

Duty/Task: G-3 Plant bulbs/tubers (e.g. onion, potatoes, garlic)										
STEPS (Required to Perform the Task)	PERFORMANCE STANDARDS (Observable & Measurable Criteria)	TOOLS, EQUIPMENT, SUPPLIES & MATERIALS (Needed)	REQUIRED KNOWLEDGE AND SKILLS (Math, Science, & Language)	SAFETY (Concerns)	WORKER BEHAVIORS (Important to Worker Success)	DECISIONS (Identify Decisions that Must be Made by the Worker)	CUES (Identify the Data Needed for Making Correct Decisions)	ERRORS (Indicate What May Result if Incorrect Decisions are Made)		
MECHANICALLY:										
1 Obtain bulbs/tubers for the variety you want to grow	1 Obtained the correct bulbs/tubers for planting	1 Purchase order, phone	1 Knowledge of varieties	1 N/A	1 Discerning, selective, accurate, decisive, timely	1 What varieties should I plant? What do consumers want? What is a reasonable price to pay? How much should I purchase? Am I growing organic?	1 Consumer demand, growing conditions, budget, what's available, organic vs. non-organic approach	1 Won't be able to grow the crop we want, variety may not be adaptable to our environment		
2 Prepare the tuber for planting by cutting larger planting stock into pieces with eyes	2 Prepared planting stock by cutting larger stock into pieces with eyes	2 Knife, mechanical potato cutter	2 Knowledge of varietal propagation, mechanical knowledge	2 Avoid cuts to fingers or hands	2 Safety minded, efficient, careful	2 How big do the individual pieces need to be? How do I cut them to ensure enough eyes for propagation?	2 Size the planter cups can accommodate, rule of thumb of having 1-2 eyes per cut piece	2 Tubers may not fit planter cups, pieces will not grow without eyes		
3 Adjust planting depth on planter	3 Adjusted the planter to the correct depth for the tuber or bulb being planted	3 Planter, wrenches, ruler	3 Knowledge of recommended planting depths, mechanical knowledge	3 Use caution around equipment	3 Accurate, conscientious, problem solver	3 How deep should I set the planting depth? How do I adjust the planting depth? What tools do I need to adjust the planting depth?	3 Variety being grown, owner's manual for planter	3 Tubers or bulbs planted too deep won't germinate, those planted too shallow will dry out and die		
4 Adjust planting rate on planter	4 Adjusted the planting rate to apply the correct rate of tubers per foot/acre	4 Planter, wrenches, planting diagram (with planter)	4 Knowledge of recommended planting rates, mechanical knowledge, knowledge of varietal growing requirements	4 Use caution around equipment	4 Accurate, conscientious, problem solver	4 What is the recommended planting rate per acre? How do I adjust the planter to the recommended planting rate? What tools do I need to adjust the planting rate?	4 Variety being planted, owner's manual for planter	4 Plants may be overcrowded or may be too sparse for optimum production		
5 Adjust row width on planter	5 Adjusted the row width to the proper width for the variety being planted	5 Planter, wrenches, ruler	5 Knowledge of recommended planting row width, knowledge of cultivator width, mechanical knowledge	5 Use caution around equipment	5 Accurate, conscientious, problem solver	5 How wide should my row width be? How do I adjust the row width on the planter? What tools do I need to adjust the row width?	5 Variety being planted, owner's manual for planter	5 Row width will not match cultivator width, too close may overcrowd plants, too far apart will not optimize production capability		
6 Place bulbs/tubers and starter fertilizer (if non-organic) in separate planter hoppers	6 Added bulbs/tubers and fertilizer (if used) and adjusted fertilizer rate	6 Bulbs, tubers, fertilizer, planter	6 Knowledge of fertilizer rate for starting crop	6 Use proper lifting techniques	6 Accurate, conscientious, problem solver	6 Which hopper is for fertilizer and which is for tubers? How do I adjust the fertilizer rate on the planter? What tools do I need?	6 Owner's manual for planter	6 Won't be able to grow the crop we want, yield may be affected if not enough fertilizer is applied, over fertilization may lead to crop injury		
7 Plant the bulbs/tubers	7 Planted the bulbs/tubers	7 Planter, tractor	7 Mechanical knowledge, ability to safely operate a tractor	7 Operate tractor safely	7 safety conscious, persistent, accurate	7 How fast should I drive while planting? How far apart should my passes be??	7 Planting marker, type of planter and tractor	7 Won't have a crop if not planted correctly, yield may be affected, may damage the equipment		
