Analyzing and Interpreting SY 2021 School and District Scores
Considerations for Educators
Outcomes

• **Understand** the purpose of state assessments in a typical year and during a pandemic

• **Identify** interpretation considerations that should precede analysis of state assessment scores from the spring 2021 administration

• **Examine** state assessment scores using data tools and resources in the OSTP Data Portal

• **Utilize** other OSDE resources to assist with addressing unfinished learning

• **Connect** OSDE tools and resources to support next steps
Assessment reporting timeline

**September 23rd**
- School- and district-level **assessment data** available in the Accountability Reporting application and OSTP Data Portal
- **Administrator toolkit and Webinar**

**September 28th**
- **Teacher toolkit and webinar** to support local analysis of performance data in the OSTP Data Portal

**September 30th**
- **Participation rates, enrollment** trends, and **performance data** published on the Oklahoma Data Matrix

**October 5th**
- **Partnering with Families toolkit** to support schools as they work with families to interpret their student's assessment scores
Levels of assessment data

Accountability Reporting
Data displayed in the Accountability Reporting application provides performance, progress, and participation rates by student group and grade level. Accountability Reporting also displays student-level data including OSTP and OAAP assessment, attendance, enrollment, and coursework.

Access to the Accountability Reporting application is granted at the district level.

OSTP Data Portal
Data displayed in the OSTP Data Portal provides aggregate reports for OSTP scores by school, grade, student group, year, and student-level performance data through rosters.

Access to the portal is granted at the district level.
Purpose of State Summative Assessments
State summative assessments

End-of-year state summative assessments determine **levels of proficiency on grade-level expectations** for all students.

**BELOW BASIC**
Students have not performed at least the basic level

**BASIC**
Students demonstrate partial mastery of the essential knowledge and skills that are foundational for proficient work at their grade level or course and that students are not on track to be ready for college or career.

**PROFICIENT**
Students demonstrate mastery over challenging grade-level subject matter; can analyze and apply such knowledge to real-world situations; that students are ready for the next grade, course, or level of education, and that students are on track to be ready for college or career.

**ADVANCED**
Students demonstrate superior performance on challenging subject matter.
Role of state summative assessments

In any year, a single test score does not provide a complete measure of student achievement. Summative assessments

- provide stakeholders with snapshots of student readiness in mathematics, English language arts, and science;
- help to illustrate how well students did when compared to end-of-grade-level expectations; and,
- when connected to local data, help school leaders identify areas of need, inequities to access, and improvements to celebrate.
State summative assessments in a system

State, district, and classroom assessments can work together in a coherent system of assessment. Doing so provides educators with timely information on students’ progress and overall achievement each year.

- **MINUTE BY MINUTE:**
  - **FORMATIVE:** As checkpoints designed to inform instruction, these assessments are extremely useful for teachers and schools.

- **DAILY:**
  - **INTERIM:** As valuable indicators of progress, these assessments can occur at the end of a unit and act as checkpoints to make certain all classes are on track for success across a school or district.

- **WEEKLY:**

- **UNIT:**

- **QUARTERLY:**

- **ANNUALLY:**
  - **SUMMATIVE:** As indicators of college and career readiness, these assessments are used for state accountability and to inform districts about changes that may be necessary to their programs.
State summative assessments in a typical year

In a typical year, summative assessments help us understand **system-level decisions** like

- how district or school curriculum might be working, and/or
- where additional professional development may be helpful.

Interpreting State Test Scores- Educator’s Toolkit
We did not have a typical year

Students and educators have faced serious disruptions in both the 2019-2020 and 2020-2021 school years.
State summative assessments with disruptions due to COVID-19

For SY 2021, summative assessment data serve as an important marker that helps us understand where a student is relative to end-of-grade level expectations outlined in the Oklahoma Academic Standards (OAS).

