

Name _____

Lab # 9 -- Concrete

Description: Create a simple stepping stone .

Materials:

Cement
Sand
Gravel

Tools:

Mixer
Square nose shovel
Floats
Trowels

Form Lumber
Duplex Nails
Builders' Paper

Directions:

1. Build your form as shown in the plan. **WRITE YOUR NAME ON THE FORM.**
2. "Paint" the form with diesel fuel to prevent sticking.
3. Place the form on builder's paper.
4. Mix a batch of concrete in the mixer. **USE a 1:2:2 1/2 mix and a 5-gallon pail.**
Pour your stepping-stone. Use a scrap of lumber to screed the form. Use the wood float to tamp down the aggregate, tap the forms with a hammer to settle the concrete. **DO NOT OVER WORK.**
5. Let sit for at least 1 hour. Use this time to complete the calculations with this lab. We will review them in class. (Due next lab.)
6. Use an edging tool to finish the edges and a steel trowel to smooth the surface. **DO NOT OVER WORK.**
7. Optional: Expose the aggregate on one of the stepping-stones.
8. **WASH ALL TOOLS THOROUGHLY.**
9. *Next Lab: Remove the form from the stepping-stones, write your name on the edge of the stones, and place in the designated place for grading.*

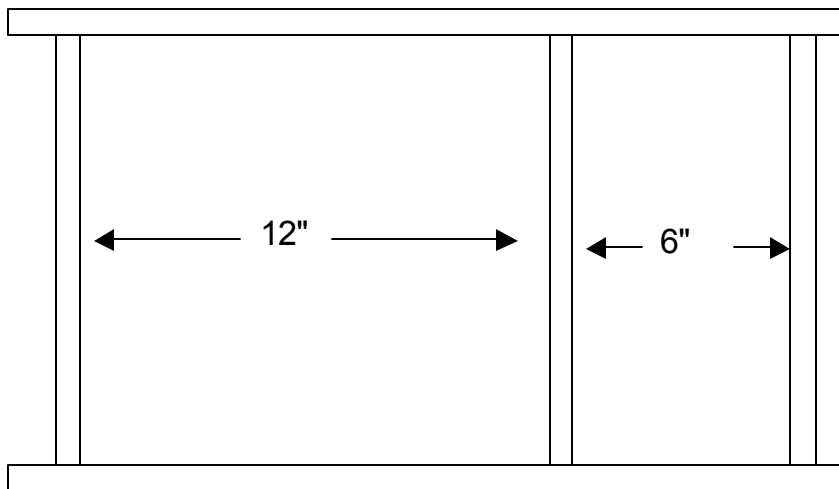
Stepping Stone Form:

Cut from 1x2:

3-1x2x12"

2-1x2x28+"

Assemble as shown below with duplex nails (no glue):



Name _____

Lab #9 Concrete Calculations
 (2 points each)

1. How much concrete is required to pour 30 stepping stones as constructed for this lab?

Answer: _____

2. Calculate the amount of concrete (cu. yds.) required to pour a walkway 4" thick, 3' wide and 60' long.

Answer: _____

3. How much cement, sand, and gravel will be required if you mix it yourself for the above project. Use a 1:2:4 mix. (Hint: see table on the handout.) Assume that you purchase the cement in 1cu. foot sacks, sand and gravel are purchased by the cu. yard.

Cement: _____ Sacks

Sand: _____ Yds.

Gravel: _____ Yds.

4. How much concrete will you order (cu. yds.) to pour a barn floor 60' by 120'? Assume the slab will be 4" thick and the footings (around the entire slab) will be 18" deep and 12" wide.

Answer: _____

5. If the concrete in the above problem costs \$65/cu. yd., how much will the slab cost?

Answer: _____

Lab Grading:

Criteria (tolerance 1/16")	Possible	Score
Form Size (Width, Length, Divider)	6	
Finished Stepping Stones (Finish, Craftsmanship)	9	
Class Participation/Clean Up	5	
TOTAL	20	