

Process Standards Rubric



Measurement

Expectations Instructional programs from pre-kindergarten through grade 12 should enable all students to:	Exercise	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Drill Sheet 1	Drill Sheet 2	Review A	Review B	Review C	
		GOAL 1: Problem Solving <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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. 	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

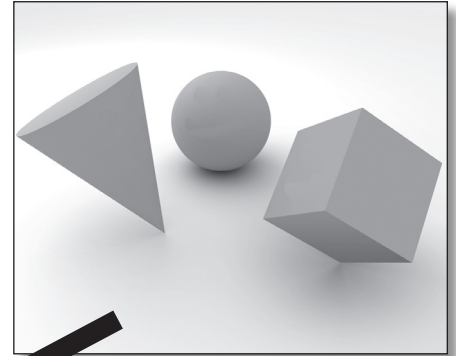
SAMPLE



Task Sheet 13

The Secret Formula

- 13)** Look at the formulas below. Each shows a way of finding the area of plane figures. Determine the figure that is represented by each formula. Then, draw an example of the figure it represents below each formula. Label the length of each side or important line (you may use real lengths by measuring with a ruler or invent your own lengths). Then, determine the area using the information you have written. Some formulas may have more than one correct answer.



Formula one: $A = \frac{1}{2} b \times h$

Formula two: $A = l \times b$

Formula three: $A = \pi r^2$

Formula four: $A = s^2$

SAMPLE

Reflection



Think about the area of the figures determined by formula two and four. If you did not have a formula for these figures, how could formula one and the figure it represents help you determine the area of these two figures?



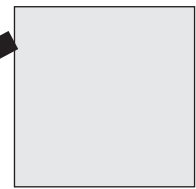
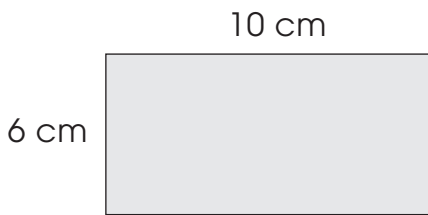
Drill Sheet 1

Conversions

- a) 1.5 m = _____ cm 27 ft = _____ yards 180 in = _____ ft
 2.5 oz = _____ lbs 2.5 g = _____ mg .25 ton = _____ lbs
 4 cups = _____ pints 330 L = _____ kL 2 gallons = _____ quarts
 18 ft = _____ yds 2.5 km = _____ m 27 yd = _____ in

Area and Perimeter

Look carefully at the three figures below. Calculate the area and perimeter using the measurements provided.



- b) Area: _____ c) Area: _____ d) Area: _____
 Perimeter: _____ Perimeter: _____ Perimeter: _____

Short Answers

- e) What is the volume of a tank with a length of 4 feet (1 meter), width of 5 feet (2 meters), and a height of 3 feet (0.9 meters)?

- f) What temperature is 20° below the boiling point on the Fahrenheit (Celsius) scale?

- g) An angle that is four-fifths the size of a right triangle would be this many degrees.

- h) What is the formula for finding the area of a circle?

- i) How many meters (feet) are in a 5 km (3 mile) race?

Draw it to Scale



You have been hired by the Scholastic Architectural Firm to design a new classroom. Your job is to draw the design of your state-of-the-art classroom, complete with tools that you think will be useful for students in your class or grade. For this, you are asked to do the following:

- a) Design a floor space for your classroom on a regular piece of white paper. Explain the scale of your drawing (for example 1 inch (1 cm) in your drawing might equal 1 foot (1 meter)).
- b) Identify the area and perimeter of the classroom you have designed.
- c) Add at least three pieces of furniture to your classroom (you do not need to put student desks in your design, but do need to have an area for it). Label the furniture and draw it to scale.
- d) Draw three educational tools that will be incorporated in the floor design. Label the items and draw it to scale.
- e) Explain why your new classroom would be an innovation over current classrooms.
- f) Add the scale to your drawing.