Curriculum Sample Template
Max. 8 Pages

Grade Level	4	**Content Area**	**Mathematics**
Course Title (grades 9-12 Only)			
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Mathematical Practices--4.MP.2. Reason abstractly and quantitatively. 4.MP.5. Use appropriate tools strategically. 4.MP.6. Attend to precision		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	• Direct Instruction: Direct Instruction includes features which support the other instructional elements, such as the ability grouping through the multi-age multi-grade classroom. Students are grouped and re-grouped based on their rate of progress through the program. Frequent assessment is imbedded in direct instruction where curriculum-based assessments help place students in ability groups and identify students who require additional intervention. • Hands-On Project-Based Methods: Hands-On Project-Based Methods with tangible hands-on materials will be applied to relate the curriculum and standards to real life and make them functional. • Cooperative Learning Groups: Students of different abilities will work together in small groups of 2-5 children. They will be taught to learn from one another and share ideas and responsibilities. *Students who are on IEPs may receive modifications or accommodations as stated or may need a slower pace of instruction with more repetition. Students may be given supplementary curriculum and various modalities to assist in grasping the concepts such as visuals, manipulatives, or a task-analysis that will break down the steps needed to assist in comprehension and application of the concept. This also may include those students who may have a difficult time grasping the concepts who are not on IEPs.		
Standard Number and Description *List the Number* and the full description for the Required Standard or Science Performance Objective listed in section A.6.*	Grade: 4.MD.2 Domain: Measurement & Data (MD) Cluster: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit Standard: #2 - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		
Materials/Resources Needed	Materials/Resources Needed— white boards and markers; math notebooks; various measurement tools such as quart/liter measuring cup, meter/yard stick, kilogram/pound weights, etc,		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	**Instructional Strategies**	**Student Activities**
1	Review Measurements Hook: Teacher will use direct instruction to engage students into the lesson by accessing prior knowledge. Present various items and ask how long/heavy they are, and then ask what they would use to measure the items. For example, hold up a book and ask for its approximate length and weight; or ask how far it is from one town to the next or from the school to another building. Then, ask students how they would find its actual length or weight, where feasible. Display various containers and ask what their capacity is. Use examples that liters, gallons, quarts, pints. Explain that student will be learning about measurement of various types (length, volume, weight, time)---but first they will review concepts previously learned. Review Conversion Factor Display an item again and ask for its measurement. If student gives measurement in larger unit, ask for it in a smaller unit and if student gives measurement in smaller unit, ask for the larger unit (ie, if given answer of 3 meters or 3 yards, ask for length in centimeters or inches, respectively). Elicit conversion factors and abbreviations from students. Draw a table on board, showing measurement categories (length, volume, weight, time). Ask students to copy the table in math notebooks. Teacher will use direct instruction by discussing methods for converting from a larger unit of measurement to a smaller one. Remind students that we will simplifying measurements to a smaller unit (ie meters to cm; feet to inches) . For some measurements, explain that conversion will be in steps. For instance, finding the number of minutes in 2 days (convert days to hours to minutes). Provide a few examples with compound units. The first value (with the larger unit) is multiplied by the conversion factor and the product added to the value (convert measurements involving liters and milliliters to milliliters). Discuss methods for converting from a smaller unit of measurement to a larger one. Provide examples using measurements where the conversion factor divides evenly (5000 g / 1000 = 5 kg). Review concepts and discuss material to be covered the next day.	Students, drawing on prior knowledge, participate by answering questions. Students answer questions regarding larger and smaller units. Students give factors and abbreviations. Students copy measurement table in math notebooks. Students use white boards to solve example problems; then raise up to show answers. Students use white boards to solve example problems; then raise up to show answers.

2	Direct Instruction: Remind students about previous lesson when converting a measurement evenly. Explain that not all problems convert evenly. Provide an example in which the conversion factor does not divide evenly, so the answer is in compound units. Remind students that the value will be split into a multiple of the conversion factor and the remainder (ie 140 min = 120 min + 20 min = 2 hr 20 min). Direct Instruction: Briefly review addition and subtraction of compound units (learned in Math 3B.) Demonstrate addition of compound units. Explain that we first add the values for the larger measurement units, then for the smaller measurement units, converting if necessary. Direct Instruction: Provide a subtraction example demonstrating that we first subtract the larger measurement units, then the smaller units, converting if necessary. End instruction by reviewing concepts and explain that we will learn to multiply compound units	Guided Practice: Then provide examples for students to practice using white boards. Guided Practice: Provide a few addition examples on the board. Students will answer on whiteboards, showing their work. Independent Work: Allow students to practice some examples, allowing students to choose a technique to add smaller units (add cm to get cm, then convert to m; or make m with remainder of cm) using white boards. Guided Practice: Provide a few subtraction examples allowing students to practice a few problems on white boards.
3	Hook: Engage students by reviewing concepts reviewed during Lessons 1 & 2 Direct Instruction: Look in Textbook showing how to multiply compound units. Demonstrate that we multiply the large unit, then the small unit by the same factor (1 kg 200 g x 3= 1kg x 3 and 200g x 3). Model several problems for students. Model how to complete word multiplication word problem, picking out critical words necessary to aid in solving the problem. Assign practice word problems for students to complete in small groups. Whole Class Activity: As a class, go over the problems on the board. One member from each group is chosen to write one problem on the board. Assign problems from workbook for homework.	Guided Practice: Provide a few examples to work problems together. Guided Practice: Provide a few examples to work as a group. Groups of 2 or 3: Give students problems from the workbook to complete. Tell class to write problem on paper independently; then show answers to each other. Tell students to make sure all group members have the same answer before going on to the next problem. Teacher floats around the room monitoring groups for understanding. One member from each group write one problem on the board. In turn, students explain the work done to solve the problem Check each groups answers as presented on the board for the class.
4	Review Homework from previous night. Choose students to show work on board for whole class discussion. Teacher directs students, in turn, to explain their work. Teacher supports students as they	Students write problems on board and explain how they solved the problem.

