

COMMON FORMATIVE ASSESSMENT PLANNING TEMPLATE

--FIRST DRAFT--

Grade Level or Course: 4

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Assessment Topic: Measurement

Selected Power Standards: List standards by number and include the full text here. Then “unwrap” to identify what students need to know and be able to do. Underline the concepts (important nouns or noun phrases) and circle the skills (verbs).

- Carry out simple conversions within customary system
- Estimate and measure length, weight, capacity
- Determine elapsed time requiring unit conversions

Graphic Organizer of “Unwrapped” Concepts and Skills

Concepts: Need to Know about Measurement Skills & Tools

Conversions –

- Length (inches, feet, yards)
- Weight (ounces, pounds, tons)
- Capacity (cups, pints, quarts, gallons)
- Fluid ounces
- Time (Hours to minutes, days to weeks)

Estimate and measure

- Length (nearest $\frac{1}{4}$ inch)
- Capacity (nearest $\frac{1}{4}$ cup)
- Temperature (nearest degree – Fahrenheit and Celsius)
 - Recognize key temperatures (room, body, freezing, boiling)
- Weight

Elapsed time

- Minutes to hours
- Days, weeks, month

Skills: Be able to use tools to determine, convert, estimate, measure.

(Next to each skill, write number in parentheses indicating approximate level of Bloom's Taxonomy of thinking skills. Refer to Bloom's Taxonomy resource in supporting documents.)

(4) CONVERT (length, weight, capacity, time; Customary system)

(4) ESTIMATE (length, weight, capacity, temperature)

(3) MEASURE (Length, capacity, weight)

(4) DETERMINE - CONVERT (elapsed time with conversions)

Big Ideas from “Unwrapped” Power Standards

1. You can use simple conversions of units of measurement to solve everyday problems.

2. Each type of measurement requires a different tool

Essential Questions Matched to Big Ideas

1. How can measurement skills and tools be used to solve problems?

2. What tool would you use for measuring weight, length, capacity, time, and temperature? Explain.

SECTION 1: Selected-Response Items—Design multiple choice, matching, true-false, and/or fill-in items to assess student understanding of the following “unwrapped” concepts and skills represented on your graphic organizer. Indicate level of thinking skill in parentheses. *Match assessment items to rigor of skill level.* (Use additional space as needed.)

1. Terry needs 2 lbs. of chocolate chips to make cookies. Which package of chocolate chips should she buy?
 - a. 8 oz.
 - b. 16 oz.
 - c. 32 oz.
 - d. 64 oz.

2. A bag of jellybeans weighs 16 ounces. This bag weighs _____.
 - a. 1 pound
 - b. 1 $\frac{1}{2}$ pounds
 - c. 2 pounds
 - d. 2 $\frac{1}{2}$ pounds

3. Mary needs 2 yards of ribbon to make an apron. Ribbon is sold by the foot. How many feet does she need to buy?
 - a. 2 feet
 - b. 3 feet
 - c. 6 feet
 - d. 8 feet

4. Peter bought 18 feet of wire. How many yards did he buy?
 - a. 3 yds.
 - b. 4 yds.
 - c. 5 yds.
 - d. 6 yds.

5. How many inches are in 2 feet?
 - a. 12
 - b. 20
 - c. 24
 - d. 32

6. A bookcase is 48 inches wide. How many feet is this?
- a. 2
 - b. 3
 - c. 4
 - d. 5
7. Joe milked a cow and got 4 quarts of milk. How many gallons of milk did he get?
- a. $\frac{1}{2}$ gallon
 - b. 1 gallon
 - c. $1\frac{1}{2}$ gallons
 - d. 2 gallons
8. A recipe called for 3 pints of cream. How many cups were needed?
- a. 2
 - b. 4
 - c. 6
 - d. 8
9. Kim bought 5 qts. of punch for a party. How many cups can she fill?
- a. 10
 - b. 20
 - c. 30
 - d. 40
10. Juan read his book everyday for 3 weeks. How many days did he read?
- a. 7 days
 - b. 15 days
 - c. 21 days
 - d. 27 days
11. How many minutes equal 120 seconds?
- a. 2 min.
 - b. 3 min.
 - c. 4 min.
 - d. 5 min.