To interpret SY 2021 performance, it is imperative that district and school personnel understand:

• Who tested and who did not test this past year?
• How students performed?
• How learning conditions and interruptions might have affected state summative assessment performance?
Considerations before interpretations

We urge caution when examining summary reports because of the possibility of uneven participation rates and/or because of changes to learning conditions that may have been disrupted by the pandemic.
Considerations for Examining Your Data
Student population

Who was enrolled this past year that might be different from previous years?
Assessment participation

Based on those who were enrolled, who tested in my district? In my school? Who did not test?
### Assessment participation

#### Who tested?

<table>
<thead>
<tr>
<th>Subject</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELA</td>
<td>82</td>
<td>89</td>
<td>92.13%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>81</td>
<td>89</td>
<td>91.81%</td>
</tr>
<tr>
<td>Science</td>
<td>28</td>
<td>34</td>
<td>82.35%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>191</strong></td>
<td><strong>212</strong></td>
<td><strong>90.09%</strong></td>
</tr>
</tbody>
</table>

#### Who should have tested based on enrollment?

<table>
<thead>
<tr>
<th>Subject</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster Care</td>
<td>180</td>
<td>207</td>
<td>89.86%</td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>5</td>
<td>100.00%</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>89</td>
<td>92.31%</td>
</tr>
<tr>
<td>Individual Education Plan</td>
<td>109</td>
<td>123</td>
<td>86.62%</td>
</tr>
<tr>
<td>Race</td>
<td>161</td>
<td>175</td>
<td>92.00%</td>
</tr>
<tr>
<td>Grade Level</td>
<td>30</td>
<td>37</td>
<td>81.68%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>120</strong></td>
<td><strong>126</strong></td>
<td><strong>96.24%</strong></td>
</tr>
</tbody>
</table>

*Interpreting State Test Scores - Educator's Toolkit*
Statutory and Policy Context
“(E) Annual measurement of achievement.—(i) Annually measure the achievement of not less than 95 percent of all students, and 95 percent of all students in each subgroup of students, who are enrolled in public schools on the assessments described under subsection (b)(2)(v)(I).

In typical years, schools adhere to this participation expectation

- Exceeding 95% participation ensures sampling of the school’s population is truly representative

**AKA:** When met, students who are included in assessment reporting are an accurate reflection of the school’s overall population
Throughout spring 2021, OSDE messaged the importance of participation:

- “We believe in the importance of the information that state assessments provide to help identify areas of need, inequities to access and improvements to celebrate.”
- ... while also messaging federally required assessment reporting (i.e., participation, proficiency) in addition to waived report cards.
Interpretation
Considerations for
SY 2021 Scores

Accountability Reporting Application
In a normal year...
Lower Participation Requires Context

We urge caution when examining summary reports because of the possibility of uneven participation rates or because of changes to learning conditions that may have been disrupted by the pandemic.

<table>
<thead>
<tr>
<th>Participation Rate</th>
<th>Potential Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% or greater</td>
<td>Presumes student representativeness and no data missingness concerns.</td>
</tr>
<tr>
<td>80 - 94.9%</td>
<td>Requires advanced research; interpretation possible but not for all student groups.</td>
</tr>
<tr>
<td>Below 80%</td>
<td>Concerns! Highly unlikely that assessment scores can be comparable to any prior reporting.</td>
</tr>
</tbody>
</table>
### School Profile Change over Time

#### 2019 school profile:
- **146 total students**
- **56% American Indian, 40% White**
- **81% Economically Disadvantaged**
- **22% Students with Disabilities**

#### 2021 school profile:
- **88 total students**
- **60% American Indian, 33% White**
- **81% Economically Disadvantaged**
- **25% Students with Disabilities**

**100% ELA participation rate, overall**
- Grade 5: 100% (28% Prof/Adv)
- Grade 6: 100% (11% Prof/Adv)
- Grade 7: 100% (35% Prof/Adv)
- Grade 8: 100% (11% Prof/Adv)

**91% ELA participation rate, overall**
- Grade 6: 93% (15% Prof/Adv)
- Grade 7: 100% (19% Prof/Adv)
- Grade 8: 85% (17% Prof/Adv)
Performance

Enrollment

- Did your enrollment demographics mirror your students that tested? (By grade level? By student group?)

Participation

- Are your enrollment demographics for your 2021 school year comparable to prior years? (By grade level? By student group?)
- Did you have 95% or greater participation on state tests? (By grade level? By student group?)
- Are your 2021 school year participation rates comparable to prior years? (By grade level? By student group?)