8 Water (if needed and if possible)	8 Added sufficient water if available and if needed	8 Irrigation system	8 Mechanical knowledge, knowledge of how to operate irrigation system	8 Use caution around pumps and high pressure pipelines	8 Accurate, conscientious, problem solver, timely	8 Should I add water or wait for rain? How much should I add? How do I apply the water?	8 Weather conditions, soil conditions, type of irrigation system (if available)	8 New bulbs/tubers won't germinate without adequate soil moisture		
MANUALLY:										
9 Obtain bulbs/tubers for the variety you want to grow	9 Obtained the correct bulbs/tubers for planting	9 Purchase order, phone	9 Knowledge of varieties	9 N/A	9 Discerning, selective, accurate, decisive, timely	9 What varieties should I plant? What do consumers want? What is a reasonable price to pay? How much should I purchase? Am I growing organic?	9 Consumer demand, growing conditions, budget, what's available, organic vs. non-organic approach	9 Won't be able to grow the crop we want, variety may not be adaptable to our environment		
10 Prepare the tuber for planting by cutting larger planting stock into pieces with eyes	10 Prepared planting stock by cutting larger stock into pieces with eyes	10 Knife, mechanical potato cutter	10 Knowledge of varietal propagation, mechanical knowledge	10 Avoid cuts to fingers or hands	10 Safety minded, efficient, careful	10 How big do the individual pieces need to be? How do I cut them to ensure enough eyes for propagation?	10 Size the planter cups can accommodate, rule of thumb of having 1-2 eyes per cut piece	10 Tubers may not fit planter cups, pieces will not grow without eyes		
11 Create a furrow in which to plant the bulbs/tubers	11 Created a furrow of the proper width and depth	11 Hoe, hand cultivator	11 Physical stamina	11 N/A	11 Physically fit, conscientious, accurate	11 How will I create a furrow? How wide should it be? How deep should it be?	11 Size of bulb or tuber being planted, available tools	11 Won't have a proper plant bed conducive to germination		
12 Place bulbs/tubers in furrow (roots down for bulbs, tubers don't matter)	12 Placed bulbs/tubers at the proper spacing, density and direction	12 Hand	12 Knowledge of varietal planting requirements	12 N/A	12 Physically fit, conscientious, accurate	12 What should my planting rate be? Which direction should bulbs be planted? Which direction should tubers be planted?	12 Planting guide, type of crop being planted	12 May produce too many or too few plants per acre if not planted at the correct rate		
13 Apply starter fertilizer (if non-organic)	13 Applied high phosphorus (starter) fertilizer at the proper rate	13 Hand, bucket	13 Knowledge of fertilizer analysis and rates for in-row application	13 Use gloves to protect hands	13 Physically fit, conscientious, accurate	13 What analysis of fertilizer should I use? How do I apply it? How much should I apply?	13 Planting guides, soil tests, available equipment or tools	13 Yield may be affected if not enough fertilizer is applied, over fertilization may lead to crop injury		
14 Cover the bulbs/tubers and fertile	14 Covered the bulbs/tubers and fertilizer to the correct depth	14 Hoe	14 Knowledge of varietal planting requirements	14 N/A	14 Conscientious, physically fit	14 How much soil should I cover the tuber or bulb with?	14 Varietal requirements	14 Bulbs/tubers may dry out or may not germinate		
15 Water (if needed and if possible)	15 Added the correct amount of water if available and if soil conditions warranted	15 Irrigation system	15 Mechanical knowledge, knowledge of how to operate irrigation system	15 Use caution around pumps and high pressure pipelines	15 Accurate, conscientious, problem solver, timely	15 Should I add water or wait for rain? How much should I add? How do I apply the water?	15 Weather conditions, soil conditions, type of irrigation system (if available)	15 New bulbs or tubers won't grow		
Analyst: John Moser			Specific Relevant References:							
Expert Workers:			1 Owner's manual for planter							
Al Welch			2 Extension publications							
Milan Pajev			3 Dealer marketing materials							