NCTM Process Standards Rubric

Measurement – Drill Sheets

Expectations Instructional programs from pre-kindergarten through grade 12 should enable all students to:	Warm-up 1	Timed Drill 1	Timed Drill 2	Warm-up 2	Timed Drill 3	Timed Drill 4	Warm-up 3	Timed Drill 5	Timed Drill 6	Warm-up 4	Timed Drill 7	Timed Drill 8	Warm-up 5	Timed Drill 9	Warm-up 6	Timed Drill 10	Timed Drill 11	Review A	Review B	Review C
GOAL 1: Problem Solving																				
• build new mathematical knowledge through problem solving;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• solve problems that arise in mathematics and in other contexts;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• apply and adapt a variety of appropriate strategies to solve problems;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• monitor and reflect on the process of mathematical problem solving.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 2: Reasoning & Proof																				
• recognize reasoning and proof as fundamental aspects of mathematics;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• make and investigate mathematical conjectures;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• develop and evaluate mathematical arguments and proofs;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• select and use various types of reasoning and methods of proof.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 3: Communication																				
• organize and consolidate their mathematical thinking through communication;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• communicate their mathematical thinking coherently and clearly to peers, teachers, and others;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• analyze and evaluate the mathematical thinking and strategies of others;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• use the language of mathematics to express mathematical ideas precisely.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 4: Connections																				
• recognize and use connections among mathematical ideas;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• understand how mathematical ideas interconnect and build on one another to produce a coherent whole;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• recognize and apply mathematics in contexts outside of mathematics.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GOAL 5: Representation																				
• create and use representations to organize, record, and communicate mathematical ideas;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• select, apply, and translate among mathematical representations to solve problems;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• use representations to model and interpret physical, social, and mathematical phenomena.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

NAME: _____

Warm-Up Drill Sheet # 1

1a) Using the information in the menu below, create a list of food or drink combinations and list them in the table. Each combination should have three different items. Then, list the total cost for the combination, including a 5% sales tax. Finally, List the amount of change you would get back if you paid each meal with $10.00.

Fire Station Grill Breakfast Menu			
Bacon (3 strips) = $1.99	Cereal = $2.50	Hash browns = $1.99	Coffee (cup) = $1.50
Sausage (2 links) = $1.50	Oatmeal = $2.99	Fried hash = $2.99	Tea (cup) = $1.50
Eggs (2) = $2.00	Pancakes (3) = $3.00	Cornbread = $1.99	Milk = $1.00
Toast (2 slices) = $1.50	Waffles (2) = $3.00	Muffin = $1.99	Juice = $1.99

Combo	Cost + 5% Sales Tax	Change from $10.00
Ex: Oatmeal, Pancakes, and Muffin	$8.38	$1.62
i)		
ii)		
iii)		
iv)		
v)		
vi)		
vii)		
viii)		
ix)		
x)		

NAME: _____

Review C

a) Convert the following measurements.

i) 18.3 yd = _____ ft
ii) 1.28 cm = _____ mm
iii) 0.25 tons = _____ lbs
iv) 1.025 m = _____ mm
v) 198 oz = _____ lbs
vi) 7.5 g = _____ kg
vii) 144 qt = _____ gal
viii) 1.25 km = _____ cm
ix) 40.3 ft = _____ in
x) 27.55 kg = _____ g
xi) 24.5 ft = _____ yds
xii) 4.25 km = _____ m
xiii) 25.25 g = _____ mg
xiv) 8.25 ft = _____ in
xv) 0.028 kL = _____ L

b) Answer the following quick measurement questions.

i) Steven measured the length of time it took for a science experiment to be completed. After three trials, his times were 18.25 seconds, 16.75 seconds, and 15.27 seconds. What was the average time for the experiments to be completed?

_____

ii) A parallelogram has an area of 4.2 sq. in (27 sq. cm). What are two possible base and height measurements? _____

iii) Diego rode a bike for three consecutive days. He averaged 25.25 miles (40.6 km) each day. How many total feet (meters) had he traveled after three days?

