

Student Learning Objectives Template

Part 1: Standards and Assessments

Part 1 must be approved by school administration before part 2 is accessible on MyPGS. The majority of time on your SLO should be spent on reviewing data to determine student needs and in determining a quality assessment that is aligned to standards with clear, replicable scoring protocols.

Standards

Success Criteria

- Provides clear explanation why content is an appropriate focus and/or area of need
- Focuses on standards-based essential understandings/skills for the course and grade level
- Represents big ideas or essential understandings/skills students need to attain for success at the next level

*1.1: Content Area

1a: If “Other” was chosen, please specify here

Math

*1.2: Grade Level(s) and/or Course

☐ PreK

☐ 3

☒ 7

☐ 11

☐ K

☐ 4

☐ 8

☐ 12

☐ 1

☐ 5

☐ 9

☐ 13+

☐ 2

☐ 6

☐ 10

*1.3: Selected standards (copied and pasted from NVACs without abbreviating, a minimum of 2 and less than half for course are required)

CCSS.Math. Content.7.NS.A.1 Apply and extend previous understandings of addition and subtraction to...

CCSS.Math. Content.7.NS.A.2 Apply and extend previous understandings of multiplication and division...

CCSS.Math. Content.7. NS.A.3: Solve real-world and mathematical problems involving the four operations with rational numbers.

CCSS.Math.Content.7.EE.B.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies

*1.4: Why are these essential understandings/skills important to focus on, and what information on current student abilities and/or trend data informed the selection of these standards?

Solving Rational Numbers is a foundational concept for Math 7 students which builds upon their prior knowledge from grades 5 and 6 which included operations with fractions and decimals. In Math 7, students are expected to apply and extend previous understanding of fractions to add, subtract, multiply, and divide positive and negative rational numbers. These standards are considered and identified as a foundation in Math 7 and beyond based on the depth of the concepts and the necessary time it takes to master them. In learning to apply and extend previous understanding of operations with rational numbers, students will make sense of problems, persevere in solving them, reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, use appropriate tools strategically, and attend to precision. Students will use mathematical practices and prior knowledge, along with procedural and conceptual problem solving skills to increase and deepen their understanding of rational numbers. Using operations with rational numbers is a NVACS standard for Math 7. In Math 7, students also learn to solve real life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals) and use tools strategically. SBAC data for our school site shows that students in this grade need continued work with these concepts in order to be successful in this grade and beyond. These students have MAP scores that range from 190-237, which shows a need for the content.

Assessments

Success Criteria

- The depth and complexity of the standards are present in the assessment
- Measurable and specific evidence will be used to determine progress toward the goals
- Assessment includes multiple opportunities or items to demonstrate growth toward learning targets

*1.5: Upload Assessment Documents:

- ☒ Baseline and Culminating Assessments
- ☒ Answer Keys/Scoring Rubrics
- ☒ Standards Alignment
- ☒ Translation to 8-level Scale

*1.6: How does your assessment address the depth and complexity of the selected standards?

The assessment requires students to recall and remember information (DOK 1), all the way up to using strategic thinking and reasoning (DOK 3) and extended thinking (DOK 4). By offering a variety of DOK levels and I am allowing all students to show how well they understand the concepts. My assessment is labeled with the DOK level next to each question.

*1.7: What measurable and specific evidence will you use to determine progress toward the goal? (formative process)

Student will take exit tickets and/or multiple choice concept quizzes at the end of each new concept taught, weekly, or bi-weekly, which will provide the data needed for differentiating instruction in my classroom. Based on student performance during daily homework check, exit tickets, concept quizzes, and academic conversations during problem solving, individual participation within a group will allow me to address student needs using flexible grouping. Students are able to teach and learn from their peers during these times allowing them to make more meaningful connections to their own lives.

*1.8: Anticipated start date of instruction

10/1/2017

Enter in MyPGS and click “Submit for Review” when all required fields are completed.

Part 2: Student Population and Growth Targets

(Note: Part 2 cannot be started until Part 1 is complete and approved)

Instructional Interval

*2.1: Start of Instruction

10/8/2017

*2.2: End of Instruction

11/16/2017

*2.3: Is this Interval of Instruction a minimum of six weeks of school (not including holiday breaks and completed by the evaluation deadline)?

Yes

*2.4: On average, how many days per week do you instruct the selected students in the content area for this SLO?

4

*2.5: On average, how many minutes of instruction occur on a given day in the content area for this SLO?