Opportunities to Learn

- Did all students have the same type of access to grade-level learning during the 2021 school year?
- Did student's learning experiences change within the 2021 school year?
Considerations before interpretations

What other information about local conditions of learning should we consider (e.g., opportunity to learn, mode of learning, access to grade-level content, attendance, course grades, etc.)?
Can I compare schools, either within a district or across the state?
In a normal year...
Should I compare the performance of two schools?

<table>
<thead>
<tr>
<th>Elementary School A</th>
<th>Elementary School B</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 95% participation rate, overall</td>
<td>• 96% participation rate, overall</td>
</tr>
<tr>
<td>• Traditional learning for SY 2021 with only occasional learning disruptions due to the pandemic</td>
<td>• Families decided students’ learning pathways at the beginning of the fall semester; most students learned virtually until March 2021</td>
</tr>
<tr>
<td>• Students who quarantined may or may not have had access to reliable internet, had difficulties receiving tutoring or other supports, etc.</td>
<td>• Students’ educational dosage was inconsistent within the school, and students likely had disruptions to services</td>
</tr>
</tbody>
</table>
Comparisons of schools and districts cannot be done as they have in the past!

In typical years, high participation rates allow us to assume that all students had **comparable instructional experiences** and **access to grade-level content**.

- The non-uniformity of SY 2021 means these assumptions cannot be met at the school, district, or state levels.
  - Does the school’s enrollment look different than it has in previous years?
  - Did 95% of students at the school, *and* for each subgroup, participate in the assessments?
  - Were instructional conditions similar for all students within and across schools?
Connecting Data to Address Unfinished Learning

OSTP Data Portal
Understand participation

- Raising key questions
- Suggesting next steps
- Framing deeper data interrogation

Accountability Reporting

- Participation
- Performance
  - Scale score & PL
  - Enrollment

OSTP Data Portal

- More granular information on student mastery of grade-level expectations.

Administrator Toolkit
Supporting on-grade-level instruction

To accelerate students’ progress, system leaders and educators need to identify exactly what unfinished learning needs to be addressed, when, and how. Schools and systems will need to focus their time and energy by knowing where they stand against the following goals and then managing towards them:

- All students and families have the resources they need to meaningfully engage in school, whether in-person or not
- All students feel like they belong in their school experience
- All students and families are treated as authentic partners
- All students have access to grade-appropriate assignments focused on priority content
- All students have access to strong instruction that addresses any gaps in prior learning they have within the context of grade-appropriate assignments focused on priority content

Source: Learning Acceleration Guide
Locating data in the OSTP Data Portal

Login with your Username and Password. Click reporting and then choose the report and school or district for which you wish to review data.

Access to the OSTP Data Portal is granted at the district level.
## OSTP Data Portal Reports

<table>
<thead>
<tr>
<th>Report</th>
<th>Data Available</th>
</tr>
</thead>
</table>
| Group Summary: Performance Levels           | ● **Single grade**: performance level data including OPI, percent scoring at each performance level and reporting category.  
● Data can be disaggregated by student group for comparison purposes. **Reminder: connect participation rates to consider who tested and who did not test.**                                                                                     |
| Group Summary PL: All Grades                | ● **Multiple grades**: performance level data including OPI, percent scoring at each performance level and reporting category by subject.  
● Data can be disaggregated by student group for comparison purposes: **Reminder: connect participation rates to consider who tested and who did not test.**                                                                                           |
| Group Summary PL: All Selections           | ● **Single Grade**: performance level data for all student groups including OPI, percent scoring at each performance level and reporting category by subject: **Reminder: connect participation rates to consider who tested and who did not test.**                                                                                         |
| Summary Counts                              | ● Provides summary counts for online, not other placelement, total tested, and total did not attempt                                                                                                                                                                                                                                           |
| Longitudinal Roster                         | ● Provides student level performance across grades for students enrolled at a site multiple years (For example, grade 3 in 2018, grade 4 in 2019 and grade 6 in 2021)                                                                                                                                                                                                 |
OSTP data portal helps you answer key questions

- Who were we able to test? Who were we not able to test?
- How did students that tested perform (Performance level, Oklahoma performance index [OPI] scale score, and reporting category performance)?
- How does local assessment data compare?
- How can we connect local assessment data to identify what areas of unfinished learning might need to be addressed?

