

RAFT IDEAS

Topics: Logic, Problem Solving, Geometry, Spatial Thinking and Persistence!

Materials List

- ✓ 46-48 identical corks or similarly shaped objects.
- ✓ Hot glue gun and hot glue
- ✓ Optional – 1-2 rubber band(s) to hold completed puzzle together. Needed if the “tree” is to be displayed upright.

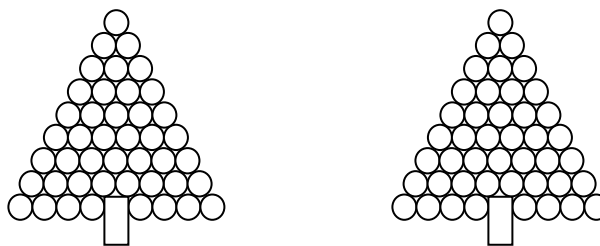
This activity can be used to teach:

CO Math Standard 4:
Shape, Dimension and Geometric Relationships

- Problem Solving
- 21st Century Skills
- Critical Thinking and Reasoning

Grades: k, 1, 2, 4, 5, 7, 8, HS

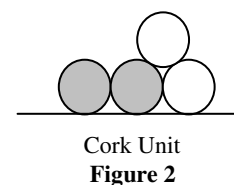
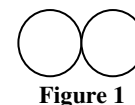
Cork Tree Puzzle



This unique puzzle can provide students with seasonal, spatial problem solving activities.

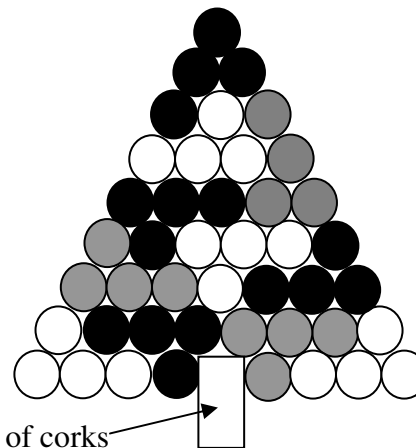
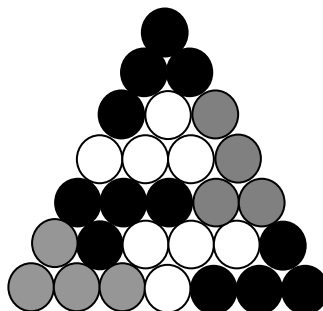
Assembly

1. Glue 46 corks together along their lengths to make 23 pairs (figure 1).
2. Glue two pairs together on a flat surface to make the Cork Unit shape (figure 2).
3. Repeat until you have 11 sets of the Cork Units.
4. (Optional) Notch the sides of 2 corks in the middle. Place one side of a long rubber band in the notch and glue the corks together. This pair can then be used as a “trunk” for the tree with the rubber band holding the rest of the corks into the tree shape.



To Do and Notice

1. The “tree” is made from a triangle with 9 corks on a side, with one missing cork in the middle of one side. The leftover pair of corks, placed on their sides, fills this gap - making the “trunk.”
2. As an intermediate step, and a simpler problem, is to use 7 of the Cork Units to make a full triangle with 7 corks on each side. The last 4 units can then be added to form the final tree shape.
3. A template to aid finding a solution can be made by placing a completed puzzle on a copier. This resulting paper copy will provide helpful visual cues.
4. Repeating units form the basis of many natural structures. To solve this puzzle requires shapes to be rotated and to be flipped.
5. Are there more solutions than the one given below? How many solutions can your students find?



Web Resources - Visit www.raft.net/more for how-to videos and more ideas!