45

Student Population

Success Criteria

- Student strengths, abilities and areas of need related to selected standards are described in a culturally responsive manner
- Analysis demonstrates the teacher believes all students can show growth
- Teacher utilizes evidence of student learning from baseline data and formative process to describe abilities relative to the selected standards
- Uses data to determine student abilities and needs (e.g. test scores/performance from prior years, etc.)

2.6: Now that you have looked at evidence of student performance on the baseline assessment and other data sources, describe the students' strengths, abilities and needs relative to the selected standards.

After reviewing the data and observing student performance on the Rational Numbers baseline assessment, I have selected my 5th period Mathematics 7 class as my target group. The overall scores on the pre-assessment range from 1-3 and students in this target group have MAP scores that range from 190-237.

There were varying levels of ability of operations with rational numbers in this class. Some of the class demonstrated the ability to apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide, rational numbers (7.NS.1 and 7.NS.2). Many demonstrated some knowledge, but struggled applying the operations in a real-world word problem. Many demonstrated very limited to no knowledge of operations with rational numbers regardless of how the problems were presented. Students demonstrating knowledge of 7.NS.1 and 7.NS.2 have MAP scores that range from 221-237. Students demonstrating some knowledge have MAP scores that range from 201-220. Students with very limited to no knowledge have MAP scores that range from 190-199.

Only a few students successfully solved the pre-assessment real-world and mathematical problems involving all four operations with rational numbers (7.NS.3). Some demonstrated some knowledge of this content standard and others had very limited to no knowledge when attempting to solve the real-world mathematical problems on this pre-assessment. The MAP scores again were similarly aligned with each student's ability demonstrated on the baseline pre-assessment.

Only a few, demonstrated some knowledge of solving real-world and mathematical problems using numerical and algebraic expressions and equations (7.EE.3). These students were able to successfully complete the problems that required only computation, but were not successful in solving the real-world word problems. Most of the class had very limited to no knowledge of NVACS 7.EE.3 regardless of whether it was presented as a real-world word problem or it was purely computational.

Students in this targeted group have MAP scores that range from 190 - 237. The varying levels of abilities within this class requires me to differentiate my instruction. Flexible instructional grouping has proved to be extremely beneficial strategy for these students because it allows me to maximize instructional time and address the overall group needs as well as individual needs. Students become more involved, engaged, and confident because they are able to address some of their own needs and questions within their groups rather than as a whole class. Students participate in a variety of activities and assignments that require peer pair and share, group collaboration, and academic language to be used in the math conversations which has created a sense of community within the classroom.

Most of the students in this class work extremely hard and take interest in their learning which allows them to grow as math students. They seek out the help they need to learn old and new concepts abstractly as well as conceptually, so they are able to build upon their prior knowledge, deepen their understanding and make real world connections.

Student Growth Targets

Success Criteria

- Uses baseline or pretest data to determine appropriate growth/proficiency target with clear explanation of how targets are determined
- Targets are realistically achievable given the timeframe and identified 8-level scale
- Targets are rigorous yet attainable, developmentally appropriate, and measurable
- Multiple sources of data used to determine growth targets for all students are identified in the SLO (qualitative and quantitative)
- Includes explanations for growth/proficiency targets that establish and differentiate expected performance for identified students

*2.7: How did the data inform your choice in growth targets and target levels for students?

Growth targets for each student were set individually based on many factors. These include, pre-assessment data, MAP data, formal and informal classroom assessments, and classroom observations. I believe that all students in this class will grow at least 1-2 levels based on these factors.

Four students were given a goal to grow 3 achievement levels which would place them in achievement levels of low meeting standards (6) to high meeting standards (7). This target demonstrates the level of rigor appropriate for these students. Based on the baseline pre-assessment, MAP data, formal and informal classroom assessments, and classroom observations, these students have demonstrated they are capable of attaining this level of growth through hard work and motivation. These students all have MAP scores above the grade level benchmark score.

Sixteen students were given a goal to grow 3 achievement levels which would place them in achievement levels of high approaching standards (4) to high meeting standards (6). This target demonstrates the level of rigor appropriate for these students who are consistently emerging/approaching standards on the MAP and who have consistently not been meeting standards on classroom grade level common assessments. These students all have MAP scores below the grade level benchmark score and were not meeting standards on the baseline pre-assessment.

Seven students were given a goal to grow 2 achievement levels which would place them at low approaching standards (3) to high approaching standards (4). This level of growth is appropriate based on pre-assessment scores of emerging, and because these students consistently have not met standards on classroom grade level common assessments and are far below the grade level benchmark on their MAP.

