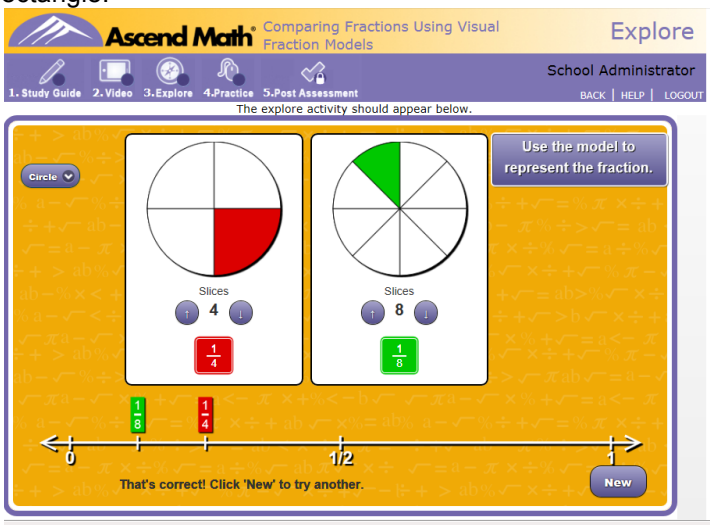
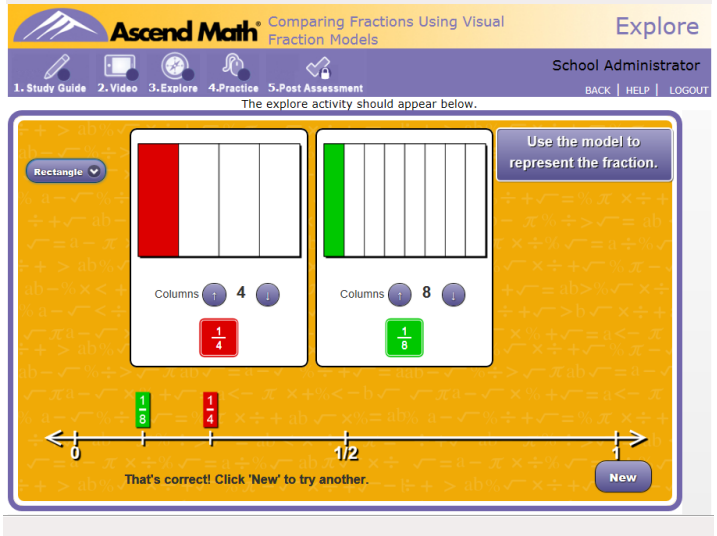
Ascend Math - Examples of Flexible Mathematical Thinking

4.1. Describe opportunities students have to explore flexible mathematical thinking by solving problems in multiple ways.

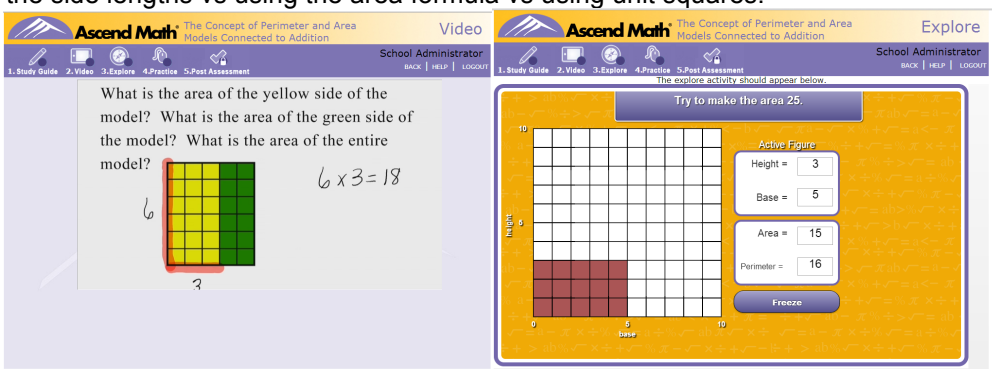
Ascend Math teaches flexible mathematical thinking by encouraging development of multiple tactics for the same problem. See the example below – the numerical representation is compared to an area model which in turn is compared to a number line display. Students may explore the concept using either a pie chart or a rectangle.





