

THINKING WITH NUMBERS

Lesson Descriptions

Making Sense Of Adding & Subtracting

Making sense of adding and subtracting involves far more than counting to get the answer. Learning should focus on two big ideas. First, we need to help children understand addition and subtraction. They need to make sense of how the parts and the whole are related—part + part = whole and whole - one part = other part. These relationships occur in many different everyday situations. Exploring With Word Problems will enable children recognize these situations as addition and subtraction. The concrete representations and symbolization enable them to model these situations. Second, to become efficient, flexible, and fluent in using addition and subtraction, children need to make sense of a variety of reasoning strategies to enable them to efficiently answer addition and subtraction problems.

Animations with the representations model the new thinking strategies and help them develop flexibility and fluency.

Expected content outcomes include helping children learn:

- to relate parts and the whole—part + part = whole and whole - one part = other part,
- to recognize when addition, and subtraction can be used to solve everyday situations,
- to represent those situations with models and symbols for addition and subtraction,
- to understand equals and the equals sign,
- to make sense of and spontaneously use a variety of reasoning strategies to solve problems,
- to make strategic choices about which reasoning strategy might be efficient, and
- to develop flexibility and fluency with addition and subtraction.

