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Open Basic Skills Curriculum

Task 1: Palm Needle Driver

Description: Grasp 5mm colored segment on thin single rubber tubing on Tyco knot-tying model by opening and closing (3 full clicks) needle driver held by palming, 5 repetitions

Errors: Fail to close with 3 full clicks = 1 point each of 5 possible occurrences
Fail to grasp any portion of the colored segment = 1 point each of 5 possible occurrences
Drop needle driver = 1 point each occurrence
Slip fingers into needle driver finger rings = 1 point each occurrence during each grasp, 5 possible occurences

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 53 (7 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	10 x Errors	**Score**
		1			
		2			
		3			
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Task 2: Knot-tying, No Tension, 2-handed

Description: Tie 2-0 silk ligature around 5mm colored segment on thick single rubber tubing on Tyco knot-tying model using only 2-handed technique, *3 square knots,* time starts with tie in place, not crossed, 1 end in each hand

Errors: Accuracy = distance in mm tied outside of colored segment
Gap (Air Knot) = distance in mm between ligature and rubber tubing
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 50 (10 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	**Score**
		1						
		2						
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		5						
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Task 3: Knot-tying, No Tension, 1-handed

Description: Tie 2-0 silk ligature around 5mm colored segment on thick single rubber tubing on Tyco knot-tying model using only 1-handed technique, *3 square knots,* time starts with tie in place, not crossed, 1 end in each hand

Errors: Accuracy = distance in mm tied outside of colored segment
Gap (Air Knot) = distance in mm between ligature and rubber tubing
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 50 (10 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	**Score**
		1						
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		3						
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Task 4: Knot-tying, Under Tension, 2-handed, Surgeon's Knot

Description: Tie 2-0 silk ligature around 5mm colored segments to approximate thick double rubber tubing set on Tyco knot-tying model using only 2-handed technique, *surgeon's knot then 2 squares (3 knots total),* time starts with tie in place, not crossed, 1 end in each hand

Errors: Accuracy = distance in mm tied outside of colored segments on each tubing piece
Gap (Air Knot) = distance in mm between rubber tubing segments
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 47 (13 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	**Score**
		1						
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		3						
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Task 5: Knot-tying, Under Tension, 2-handed, Slip Knot

Description: Tie 2-0 silk ligature around 5mm colored segments to approximate thick double rubber tubing set on Tyco knot-tying model using only 2-handed technique, *slip knot on first 2 throws then 2 square throws (4 knots total),* time starts with tie in place, not crossed, 1 end in each hand

Errors: Accuracy = distance in mm tied outside of colored segments on each tubing piece
Gap (Air Knot) = distance in mm between rubber tubing segments
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 45 (15 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	**Score**
		1						
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		3						
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Task 6: Knot-tying, Under Tension, 1-handed, Slip Knot

Description: Tie 2-0 silk ligature around 5mm colored segments to approximate thick double rubber tubing set on Tyco knot-tying model using only 1-handed technique, *slip knot on first 2 throws then 2 square throws (4 knots total),* time starts with tie in place, not crossed, 1 end in each hand

Errors: Accuracy = distance in mm tied outside of colored segments on each tubing piece
Gap (Air Knot) = distance in mm between rubber tubing segments
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise

Scoring Formula: Score = 60 - time - 10(sum of errors)
(Cutoff/Max time allotment = 60 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 45 (15 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	**Score**
		1						
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		3						
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Task 7: Suturing, Interrupted, Simple

Description: 30cm, 3-0 undyed polysorb on tapered needle, FLS model, instrument tie *surgeon's knot then 2 squares(3 knots total),* time starts with needle loaded in needle driver in dominant hand, forceps in nondominant hand, the needle driver should be "palmed" except during knot tying, the needle should be "loaded in the wound" using forceps (not by pulling up and loading by hand well away from the wound)

Errors: Accuracy = sum of distances in mm needle passed outside of each colored target
Gap (Air Knot) = distance in mm between targets on penrose drain (min = 2mm = no error)
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase

Scoring Formula: Score = 120 - time - 10(sum of errors)
(Cutoff/Max time allotment = 120 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 102 (18 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	**Score**
		1								
		2								
		3								
		4								
		5								
		6								
		7								
		8								
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Task 8: Suturing, Interrupted, Horizontal Mattress

Description: 30cm, 3-0 undyed polysorb on tapered needle, FLS model, instrument tie *surgeon's knot then 2 squares(3 knots total),* time starts with needle loaded in needle driver in dominant hand, forceps in nondominant hand, the needle driver should be "palmed" except during knot tying, the needle should be "loaded in the wound" using forceps (not by pulling up and loading by hand well away from the wound)

Errors: Accuracy = sum of distances in mm needle passed outside of each colored target
Gap (Air Knot) = distance in mm between targets on penrose drain (min = 2mm = no error)
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase

Scoring Formula: Score = 120 - time - 10(sum of errors)
(Cutoff/Max time allotment = 120 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 89 (31 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	**Score**
		1								
		2								
		3								
		4								
		5								
		6								
		7								
		8								
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Task 9: Suturing, Interrupted, Vertical Mattress