See the “Key Questions for Teachers” Toolkit (on the Office of Assessments website) for additional information.
Who tested? Who did not test?

1. To identify who did not test: Click 2021 under Administration-

2. Next Choose- Drill to Roster and then choose Roster Report

3. When the Roster Report opens, click on OPI and choose Sort Ascending, Students that did not test, will show as DNA
Supporting students that did not test

- Local assessment data
- Attendance
- Enrollment
- Student survey
OSTP performance data

Performance Levels
- Relates **level of readiness** for the next grade, course or level by connecting student test scores to the OAS as described in the **Performance Level Descriptors (PLDs)**.
- Four Levels - **Below Basic, Basic, Proficient or Advanced**

Performance Index Scale Score (OPI)
- Provides a **more specific measure** of readiness to be on track by relating where a score is relative to a **performance level**.
- **Comparable** scale across all tests from 200-399 wherein **300** is always **Proficient**

Reporting Category
- Relates **confidence level** to which students are likely to demonstrate the **Proficient level knowledge, skills and abilities (KSAs)** with respect to the content represented in the **STANDARD and performance** on related questions on the state test.
- Three Levels - **Below Standard, At/Near and Above Standard**
- Students scoring **At/Near or Above** are likely to demonstrate the **Proficient level KSAs**
Performance Levels communicate readiness along a continuum

**Below Basic**
Students have not performed at least at the basic level.

**Basic**
Students demonstrate **partial mastery of the essential knowledge and skills that are foundational for proficient work** at their grade level or course and that students are **not on track to be ready for college or career**.

**Proficient**
Students demonstrate **mastery over challenging grade-level subject matter**, can analyze and apply such knowledge to real-world situations, that students are **ready for the next grade, course, or level of education**, and that students are **on track to be ready for college or career**.

**Advanced**
Students demonstrate **superior performance on challenging subject matter**.

Source: [Senate Bill 1197](https://www.leg.state.ok.us/oip/ senate/committees/education/bills/1197/decision.html)
Oklahoma Performance Index scale scores

- **Oklahoma Performance Index (OPI) Scale Scores** supplement performance-level data by pinpointing where a score is relative to the performance level.
- Performance Index scale scores are obtained by converting raw scores onto a common scale and accounting for differences in difficulty across different assessment form to allow for consistency in score interpretation.
- Because of this, **Performance Index Scale Scores** allow for numerical comparisons between groups of test takers taking the same test.
Mean OPI scale scores pinpoint overall performance within a performance level.

Grade 11 OPI scale scores for ELA and Math are displayed in the Accountability Reporting application in the Assessment Performance Report.

**Grade 3-8 OSTP Performance Level Lookup Table**

**Grade 11: ACT/SAT OPI Conversion**
Reporting category data: What unfinished learning may need to be addressed?

Reporting Category Performance data provide an additional piece of evidence that when connected with local assessment data can bring to the surface where groups of students may be struggling.

Reporting category performance is reported with an indicator that communicates a confidence level of a student’s likelihood of being able to demonstrate the proficient level Knowledge, Skills, and Abilities (KSAs) found in the Performance Level Descriptor (PLD) and assessed through at least six questions.
Accessing OSTP report category data points

- Click on the **Options** icon;
- Choose Stats;
- Click **Reset**;
- Click **% in Each reporting Category Level**;
- Click **Select All** for the subject you wish to explore; and
- Click **Update**.
### Grade 6: Group Summary PL

<table>
<thead>
<tr>
<th>Subject</th>
<th>Administration</th>
<th>Total N</th>
<th>Valid N</th>
<th>Mean OPI</th>
<th>% in Each Performance Level</th>
<th>% in Each Reporting Category Performance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Below Basic</td>
<td>Basic</td>
</tr>
<tr>
<td>ELA</td>
<td>2021</td>
<td>126</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Reading/Writing Process</td>
<td>2021</td>
<td>126</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Critical Reading/Writing</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Language</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Research</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2021</td>
<td>126</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Number &amp; Operations</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Algebraic Reasoning</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Geometry &amp; Measurement</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Data &amp; Probability</td>
<td>2021</td>
<td>124</td>
<td>124</td>
<td>274</td>
<td>42</td>
<td>43</td>
</tr>
</tbody>
</table>

