Overall Structure

1. **Explore, Play, and Discuss**: These activities provide opportunities for students to explore the initial ideas of the section. This section can be completed asynchronously using digital manipulatives and response tools, or using physical manipulatives and the student workbook pages with guiding questions for caregivers. If planning for a section per week, these activities would ideally be assigned earlier in the week.

2. **Deep Dive**: These activities are key learning opportunities for students around the section goals. **If there are chances for in-person or virtual synchronous time, these would be the activities to do collaboratively to share ideas and build community.** If done asynchronously, opportunities to view and respond to peer work or sample student work as well as receive feedback from teachers (and perhaps peers), is essential for these activities. Formative assessment is also a part of this section to check in on student understanding. If planning for a section per week, these activities would ideally be done mid-week.

3. **Synthesize and Apply**: These activities are ways for students to synthesize the learning of the section and for teachers to assess student understanding toward the section learning goals. These activities can be completed asynchronously, with either written, in-person, or automated feedback. If planning for a section per week, these activities would ideally be done toward the end of the section.

4. **Ongoing Practice**: These provide opportunities for students to practice unit topic ideas and build toward computational fluency. In K–5, the activities in this section are typically practice problems and center games that can be played independently, with a family member, or with classmates. In IM 6–12, each lesson includes a distributed practice set. Many existing digital platforms already have IM 6–12 practice problems loaded in so that students can complete and submit them online. Some can be autoscored.

5. **Anytime Resources:** The activities in this section have the flexibility to be used anytime during a section. In K–5, these are center activities that provide opportunities for students to build computational fluency across the year. In 6–12, these activities are modeling prompts that offer students the opportunities to engage in mathematical modeling.

Grade 4, Unit 3: Fraction Operations

Abbreviated Unit Narrative 2

Section A Goals 2

Section B Goals 4

Section C Goals 7

Abbreviated Unit Narrative

In this unit, students deepen their understanding of how fractions are composed, and how they can be decomposed, through a deep dive into fraction operations. Students multiply fractions by whole numbers, add and subtract fractions with like denominators, and use their understanding of equivalent fractions to add tenths and hundredths.

The representations used in this unit help to extend what students learned about operations of whole numbers in prior grades to operations of fractions. For instance, students interpret multiplication of a whole number and a fraction in terms of equal-size groups with fractional amounts in each, just as they previously interpreted the product of two whole numbers in terms of equal-size groups with whole-number amounts in each. Students use tape diagrams to represent this idea.

Section A Goals

- Represent and explain that a fraction $\frac{a}{b}$ is a multiple of $\frac{1}{b}$, namely $a \times \frac{1}{b}$.
- Recognize that $n \times \frac{a}{b} = \frac{(n \times a)}{b}$
- Represent and solve problems involving the multiplication of a fraction by a whole number

Explore, Play, and Discuss	**Activity Suggestions** ● Lesson 1, Warm Up: How Many Do you See? ● Lesson 1, Activity 1 and Activity 2 ○ Consider a virtual sort for Activity 2 ○ Collect student matches from Activity 2 to launch the Deep Dive section. ● Lesson 4, Warm Up: Notice and Wonder	**Assessment Suggestions** ● Lesson 1, Cool Down
Deep Dive	**Activity Suggestions** ● Lesson 2, Warm-up ○ For suggestions on virtual choral counts, visit this blog post. ● Revisit Lesson 1, Activity 2 matches ○ Ask students to discuss how they decided on the matches. ● Lesson 3, Activity 1 ○ Discuss: How would we write 7/3 as the product of a whole number and a fraction? ● Lesson 4, Activity 1	**Assessment Suggestions** ● Lesson 3, Cool Down ● Lesson 4, Cool Down ○ Combine into 1 cool-down
Synthesize and Apply	**Activity Suggestions** ● Lesson 3, Activity 2 ● Lesson 4, Activity 2 ● Lesson 5, Activity 2 ● Lesson 6, Lesson synthesis questions	**Assessment Suggestions** ● Section A Checkpoint

Ongoing Practice	• Practice Problems
	  ◦ Pre-unit
	  ◦ Lesson
	• Centers:
	  ◦ Rolling Fractions, Stage 1 and 2

Anytime Resources	• Centers:
	  ◦ Same but Different, Stage 2
	  ◦ Fraction Action, Stage 2
	  ◦ Get Your Fractions in Order (9 in Order), Stage 3
	• IM Talking Math

Section B Goals

- Use various strategies to add and subtract fractions and mixed numbers with like denominators.
- Represent and solve problems that involve the addition and subtraction of fractions and mixed numbers.

Explore, Play, and Discuss	**Activity Suggestions** • Lesson 7, Warm-up ◦ Students could record the count either with audio or written. • Lesson 7, Activity 2 • Lesson 8, Warm-up • Lesson 8, Activity 1	**Assessment Suggestions** • Lesson 7, Cool-Down

Deep Dive

Activity Suggestions

- Lesson 9, Warm-up
- Lesson 8, Activity 2
    - Consider launching by asking students to share their work on Lesson 8, Activity 1 from the Explore section.
- Lesson 9, Activity 1
- Lesson 10, Activity 1

Assessment Suggestions

- Lesson 8, Cool-Down
- Lesson 9, Cool-Down
    - Problems 1 and 2
- Lesson 11, Cool-Down

Synthesize and Apply

Activity Suggestions

- Lesson 10, Activity 2
- Lesson 11, Activity 1 and 2

Assessment Suggestions

- Section B Checkpoint

Ongoing Practice

- Lesson 10, Warm-up
- Practice Problems
- Center: Making Jumps, stages 1 and 2

Anytime Resources

- Centers:
    - Same but Different, Stage 2
    - Fraction Action, Stage 2
    - Get Your Fractions in Order (9 in Order), Stage 3
- IM Talking Math

Section C Goals

- Reason about equivalence to solve problems involving addition and subtraction of fractions and mixed numbers.
- Reason about equivalence to add tenths and hundredths.

Explore, Play, and Discuss	**Activity Suggestions** • Lesson 13, Warm-Up • Lesson 13, Activity 1 and 2 ○ Combine into 1 activity.	**Assessment Suggestions** • Lesson 13, Cool-Down
Deep Dive	**Activity Suggestions** • Lesson 15, Warm-up • Lesson 14 Activity 1 ○ Can be made into a digital card sort, if needed. • Lesson 14, Activity 2 • Lesson 15, Activity 2	**Assessment Suggestions** • Lesson 14, Cool-Down • Lesson 15, Cool-Down
Synthesize and Apply	**Activity Suggestions** • Lesson 16, Activity 2 • Lesson 17, Activity 2 • Student Lesson Summary	**Assessment Suggestions** • Section C Checkpoint • End-of-Unit Assessment

Ongoing Practice	
	• Lesson 15, Activity 2 and 3 • Practice Problems • Center: Making Jumps, stages 1 and 2

Anytime Resources	

	• Centers:
	  ○ Same but Different, Stage 2
	  ○ Fraction Action, Stage 2
	  ○ Get Your Fractions in Order (9 in Order), Stage 3
	• IM Talking Math