

Elements	1	2	3	4	Score
Prerequisite Skills	Does not identify prerequisite skills or provide warm-up activities.	Identifies prerequisite skills, but provides warm-up activities unrelated to the target topic.	Identifies prerequisite skills, however, offers limited warm-up activities to engage students' background skills.	Clearly identifies prerequisite skills and provides sufficient warm-up activities to engage students' background skills.	
Explicit, Systematic Instruction	Does not provide opportunities for teacher-led instruction and/or instructional activities use a discovery learning approach to introduce skill.	Provides limited opportunities for teacher-led instruction.	Provides opportunities for teacher-led instruction on how to teach the target topic.	Provides clear directions for teacher-led instruction in which the teacher clearly describes features of the math concept while performing the math skill; breaks math concept/skill into learnable parts; and thinks aloud as they model.	
Math Models	Does not incorporate math models.	Incorporates math models for guided practice or student use only. Does not incorporate models during teacher-led instruction.	Incorporates math models for teacher-led instruction and student use. Provides limited directions on how teachers should use models during teacher-led instruction.	Appropriately incorporates models throughout the lessons (e.g., number lines, ten-frames, CRA approach*). Provides clear directions on how to teach using the models.	
Math Vocabulary	Does not identify vocabulary words.	Identifies key vocabulary but at the beginning of the chapter or unit rather than individual lessons.	Identifies and directly embeds (e.g., underlines) key vocabulary in individual lessons.. Does not provide opportunities for students to use vocabulary.	Identifies and directly embeds (e.g., underlines) key vocabulary within lesson. Also, offers opportunities for students to use vocabulary.	
Instructional Examples	Does not provide teaching examples.	Provides poorly selected teaching examples. Examples are irrelevant to the student practice provided.	Provides clear teaching examples, however, examples are limited in number (i.e., only two examples).	Provides clear and sufficient number of teaching examples. Also, examples are at least as complex a student practice. Non-examples are included.	
Guided Practice Opportunities	Does not provide guided practice opportunities.	Provides a limited amount of guided practice opportunities with no guidance to support the Gradual Release Teaching model.	Provides a limited number of practice opportunities with limited guidance to support the Gradual Release Teaching model.	Provides a sufficient number of practice opportunities grounded in the Gradual Release Teaching model to support correct responding based on student performance on math tasks (procedural skill, conceptual understanding, applied task) including modeling, observing performance, and immediate corrective feedback.	
Academic Feedback	Does not provide academic feedback or correction procedure.	Includes only brief <i>hints</i> for anticipating student errors and misconceptions.	Provides <i>hints</i> to anticipate student errors and misconceptions. Provides procedures for correcting errors and reteaching when new skills are introduced.	Provides <i>hints</i> to anticipate student errors and misconceptions. Provides procedures for academic and corrective feedback. Also, offers reteaching strategies. Gradual release of support is used where frequency of feedback is faded as student performance approaches mastery.	
Cumulative Mixed Review	Does not provide cumulative review opportunities.	Provides very limited review problems.	Provides cumulative review but it is not interleaving and/or does not spiral.	Provides a sufficient amount of interleaving cumulative review** which spirals throughout the year.	
Build Procedural Fluency	Does not incorporate fluency practice.	Develops conceptual understanding and procedural skill building practice during core instruction. Does not use timed activities to build fluency for recently taught skills daily during core instruction. Does not adjust tasks based on measured student fluency.	Develops conceptual understanding and procedural skill building practice during core instruction. Uses timed activities to build fluency for recently taught skills daily during core instruction. Does not adjust tasks based on measured student fluency.	Develops conceptual understanding and procedural fluency at the same time. Provides sufficient activities for already-learned skills to support fluency. (10-15 min daily). Uses timed activities as one way to build math fluency. Adjusts tasks based on measured student fluency.	
Solving Word Problems	Does not provide opportunities to incorporate instruction on how to solve word problems.	Provides limited opportunities to incorporate instruction on how to solve word problems.	Provides opportunities to incorporate explicit instruction on how to solve word problems.	Provides deliberate explicit instruction on solving word problems to deepen students' mathematical understanding and support their capacity to apply mathematical ideas.	

*CRA = concrete - representational - abstract

**Interleaving cumulative review consists of mixing math problems together so that problems cannot be solved using the same strategy or in the same way. This type of practice "forces" the student to think of which strategy or procedure to use to solve each problem.

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Resources: *Evaluating Three Elementary Mathematics Programs for Presence of Eight Research-Based Instructional Design Principles*, Doable, Fien, Nelson-Walker, and Baker (2012); IES WWC Practice Guide *Assisting Students Struggling with Mathematics: Intervention in the Elementary Grades* (2021), and IES WWC Practice Guide *Assisting Students Struggling with Mathematics* (2009).