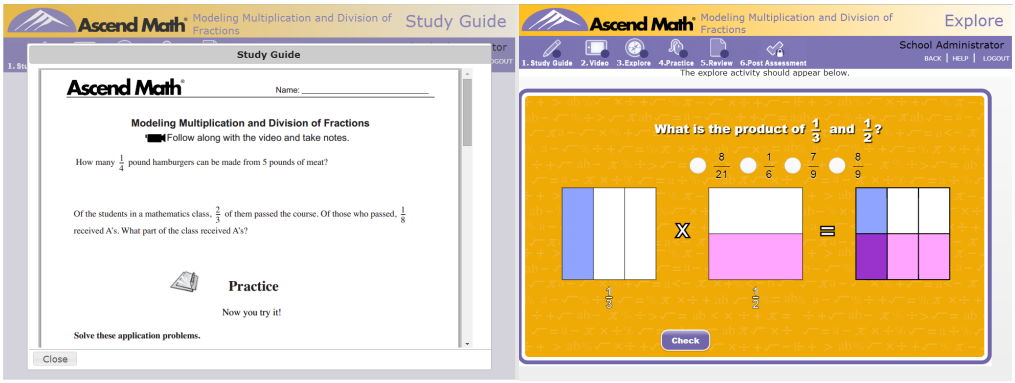
4.2. Describe opportunities students have to discover mathematical formulas and processes.

Ascend Math provides opportunities to discover formulas and processes discussed in the instructional video portion by connecting these to visual interactive representations. E.g. solving an area-of-a-square problem with an interactive exploration by seeing the area and how it changes as the student changes the side lengths vs using the area formula vs using unit squares.



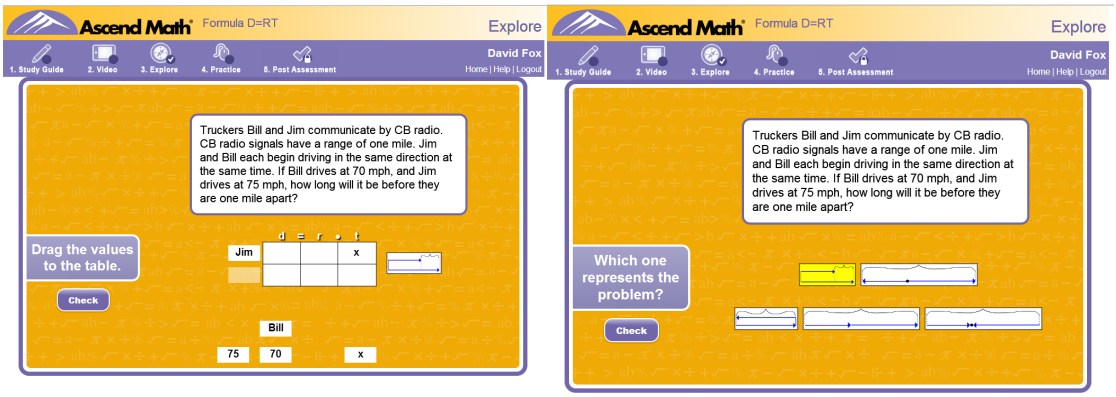
4.3. Describe opportunities students have to create concrete, visual and symbolic representations of mathematical concepts and processes.

Ascend Math connects visual and symbolic learning throughout the entire study plan at all levels. See an example below. Fraction multiplication is taught not only by symbolic calculation, but also using visual representation.