Three students have been given a goal of 1 achievement level which would place them at high emerging standards (2). This growth target is appropriate based on the students' performance on the baseline pre-assessment, as well as, formal and informal assessments within the classroom. This particular student does not have any MAP data.

Name: _____ Period: _____ Date: _____

Math 7 - Module 3: Rational Numbers Pre-Assessment

7. NS.1 Apply and extend previous understandings of operations with fractions to add, subtract rational numbers.
Multiple Choice Questions: 1 point each **Score: 1 2 3 4 5 6 7 8 9**

1. Subtract. Express your answer in simplest form. (DOK 1)

$$2\frac{5}{11} - 1\frac{3}{11}$$

a. $1\frac{2}{11}$

b. $1\frac{5}{22}$

c. $3\frac{8}{11}$

d. $\frac{13}{22}$

2. Subtract. Express your answer in simplest form. (DOK 1)

$$\frac{15}{16} - \frac{3}{8}$$

a. $\frac{3}{4}$

b. $\frac{3}{2}$

c. $\frac{9}{16}$

d. $\frac{12}{8}$

3. A water faucet is turned $\frac{1}{7}$ to the right and then $\frac{3}{4}$ to the right again. How far is the water faucet turned? (DOK 2)

a. $\frac{13}{14}$

b. $\frac{25}{28}$

c. $\frac{17}{28}$

d. $\frac{4}{11}$

4. Find the difference. (DOK 1)

$$6\frac{1}{3} - 2\frac{1}{5}$$

a. $\frac{3}{32}$

b. $4\frac{2}{15}$

c. $5\frac{2}{15}$

d. 5

5. The elevator in a downtown skyscraper goes from the top floor down to the lowest level of the underground parking garage. If the building is 490 feet tall and the elevator descends 540 feet from top to bottom, how far underground does the parking garage go? (DOK 2)

a. 1,030 feet

b. 50 feet

c. 1020 feet

d. 40 feet

6. The newest fast-food chain in town, Sardines-to-Go, lost \$6024 in its first three months of business. (DOK 3 ~ 4points total)

Part A: What was the average monthly loss? (2 points)

Part B: If the owner decides to close the restaurant when the losses reach \$10,000, and if losses continue at this same rate, after how many more months will the restaurant close? (2 points)

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|-----|
| |
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |
| 6a. |
| 6b. |

7.NS.2 Apply and extend previous understandings of operations with fractions to multiply, and divide rational numbers.

Multiple Choice Questions: 1 point each

Score: 1 2 3 4 5 6 7 8 9

7. Multiply. Express your answer in simplest form. (DOK 1)

$$-\frac{1}{4} \cdot \frac{2}{3}$$

a. $-\frac{3}{8}$

b. $-\frac{1}{6}$

c. $\frac{1}{6}$

d. $\frac{3}{8}$

8. Multiply. Express your answer in simplest form. (DOK 1)

$$\frac{5}{8} \left(-\frac{7}{12} \right)$$

a. $-\frac{35}{96}$

b. $-\frac{60}{56}$

c. $\frac{12}{20}$

d. $-\frac{2}{4}$

9. Divide. Express your answer in simplest form. (DOK 1)

$$\frac{1}{6} \div \frac{1}{3}$$

a. $\frac{1}{18}$

b. $\frac{1}{9}$

c. $\frac{1}{2}$

d. 2

10. Divide. Express your answer in simplest form. (DOK 1)

$$6\frac{2}{3} \div \frac{4}{9}$$

a. $\frac{7}{27}$

b. $1\frac{1}{3}$

c. $2\frac{26}{27}$

d. 15

11. Miguel spends \$35 a day for 4 days. He earns \$21 a day for 5 days. Does Miguel end up with more or less money than he started with? By how much? (DOK 2)

a. Miguel ends up with \$35 more than he started with.

b. Miguel ends up with \$35 less than he started with.

c. Miguel ends up with \$91 more than he started with.

d. Miguel ends up with \$91 less than he started with.

12. A shelf can support $3\frac{3}{4}$ pounds. (DOK 3~4 points total)

Part A: If a book weighs $\frac{3}{8}$ of a pound, how many books can it hold? (2 points)

Part B: If you add more support so the shelf can now hold $5\frac{1}{4}$ pounds, how many books can the shelf hold now?

Show your work. (2 points)

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| 7. |
| 8. |
| 9. |
| 10. |
| 11. |
| 12a. |
| 12b. |

7.NS.3 Solve real-world and mathematical problems involving the one to all four operations with rational numbers.