	explain work and answer questions. Direct Instruction: Explain that today's lesson is about dividing compound units. Explain that to divide compound units, you must first divide the larger unit. When the larger unit is a direct multiple of the divisor, they can divide the larger unit; then go on to divide the smaller unit (ie 6 hr 20 min / 2; 6 hr/2= 3 hr; 20 min/2=10 min; answer 3 hr 10 min). Next, show how to divide a larger unit when it is not an exact multiple of the divisor, showing there will be a remainder, which needs to be converted to the smaller unit and added to the small unit part of the compound unit (ie 7 hr 20 min/2; 6 hr 60 min/2= 3 hr 30 min; 20 min/2=10 min; then add 3 hr 30 min + 10 min = 3 hr 40 min) Direct Instruction: Model how to complete division word problem, picking out critical words necessary to aid in solving the problem. Whole Class Activity: As a class, go over the problems on the board. One member from each group is chosen to write one problem on the board. Assign problems from workbook for homework.	Students answer questions. Guided Practice: Solve several problems involving units with direct multiples of the divisor. Solve a variety of problems using measurements such as liters/milliliters, yds/ft, lb/oz. Students write steps in notebook. Guided Practice: Solve several problems involving units with direct multiples of the divisor. Solve a variety of problems using measurements such as liters/milliliters, yds/ft, lb/oz. Students write steps in notebook. Guided Practice: Solve a few word problems with student participation. Students write problems in math notebook. Groups of 2 or 3: Give students problems from the workbook to complete. Tell class to write problem on paper independently; then solve together. Tell students to make sure all group members have the same answer before going on to the next problem. Teacher floats around the room monitoring groups for understanding. One member from each group write one problem on the board. In turn, students explain the work done to solve the problem Check each groups answers as presented on the board for the class.
5	Review Homework from previous night. Choose students to show work on board for whole class discussion. Teacher directs students, in turn, to explain their work. Teacher supports students as they explain work and answer questions. Teacher assigns word problems involving addition, subtraction, multiplication and division of compound units from workbook to solve in class. After a period of time (20 – 30 min), choose students to write problem on board. Teacher assigns homework from workbook.	Students work independently, writing & solving problems in notebook. Students show work on board and explain how they solved problems.
Summative Assessments	Review homework assignment from the night before. Students are given a Review paper with a mixture of word problems involving four operations. Teacher walks around room observing student work, helping those who may not understand concepts fully. Afterward, have students write problems on board. Finally, let students know that there will be a test the next day solving word problems involving compound units and 4 operations.	Independent work: Students solve problems on various worksheets.
Mastery Level	**A student needs to earn 80% of the points possible to be considered to have mastered the standard.**	

Summative Assessment Items: *Attach here.* For each summative assessment item, include an answer key or scoring rubric describing how points are to be awarded.

Summative Assessment 1: Measurement Assessment

1. Multiply in compound units.
   (a) 3 km 200 m x 5
   (b) 4 l. 300 ml x 4
   (c) 2 h 20 min x 5
   (d) 5 kg 200 g x 3
   (e) 6 m 20 cm x 6
   (f) 3 yd 2 ft x 7
2. Divide in compound units.
   (a) 2 l. 240 ml ÷ 2
   (b) 5 km 300 m ÷ 2
   (c) 1 h 30 min ÷ 5
   (d) 4 kg 500 g ÷ 3
   (e) 2 m 60 cm ÷ 4
   (f) 4 ft 3 in. ÷ 3
3. Mrs. Gray used 2 bottles of syrup to make drinks.
   Each bottle contained 1 l. 275 ml of syrup.
   How much syrup did she use?
4. Ian bought 3 kg 570 g of beans.
   He packed them equally into 3 bags.
   What was the weight of the beans in each bag?
5. Henry spent 3 hours 30 minutes every morning to paint his house.
   He finished painting his whole house in 5 mornings.
   How much time did he spend to paint his whole house?
6. A pineapple weighs 1 kg 800 g.
   A watermelon is3 times as heavy as the pineapple.
   (a) What is the weight of the watermelon?
   (b) What is the total weight of the two fruits?
7. Morgan works 8 hours 30 minutes everyday in a factory.
   She is paid $5 each hour.
   (a) How many hours does she work for 6 days?
   (b) How much does she earn for 6 days?
8. A piece of rope 3 m 66 cm long was cut into 2 pieces.
   The longer piece was twice as long as the shorter piece.
   What was the length of the longer piece?
9. Hillary used 2 bags of sugar to make 8 cakes.
   One bag contained 1 kg 240 g of sugar and the other contained 1 kg 160 g of sugar.
   If she used the same amount of sugar for each cake, how much sugar did she use for each cake?
10. A meter of ribbon cost $4. Mary bought 2 pieces of ribbon each of length 3 m 50 cm. How much did she pay for the 2 pieces of ribbon?