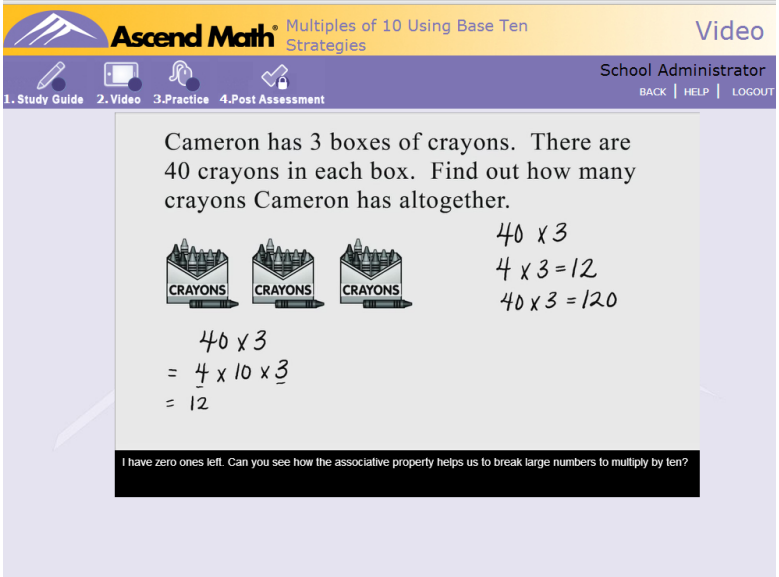
4.4. Describe opportunities students have to learn common problem solving structures.

Ascend teaches steps and lay out tools that aid in solving similar problem solving situations, such as tables, steps, and models. See below.



4.5. Describe opportunities students have to learn problem solving strategies.

By offering a multi modal approach to instruction, using video, interactive explorations, practice problem video solutions, as well as study guides Ascend Math teaches a multitude of problem solving strategies for learners of varying aptitudes and affinities.

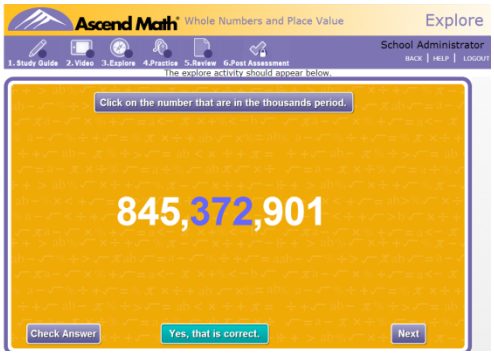


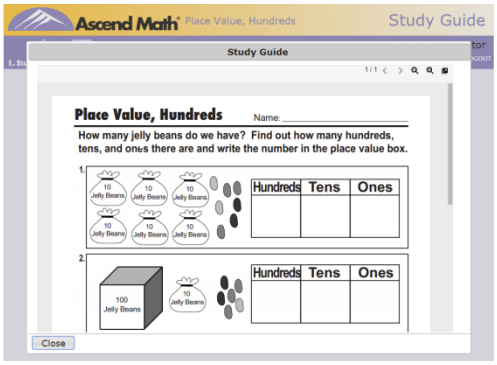
4.6. Describe opportunities students have to explore problems in a real world context.

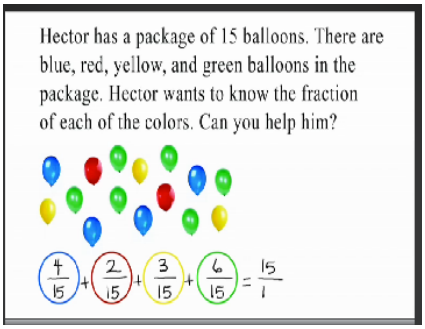
Ascend provides real world application throughout, such as tip-calculation, interest, wages, taxes, and task rates.

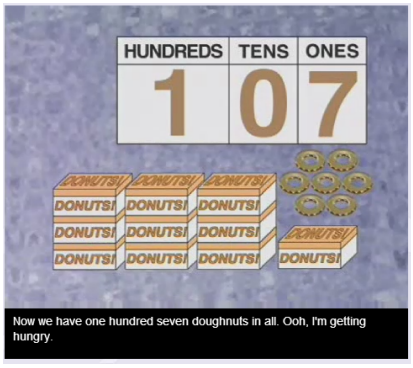
4.7. Describe opportunities students have to compose and decompose numbers.

Ascend covers composing and decomposing numbers using varying approaches throughout the grade levels. See a small sampling of content below.









4.7.1. Describe opportunities students have for recursive, continuous practice of previously taught skills.

The Ascend scope and sequence is built with students' need for practice of previously learned in mind. Subjects are offered at increasing difficulties while allowing review of the previously learned skill as necessary.