**Mean OPI:** Average scale score for all students that tested. Scores range from 299-399

**% in Each Reporting Category:** confidence level of a student’s likelihood of meeting grade-level expectations
Connecting the progressions

<table>
<thead>
<tr>
<th>Fifth Grade (5)</th>
<th>Sixth Grade (6)</th>
<th>Seventh Grade (7)</th>
</tr>
</thead>
</table>
| S.N.1 Divide multi-digit numbers and solve real-world and mathematical problems using arithmetic.  
S.N.1.1 Estimate solutions to division problems in order to assess the reasonableness of results.  
S.N.1.2 Divide multi-digit numbers, by one- and two-digit divisors, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.  
S.N.1.3 Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal and consider the context in which a problem is situated to select and interpret the most useful form of the quotient for the solution.  
S.N.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication, and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. |
| 6.N.1 Read, write, and represent integers and rational numbers expressed as fractions, decimals, percents, and ratios; write positive integers as products of factors; use these representations in real-world and mathematical situations.  
6.N.1.1 Represent integers with counters and on a number line and rational numbers on a number line, recognizing the concepts of opposites, direction, and magnitude; use integers and rational numbers in real-world and mathematical situations, explaining the meaning of 0 in each situation.  
6.N.1.2 Compare and order positive rational numbers, represented in various forms, or integers using the symbols <, >, and =.  
6.N.1.3 Explain that a percent represents parts “out of 100” and ratios “to 100.”  
6.N.1.4 Determine equivalencies among fractions, decimals, and percents. Select among these representations to solve problems.  
6.N.1.5 Factor whole numbers and express prime and composite numbers as a product of prime factors with exponents. |
| 7.N.1 Read, write, represent, and compare rational numbers, expressed as integers, fractions, and decimals.  
7.N.1.1 Know that every rational number can be written as the ratio of two integers or as a terminating or repeating decimal.  
7.N.1.2 Compare and order rational numbers expressed in various forms using the symbols <, >, and =.  
7.N.1.3 Recognize and generate equivalent representations of rational numbers, including equivalent fractions. |

What additional evidence do our local assessments provide?  
What does evidence of learning look like?  
What are areas that we may need to scaffold?

Math Progressions: Appendix B
### Standard 3: Critical Reading and Writing

Students will apply critical thinking skills to reading and writing.

#### Reading
Students will analyze, interpret, and evaluate increasingly complex literary and informational texts that include a wide range of historical, cultural, ethnic, and global perspectives from a variety of genres.

<table>
<thead>
<tr>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.R.1 Students will determine if the author’s purpose is to entertain, inform, or persuade.</td>
<td>4.3.R.1 Students will determine the author’s purpose (i.e., entertain, inform, persuade) by identifying key details.</td>
<td>6.3.R.1 Students will determine the author’s purpose (i.e., entertain, inform, persuade), and draw conclusions to determine if the author’s purpose was achieved.</td>
<td>7.3.R.1 Students will read works written on the same topic from a variety of historical, cultural, ethnic, and global perspectives and compare the methods the authors use to achieve their purposes.</td>
<td>8.3.R.1 Students will analyze works written on the same topic from a variety of historical, cultural, ethnic, and global perspectives and analyze the methods the authors use to achieve their purposes.</td>
<td></td>
</tr>
</tbody>
</table>

- 3.3.R.2 Students will determine whether a grade-level literary text is narrated in first- or third-person point of view.
- 4.3.R.2 Students will determine whether a grade-level literary text is narrated in first- or third-person point of view (limited and omniscient) and describe its effect.
- 6.3.R.2 Students will evaluate perspective (e.g., historical, cultural, ethnic, and global) affects a variety of literary and informational texts.
- 7.3.R.2 Students will evaluate perspectives (e.g., historical, cultural, ethnic, and global) and describe how they affect various literary and informational texts.

**ELA Progressions:** [PK-5](#), [Grades 3-8](#), [Grades 6-12](#)

**Questions:**
- What additional evidence do our local assessments provide?
- What does evidence of learning look like?
- What areas of unfinished learning might we need to address?
# Connecting the Frameworks

## 5th Grade Introduction

An Introduction to 5th Grade

As students continue their math experience into fifth grade, their learning experience will focus on these central strands: Numbers & Operations, Algebraic Reasoning and Algebra, Geometry and Measurement, and Data & Probability. These strands will be addressed using real-world activities/lessons that warrant hands-on opportunities, while also promoting problem-solving, reasoning, modeling, questioning, and generalizing. This year will build upon students’ fourth-grade experience and is a springboard to middle school math courses.