_____

iv) A rectangular box has a length of 3 inches (8 cm), a width of 2 inches (5 cm), and a height of 2 inches (5 cm). What is the surface area?

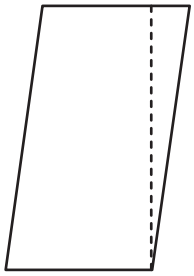
_____

v) The radius of a circle is 5 inches (12.5 cm). What is the area of the circle?

_____

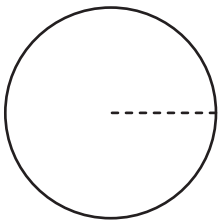
c) Use a ruler to measure the objects below. Find the area, perimeter and circumference for each object.

i)



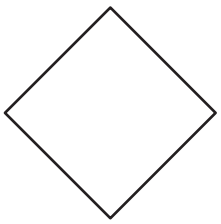
Area = _____
Perimeter = _____

ii)



Area = _____
Circumference = _____

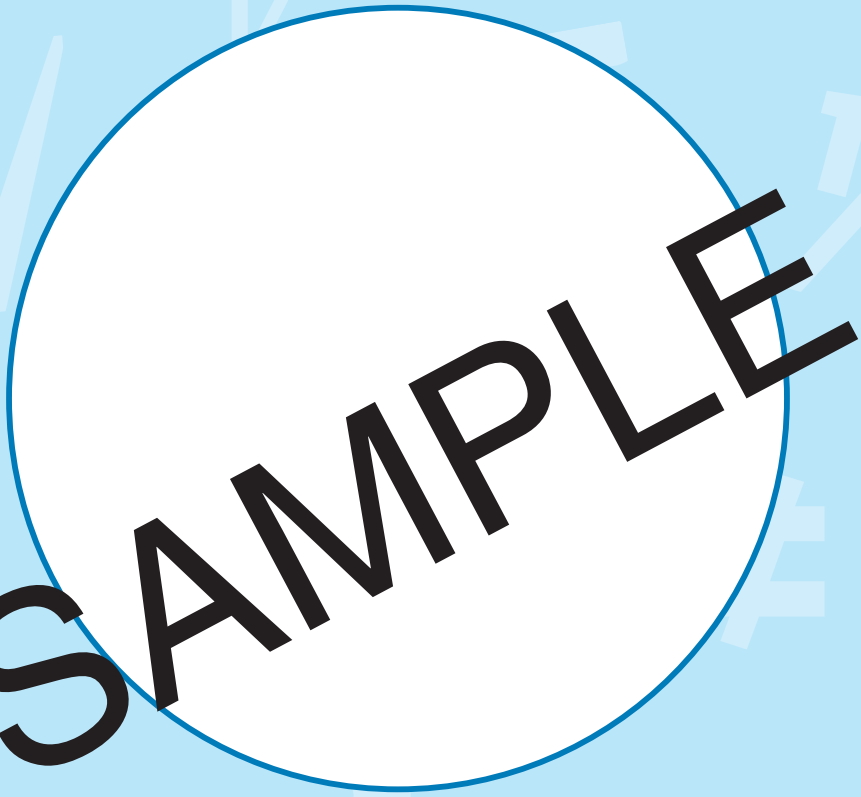
iii)



Area = _____
Perimeter = _____

Area of a Circle

Look at the picture of the circle below. Discuss how you can determine the area and perimeter of the circle. Then, in a well developed paragraph, explain how to find the area.
Finally, measure the circle and find the area and perimeter.



Things to consider in your answer:
1. What measurements will you need?
2. What units of measure will you use?
3. How do the measurements you need relate to each other?

Things to consider in your paragraph:
1. Make sure to include a topic sentence and conclusion.
2. Make sure your paragraph contains at least five sentences.
3. Make sure to use transition words to help explain your work.