```
function BOTTOM-UP-PARSE(words, grammar) returns a parse tree

  forest ← words
  loop do
    if LENGTH(forest) = 1 and CATEGORY(forest[1]) = START(grammar) then
      return forest[1]
    else
      i ← choose from {1…LENGTH(forest)}
      rule ← choose from RULES(grammar)
      n ← LENGTH(RULE-RHS(rule))
      subsequence ← SUBSEQUENCE(forest, i, i+n-1)
      if MATCH(subsequence, RULE-RHS(rule)) then
        forest[i…i+n-1] ← [MAKE-NODE(RULE-LHS(rule), subsequence)]
      else fail
  end
```