Multiple Choice Questions: 1 point each Score: 1 2 3 4 5 6 7 8 9

13. Multiply. Express your answer in simplest form. (DOK 1)

$$-\frac{7}{9} \cdot \frac{1}{2}$$

a. $-\frac{7}{18}$

b. $-\frac{14}{9}$

c. $-\frac{7}{3}$

d. $-\frac{7}{54}$

14. Marcus hikes at a rate of 2 miles per hour. If he hikes for $6\frac{1}{3}$ hours, how many miles will he hike? (DOK 2)

a. $12\frac{1}{3}$ miles

b. 14 miles

c. $12\frac{2}{3}$ miles

d. $8\frac{1}{3}$ miles

15. The table shows the different bids Kevin has received for fixing the sprinklers and trimming the bushes and trees. What is the average bid? (DOK 2)

| Bid Number | Bid Amount |
|------------|------------|
| Bid 1 | \$180.47 |
| Bid 2 | \$160.16 |
| Bid 3 | \$210.50 |
| Bid 4 | \$260.00 |
| Bid 5 | \$200.37 |

a. \$112.93

b. \$1,011.50

c. \$564.65

d. \$202.30

16. How many times does $\frac{1}{2}$ go into $1\frac{1}{4}$? (DOK 2)

a. $\frac{2}{5}$

b. $\frac{5}{8}$

c. $\frac{3}{4}$

d. $2\frac{1}{2}$

17. Tamela's school day is $6\frac{3}{4}$ hours. She has seven classes that are $\frac{3}{4}$ hour long. How many hours is Tamela not in class while she is at school? (DOK 2)

a. $1\frac{1}{2}$

b. $5\frac{1}{4}$

c. 6

d. $18\frac{3}{4}$

18. A science experiment has a catapult launch a ball. The result is shown in the table. (DOK 3 ~ 4 points total)

- a. What is the average distance of the 5 attempts? Show your work. (2 points)

- b. How far does the ball have to travel on the sixth attempt so that the average of the 6 attempts is 50.9 meters? Explain. (2 points)

| Attempt | Distance (meters) |
|---------|-------------------|
| 1 | 50.7 |
| 2 | 49.4 |
| 3 | 52.3 |
| 4 | 48.9 |
| 5 | 51.6 |

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| 13. |
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| 14. |
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| 15. |
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| 16. |

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| |
| 17. |

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|------|
| |
| |
| 18a. |
| |
| 18b. |

Multiple Choice Questions: 1 point each

c. Is your answer from part b reasonable? Explain. (1 point)

Math 7 - Module 3: Rational Numbers

Answer Section

1. A
2. C
3. B
4. B
5. B
- 6.

Part A: $-\$2008$
 $-6024 \div 3 = -2008$

Part B: 2 more months
 $-6024 + (-2008) = -8032$
 $-8032 + (-2008) = -10,040$

7. B
8. A
9. C
10. D
11. B
12. **Part A:** 10 books

$$3\frac{3}{4} \div \frac{3}{8}$$

$$\frac{15}{4} \div \frac{3}{8}$$

$$\frac{15}{4} \times \frac{8}{3}$$

$$\frac{15 \times 8}{4 \times 3}$$

$$\frac{120}{12}$$

Part B: 14 books

$$5\frac{1}{4} \div \frac{3}{8}$$

$$\frac{21}{4} \div \frac{3}{8}$$

$$\frac{21}{4} \times \frac{8}{3}$$

$$\frac{21 \times 8}{4 \times 3}$$

$$\frac{168}{12}$$

13. A
14. C
15. D
16. D
17. A

$$18. \quad a. \quad \frac{50.7 + 49.4 + 52.3 + 48.9 + 51.6}{5} = \frac{252.9}{5}$$

$$= 50.58$$

The average of the 5 attempts is 50.58 meters.

- b. The sixth attempt would have to travel 52.5 meters because 52.5 is the difference between the sum of the five attempts and what the sum of the six attempts has to be in order for the average to be 50.9 meters.

$$50.9 \times 6 = 305.4$$

$$305.4 - 252.9 = 52.5$$

19. D

20. B

21. A

22. B

23. B

24. a. $-3.5 + 2 \times -2.5 + 3.5$

- b. Use the commutative property of addition to move $+3.5$ to the left of 2×-2.5 .

$$-3.5 + 2 \times -2.5 + 3.5 = -3.5 + 3.5 + 2 \times -2.5$$

Since -3.5 and 3.5 are additive inverses, their sum is 0 by the additive inverse property.

$$-3.5 + 3.5 + 2 \times -2.5 = 0 + 2 \times -2.5$$

Use the additive identity property to simplify the expression.

$$0 + 2 \times -2.5 = 2 \times -2.5$$

$$= -5$$

The air temperature at 10 a.m. is -5°C .