<table>
<thead>
<tr>
<th>Grade-Level Mathematics Actions and Processes</th>
<th>Descriptions of the Mathematics Actions and Processes provide a sense of what students are doing as they develop into mathematically literate students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested Learning Progression (v2)</td>
<td>This year-long progression provides a sample vision for the learner experience that engages in meaningful, connected mathematics.</td>
</tr>
<tr>
<td>Objective Analysis</td>
<td>Analysis for each grade-level objective is provided in a manner to support deep understanding for the teacher.</td>
</tr>
<tr>
<td>Engagement Strategies</td>
<td>Educators can engage their students in math activities using these strategies.</td>
</tr>
</tbody>
</table>

---

Interpreting State Test Scores- Educator’s Toolkit
Connecting the Frameworks: Objective Analysis

### 5-N-1-1

Estimate solutions to division problems in order to assess the reasonableness of results.

**In a Nutshell**

Students will use estimation to divide a problem. They will need to be familiar with different estimation strategies (i.e. rounding, compatible numbers, front end, and compensation). These division problems will be used in real-world situations.

<table>
<thead>
<tr>
<th>Student Actions</th>
<th>Teacher Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop Strategies for Problem Solving as students reason and discuss which strategies are more efficient in certain situations. Ex. Compatible numbers, rounding, and compensation.</td>
<td>Facilitate meaningful mathematical discourse by asking students to compare and contrast student solution strategies. Ex. Compatible numbers, rounding, or compensation.</td>
</tr>
<tr>
<td>Develop Mathematical Reasoning by explaining which estimated quotients were chosen and why.</td>
<td>Use and connect mathematical representations by highlighting inverse relationships between operations to check solutions.</td>
</tr>
<tr>
<td>Develop Accurate and Appropriate Procedural Fluency by performing mental calculations, e.g. use compatible numbers when performing quotient estimates.</td>
<td>Pose purposeful questions that urge students to evaluate the reasonableness of their results.</td>
</tr>
<tr>
<td>Develop the Ability to Communicate Mathematically by sharing solutions, asking questions, and sharing insights/understandings of meaning of division.</td>
<td>Establish mathematics goals that focus learning on different strategies to estimate quotients.</td>
</tr>
</tbody>
</table>

#### Key Understandings

- Estimate whole numbers.
- Use knowledge of basic facts to help estimate division, i.e. compatible numbers.
- Assess if the result is reasonable.
- Break whole numbers down into equal parts without remainders.

#### Misconceptions

- Have overspecialized knowledge of multiplication or division facts and restricted it to “fact tests” or one particular problem format.
- Think that division is commutative, for example 5 ÷ 3 ≠ 3 ÷ 5.
- Think rounding is the only way to estimate.
- Estimate the answer instead of the problem.
Supporting Tools and Resources
Looking forward

Who tested? Who did not test?

How did students’ learning experiences differ?

Intentional, targeted, and evidence-based next steps to help students thrive and grow

Looking Forward
Toolkits on assessment guidance page

- Overview Guide
- Administrators Toolkit
- Teachers Toolkit
- Families Toolkit
Ready Together Oklahoma

An Action Plan for Supporting Students Through the Pandemic and Beyond

- Statewide Initiatives
- Guidance Documents
- Resources
- Webinars

Learn more at readytogether.sde.ok.gov
Ready Together Oklahoma: Guidance Documents

- What’s the Issue
- Things to Consider
- Attending to Equity
- Recommended Action Steps

For feedback email us at readytogether@sde.ok.gov

How can accelerated learning models support students with unfinished learning?
TeleEDGE recovery series

TeleEDGE Recovery Series – allow participants a real-time option to learn and share with fellow educators around topics such as

▪ supporting student and educator mental health,
▪ assessing unfinished learning,
▪ targeted tutoring, and
▪ supporting special populations.

Sessions are recorded and presentation material can be accessed after each session.
Questions?