12. The weight of a car would be approximately _____.
- a. 2 oz.
 - b. 2 T
 - c. 20 lb.
 - d. 2,000 oz.
13. The temperature of a freezer would MOST LIKELY be about _____.
- a. 32 degrees F
 - b. 32 degrees C
 - c. 100 degrees C
 - d. 98 degrees F
14. Which is the MOST REASONABLE estimate for the length of a couch?
- a. 6 mi.
 - b. 6 in.
 - c. 6 yds.
 - d. 6 ft.
15. The best unit to measure the capacity of a swimming pool is _____.
- a. quarts
 - b. yards
 - c. gallons
 - d. tons
16. Which is the MOST REASONABLE estimate of the distance between two towns?
- a. 5 yds.
 - b. 5 miles
 - c. 5 ft.
 - d. 5 in.
17. Measure this line to the nearest $\frac{1}{4}$ of an inch.
18. Measure this line to the nearest $\frac{1}{2}$ of an inch.

19. What is the measurement of this measuring cup to the nearest $\frac{1}{2}$ cup?

20. What temperature does the thermometer show?

21. How much time has elapsed from 8:25-10:40?

- a. 2:00
- b. 2:15
- c. 2:30
- d. 2:45

22. What tool would you use to measure the length of a classroom?

- a. ruler
- b. scale
- c. yardstick
- d. measuring cup

23. Match the tool you would use to do each task.

Tool

- 1. scale
- 2. measuring cup
- 3. yardstick
- 4. clock
- 5. thermometer
- 6. ruler

Task.

- a. The amount of liquid in a jar
- b. Length of a pencil
- c. How much an apple weighs
- d. Your body temperature
- e. The length of a football field
- f. How long it takes to walk to school

Answer Key

1. c
2. a
3. c
4. d
5. b
6. c
7. b
8. c
9. a
10. c
11. a
12. b
13. a
14. d
15. c
16. b
- 17.
- 18.
- 19.
- 20.
21. c
22. d
23.
 1. c
 2. a
 3. e
 4. f
 5. d
 6. b

SECTION 2: Extended Constructed-Response—Design an extended-response item to evaluate student understanding of the following “unwrapped” concepts and skills represented on your graphic organizer. Include level of thinking skill in parentheses. *Match item to rigor of skill level.* Evaluate student work using the Task-Specific Scoring Guide below (to be completed).

1) Connie needs to buy fencing to go around the outside of her garden. The figure below represents her garden. Each inch on the drawing represents one foot. Measure the garden to find out how many feet of fencing she will need.

2) When Connie got to the lumber yard she found that the type of fencing she needs is only sold by the yard. How many yards of fencing will she need to buy?

Answer the question in a complete sentence giving the number of feet and the number of yards Connie will need for her fencing.



(To the teacher: Draw a rectangle that is 6 inches by 3 inches.)

Answer: Connie will need to buy 6 yards (18 feet) of fencing,

Task-Specific Scoring Guide:

Exemplary

- All “Proficient” criteria *plus*:
-
-
-

Proficient

-
-
-
-
-
-

Progressing

- Meets _____ of the “Proficient” criteria

Beginning

- Meets fewer than ___ of the “Proficient” criteria
- Task to be repeated after remediation

Teacher’s Evaluation_____

Comments regarding student’s performance:

SECTION 3: Short Constructed-Response

Note to Teachers: This portion of the common formative assessment requires students to demonstrate their *integrated* understanding of all the “unwrapped” concepts and skills from the targeted Power Standards by expressing their understanding of the Big Ideas in their own words. Copy your planned Essential Questions (and corresponding Big Idea responses) for your own reference in the space provided.

Student Directions: Write a Big Idea response for each of the following Essential Questions. Include supporting details and any vocabulary terms from the “unwrapped” concepts you have been learning for each response. Your responses will be evaluated using the Generic Scoring Guide below.

Generic Scoring Guide:

Exemplary

- All “Proficient” criteria *plus*:
- Makes connections to other areas of school or life
- Provides example(s) as part of explanation

Proficient

- States Big Ideas correctly in own words
- Provides supporting details for each one
- Includes vocabulary of “unwrapped” concepts in explanation

Progressing

- Meets 2 of the “Proficient” criteria

Beginning

- Meets fewer than 2 of the “Proficient” criteria
- Task to be repeated after remediation

Teacher’s Evaluation _____

Comments regarding student’s performance:

Design Team Reflections after Administration of Assessment to Students

1. Which assessment items produced the results we intended?
2. Which items do we need to revise?
3. Regarding the design, administration, scoring, and analysis of the assessment, what worked? What didn't?
4. What do we need to do differently next time?
5. What should we again do the same?