25. a. Possible answer: Round 252 to 300, $25\frac{3}{4}$ to 25, and $4\frac{1}{2}$ to 5. The first train travels $25 \times 5 = 125$ miles.

So, the second train travels $300 - 125 = 175$ miles and, thus, the second train travels $\frac{175}{5} = 35$ miles per hour.

- b. The speed of the other train is $30\frac{1}{4}$ miles per hour.

Convert $25\frac{3}{4}$ and $4\frac{1}{2}$ to decimals.

$$25\frac{3}{4} = 25.75; 4\frac{1}{2} = 4.5$$

The first train travels $25.75 \times 4.5 = 115.875$ miles.

So, the second train travels $252 - 115.875 = 136.125$ miles.

Divide 136.125 by 4.5.

$$\frac{136.125}{4.5} = 30.25$$

Convert 30.25 to a mixed number.

$$30.25 = 30\frac{1}{4}$$

- c. Yes, because the answer from part b, $30\frac{1}{4}$, is close to the estimate of 35.

Mathematical Problem-Solving Rubric

All multiple-choice problems are worth 1 point each with the short answer questions (#6,#12,#18,#24,#25) being worth 4 points each per the given rubric.

| 4 Exceeds Standards | 3 Meets Standards | 2 Approaching Standards | 1 Minimal Understanding | 0 No Attempt |
|--|---|--|--|-------------------------------------|
| The student demonstrates evidence of mathematical thinking on all parts of the problem and correctly solves all parts of the problem with evidence of his or her solution. | The student demonstrates evidence of mathematical thinking on all parts of the problem and correctly solves one part of the problem with evidence of his or her solution but does not correctly solve the other part(s) of the problem. | The student demonstrates correct solution for one part of the problem with evidence of his or her solution, but does not show evidence of completing the other part(s) of the problem. | The student demonstrates some evidence of mathematical thinking but shows no evidence of a correct solution for any part of the problem. | No evidence of attempting the task. |

| Assessment Rubric Conversion to WCSD 8-Level Standards-Based Reporting | | |
|---|---------------------|---|
| 7.NS.1, 7.NS.2, 7.NS.3, 7.EE.3 Assessment 40 points possible | | |
| Exceeding Standards | High - 38-40 points | 8 |
| | Low - 36-38 points | 7 |
| Meeting Standards | High - 32-35 points | 6 |
| | Low - 28-31 points | 5 |
| Approaching Standards | High - 22-27 points | 4 |
| | Low - 15-21 points | 3 |
| Emerging Standards | High - 8-14 points | 2 |
| | Low - 1-7 points | 1 |

| Student Name | Baseline Level | Baseline Max | Culminating Target | Culminating Max |
|--------------|----------------|--------------|--------------------|-----------------|
| A | 2 | 8 | 5 | 8 |
| B | 1 | 8 | 2 | 8 |
| C | 2 | 8 | 5 | 8 |
| D | 1 | 8 | 4 | 8 |
| E | 3 | 8 | 6 | 8 |
| F | 2 | 8 | 5 | 8 |
| G | 2 | 8 | 4 | 8 |
| H | 2 | 8 | 5 | 8 |
| I | 3 | 8 | 6 | 8 |
| J | 3 | 8 | 6 | 8 |
| K | 1 | 8 | 3 | 8 |
| L | 2 | 8 | 5 | 8 |
| M | 3 | 8 | 6 | 8 |
| N | 1 | 8 | 3 | 8 |
| O | 3 | 8 | 5 | 8 |
| P | 2 | 8 | 5 | 8 |
| Q | 2 | 8 | 6 | 8 |
| R | 3 | 8 | 7 | 8 |
| S | 1 | 8 | 3 | 8 |
| T | 1 | 8 | 4 | 8 |
| U | 3 | 8 | 6 | 8 |
| V | 1 | 8 | 4 | 8 |
| W | 2 | 8 | 4 | 8 |
| X | 3 | 8 | 7 | 8 |
| Y | 1 | 8 | 2 | 8 |
| X | 2 | 8 | 6 | 8 |
| AA | 1 | 8 | 2 | 8 |
| BB | 2 | 8 | 5 | 8 |
| CC | 2 | 8 | 4 | 8 |
| DD | 2 | 8 | 5 | 8 |