Intervention Cycle

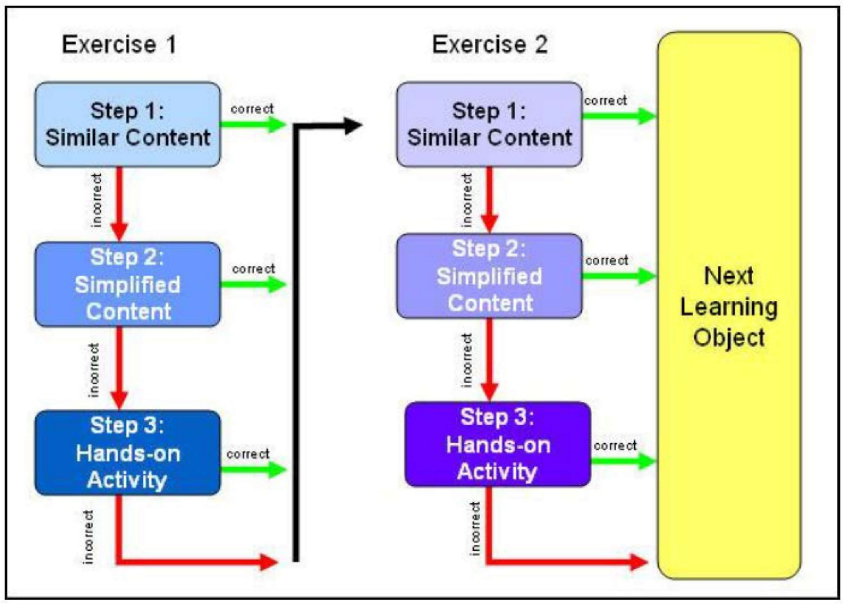
Adaptive Motion is based on the student's response pattern:

If the student answers 4-8 exercises for a skill and shows a *positive response pattern*:

- The skill is considered mastered.
- The next skill is introduced to the student.

If the student provides correct and incorrect answers intermittently throughout the series of 4 to 8 exercises, SuccessMaker employs various instructional strategies to help the struggling student. The following intervention strategies are attached to specific skill objectives:

- **Sequential Practice within the area of difficulty**: During Sequential Practice, mixed presentation stops and the student receives more exercises of the same type before Motion determines the next move.
- **Step-by-step or Scaffolded Tutorials**: Tutorials offer help on how to complete an exercise or they can give the student opportunities to experience the skill in another context.
    - **Step-by-step tutorials:** Lead the student through three instances of exercises that meet the objective. 100 step-by-step tutorials provide guided practice that helps to solidify unsure concepts and problem-solving procedures.
    - **Scaffolded tutorials**: Help the student learn a concept by moving the student from concrete activities to more abstract problem solving. In a scaffolded tutorial, the student is presented two problems with the following three steps to teach a concept:



- **Review of prerequisite material**: The student could receive exercises from Prerequisite Skill in an effort to facilitate understanding of the current skill.

After intervention, the skill is returned to the mix of exercises being presented through Mixed Presentation. The student has another opportunity in a set of 6-8 exercises to show understanding of the skill.

- If understanding is proven, the skill is marked completed/mastered and the student moves on.
- If understanding is not proven, the skill can be placed into Delayed Presentation and goes into the Intervention Cycle, which can be entered three times.

Mastery Assessment

SuccessMaker determines the Mastery of a particular objective by analyzing a student's answer pattern, not simply the number or percentage of correct answers. SuccessMaker Math follows the basic philosophy of a probability-based assessment (the likelihood that the student will get the next question correct). If this likelihood is higher than a certain threshold value, then the student is judged to have Mastered the objective. When assessing mastery, the formula explicitly weighs the following factors:

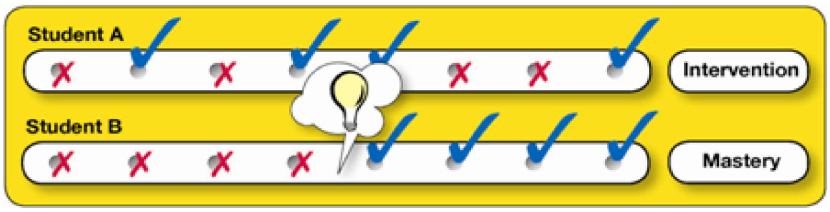
• Pattern of correct/incorrect answers giving the greatest weight to the most recent responses

• Likelihood of a lucky guess

• Difficulty of the exercise

• Significance of the exercise (the degree of relatedness to a terminal objective)

Figure 4-4 Mastery



Fluency (Speed Games)

The Fluency strand employs "Speed Games" which enable students in course levels 2-8 to practice their basic math skills in addition, subtraction, multiplication, and division. These exercises build automaticity, allowing students to access math facts readily. The Fluency (Speed Games) strand contains a total of 70 exercise sets of 20 facts each.

A scoreboard on the screen reports the cumulative score after each correct response. The points received for each correct answer depend on the speed of the student's response.