Scoring Rubric: One point given for each problem for a total of 22 points.

A = 18 (80%) Mastery
B = 16 – 17
C = 14 – 15
D = 12 – 13
F = 11 and below

Measurement Assessment:

Answer Key

1. (a) 16 km
   (b) 17 l. 200ml
   (c) 11 h 40 min
   (d) 15 kg 600 g
   (e) 37 m 20 cm
   (f) 25 yd 2 ft
2. (a) 1 l. 120 ml
   (b) 2 km 650 m
   (c) 18 min
   (d) 1 kg 500 g
   (e) 65 cm
   us (f) 1 ft 5 in.
3. 2 l. 550 ml
4. 1 kg 190 g
5. 17 h 30 min
6. (a) 5 kg 400 g
   (b) 7 kg 200 g
7. (a) 51 h
   (b) $255
8. 2 m 44 cm
9. 300 g
10. $28

Summative Assessment 2:

Summative Assessment 2:

Name: _____ Class: _____

Question 1

A chocolate cookie has a mass of 12 gram. What is the mass of 50 cookies?

A chocolate cookie has a mass of ____ gram. What is the mass of _____ cookies?

Question 2

Mrs Lice packed 3kg500g of rice equally into 5 bags. How much rice was there in each bag?

Mrs Lice packed _____ of rice equally into _____ bags. How much rice was there in each bag?

Question 3

The volume of 1 can of Pepsi is 400 ml. What is the volume of 10 cans?

The volume of ____ can of Pepsi is _____ ml. What is the volume of _____ cans?

Question 4

A bottle of water has a volume of 0.75 liters. What is the volume of 5 bottles?

A bottle of water has a volume of _____ liters. What is the volume of _____ bottles?

Question 5

Ahmed runs 1.6km every day. How far does he run in 5 days?

Ahmed runs _____ every day.
How far does he run in _____ days?

Answers

Q 1 : 600 grams

Q 2 : 700 grams

Q 3 : 4 liters

Q 4 : 3 liters 750 milliliters

Q 5 : 8 kilometers

Scoring Rubric:
4 points for each problem for a total of 20 points

A = 18 (80%) Mastery
B = 16 – 17
C = 14 – 15
D = 12 – 13
F = 11 and below

Summative Assessment 3:

Total points – 10 – 1 point per correct answer; Mastery = 8 points (80%)

Questions 1 to 5 assess knowledge about metric units of distance measurement and the ability to convert between these.
1. What is longer, 2.4 m or 240 mm?
2. How many millimeters are in 65.4 centimeters?
3. Walt grew 10 centimeters in 1 year. He is now 1.6 m tall. How tall was he 1 year ago? .
4. Mary buys a reel of thread for sewing. There are 10 m of thread on the real. She uses 210 cm. How much is left on the reel in centimeters?

Questions 5 to 7 assess units of time measurement and the ability to calculate elapsed time.
5. How many minutes are in four hours?
6. Mr. Martin's Spanish class is 45 minutes long. If it starts at 3:30, what time does it end?
7. Sebastian studies from 3:15 - 4:45. His sister, Sasha studies from 4:30 - 6:15. Who studied longer and by how much?

Questions 8 to 10 assess knowledge about metric units of mass and the ability to convert between these.
8. Lois wants to send a box of oranges to a friend by mail. The box of oranges cannot exceed a mass of 10 kg. If each orange has a mass of 200g, what is the maximum number she can send?
9. Peter is overweight. He is 105 kg. His aim is to lose 500 g per week. If he manages this, how many weeks will it be until he is 90 kg?
10. A 30 g serving of a certain breakfast cereal has 0.5 g of salt. How much salt would that be in milligrams?

Answer Key – Assessment 3
1. 2.4 m
2. 654 mm
3. He was 1.5 m tall
4. There are 790 cm left on the reel.
5. There are 240 minutes in 4 hours.
6. The class ends at 4:15.
7. Sasha studied 15 minutes longer.
8. The maximum number of oranges she can send is 50.
9. It will be 30 weeks until he is 90 kg
10. 500 milligrams