Description: 30cm, 3-0 undyed polysorb on tapered needle, FLS model, instrument tie *surgeon's knot then 2 squares (3 knots total),* time starts with needle loaded in needle driver in dominant hand, forceps in nondominant hand, the needle driver should be "palmed" except during knot tying, the needle should be "loaded in the wound" using forceps (not by pulling up and loading by hand well away from the wound)

Errors: Accuracy = sum of distances in mm needle passed outside of each colored target
Gap (Air Knot) = distance in mm between targets on penrose drain (min = 2mm = no error)
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase

Scoring Formula: Score = 120 - time - 10(sum of errors)
(Cutoff/Max time allotment = 120 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 89 (31 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	**Score**
		1								
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		3								
		4								
		5								
		6								
		7								
		8								
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Open Basic Skills Curriculum

Task 10: Suturing, Running, Simple

Description: 18 inch 3-0 nylon on a cutting needle, Daisie Model oriented perpedicular to bench edge (secured to the Tyco suture board with rope), 10cm long full thickness incision in the Daisie with inked targets 5mm back from edge and at 1cm intervals (11 sets of targets, n=22 total), instrument tie *surgeon's knot then 3 squares (4 knots total) at each corner, tie to loop at end,* time starts with needle loaded in needle driver in dominant hand, forceps in nondominant hand, cut each set of tails to <1cm as part of exercise, the needle driver should be "palmed" except during knot tying, the needle should be "loaded in the wound" using forceps (not by pulling up and loading by hand well away from the wound)

Errors: Accuracy = sum of distances in mm needle passed outside of each colored target
Tissue Gap = sum of distance in mm between edges of model at each set of targets
Slippage = 0 points for secure knot, 10 points for slippage > 3mm, 20 points for disruption, 2 knots
(measure by cutting tails to 1 cm and "busting" the knot using pointed scissors)
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase
Tails (failure to cut tails to < 1cm) = 1 point each occurrence

Scoring Formula: Score = 600 - time - 10(sum of errors)
(Cutoff/Max time allotment = 600 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 435 (2'45" = 165 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Accuracy Error x 10	Gap Error x 10	Slippage Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	Tails Error x 10	**Score**
		1									
		2									
		3									
		4									
		5									
		6									
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Task 11: Suturing, Running, Subcuticular

Description: 18 inch 3-0 nylon on a cutting needle, Daisie Model oriented parallel to bench edge (secured to the Tyco suture board with rope), 10cm long full thickness incision in the Daisie (ignore inked targets), anchoring stitch in subQ on both sides near corner (big bites to avoid pull-through on model) with instrument tie (*surgeons knot then 3 squares (4 knots total)* , complete using Aberdeen (pull through the loop) knot (*4 throws)* , time starts with needle loaded in needle driver in dominant hand, forceps in nondominant hand, cut each set of tails to <1mm/flush as part of exercise, the needle driver should be "palmed" except during knot tying, the needle should be "loaded in the wound" using forceps (not by pulling up and loading by hand well away from the wound)

Errors: Tissue Gap = sum of distance in mm between edges of model at each 1cm interval
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase
Tails (failure to cut tails flush) = 1 point each occurrence

Scoring Formula: Score = 600 - time - 10(sum of errors)
(Cutoff/Max time allotment = 600 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 396 (3'24" = 204 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Gap Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	Tails Error x 10	**Score**
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		4							
		5							
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Task 12: Suturing, Interrupted, Subcuticular

Description: any length 3-0 nylon on a cutting needle, Daisie Model oriented parallel to bench edge (secured to the Tyco suture board with rope), 1.5 cm long full thickness incision in the Daisie (no inked targets), place a single buried subcuticular suture in a vertical fashion (perpendicular to the incision) with an instrument tie *(surgeons knot then 3 squares (4 knots total)),* cut tails flush with the model surface

Errors: Tissue Gap = sum of distance in mm between edges of model at each 1cm interval
Breakage = 20 points if ligature is broken during any portion of exercise
Palming (Slipping fingers into needle driver finger rings) = 1 point during each tissue bite phase
Loading (Not loading in the wound but loading by hand) = 1 point during each tissue bite phase
Tails (failure to cut tails flush) = 1 point each occurrence

Scoring Formula: Score = 120 - time - 10(sum of errors)
(Cutoff/Max time allotment = 120 seconds, Score = 0 if negative number is achieved)

Proficiency Score: 87 (33 seconds with no errors)

Proficiency Training Protocol: Achieve proficiency score on 2 consecutive repetitions (max 80 repetitions)

Proficiency Testing (Pre-test and Post-test) Protocol: 1 repetition

Trainee Scores

Mark: Pre-test, Training, or Post-test	Date	Repetition No.	Time	Gap Error x 10	Breakage Error x 10	Palming Error x 10	Loading Error x 10	Tails Error x 10	**Score**
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