebraic expressions; factorization
- Analyzing and interpreting graphs
  - Graphs represent relationships between numbers.
  - Predicting pattern of numbers from graphs and vice versa
- Direct and indirect variation; proportionate and non-proportionate variation
- Expressions and equations
  - What are coefficients?
  - What are constants?
  - Why would we have more than one equation?
- Manipulating data they encounter and generalize and express change in terms of variables
- Methods of solving given sets of equation
- Understanding solution sets and solution space

Resources we would need?

- Graphs
- Data patterns and generalization (assessments)
- Multiple data sets for students to develop generalization (assessments)
- Interpreting solutions using graphs and vice versa (assessments)
- Worksheets with various degrees of difficulties