

# **HOW TO CROCHET A GRANNY SQUARE**

## **DOCUMENTATION**

**ED HILTON**

**IT 510**

**5 DECEMBER, 2011**

## TABLE OF CONTENTS

PROBLEM IDENTIFICATION .....	3
SUBJECT MATTER EXPERT .....	3
GOAL ANALYSIS .....	3
GOAL DEVELOPMENT .....	4
LEARNER ANALYSIS .....	5
CONTEXTUAL ANALYSIS .....	5
Orienting Context .....	5
Instructional Context .....	5
Transfer Context .....	5
TASK ANALYSIS .....	5
GOALS AND OBJECTIVES .....	25
Sequencing Strategy .....	28
Preinstructional strategy .....	29
Formative Evaluation .....	29
SME Review: .....	29
Field Test .....	29

## **PROBLEM IDENTIFICATION**

Sunnyside Rehabilitation Center is seeking a manual lesson with which to improve finger dexterity and eye-hand coordination for selected patients. Because of limited budget, materials and tools must be inexpensive and lasting. Discussion among the staff resulted in the selection of crocheting. The problem identified is that members of the staff have observed crocheting but none know how to perform it much less develop instructional material for it. I applied a combination of needs and goals analysis to determine the needs/goals required. For needs analysis, I interviewed three representatives of the physical therapy staff to assess the type of needs. My findings were:

- Normative needs do not apply as there is no objective national standard set for crocheting.
- Comparative needs do not apply as we do not wish to compare the final product against those produced by learners in a non-rehabilitation center environment such as an arts and crafts class.
- Felt needs are applicable as the desire to perform the action and accomplish the project could lead to a feeling of accomplishment, increased manual dexterity, and increase in self-esteem for the learner.
- Expressed needs do not apply as the learner is not taking the course voluntarily. If selections were given such as crochet vs water colors or needle point then it would be an expressed need.
- Anticipated or Future Needs do not apply as once again, this is not a voluntary course but therapy.
- Critical Incident Needs do not apply in this environment.

As the needs assessment did not reflect much quantitative data, it was decided to pursue a goals analysis. The needs assessment did reflect that accomplishment of the product which could be goal related can result in higher motivation for the patient which is important in therapy.

## **SUBJECT MATTER EXPERT**

I met with Debra Hilton, a crocheting Subject Matter Expert (SME) to identify the procedures in basic crocheting. Debra Hilton has over 40 years of crocheting experience and is proficient in various styles and techniques to include the basic Granny Square. We discussed crocheting fundamentals to include materials and tools used and talked through the basic process of crocheting. I explained the purpose of the instructional material and the restraints of the learners. She recommended a granny square to be utilized for instruction. We will met at different sessions where she demonstrated and allowed me to photograph the technique she used for crocheting a granny square. She later reviewed drafts of my instructional material for accuracy and clarity.

## **GOAL ANALYSIS**

After my initial discussion with the SME, and based on little data achieved from the needs assessment, I went back to the staff members of Sunnyside Rehabilitation center to conduct a goals analysis. Working with the staff members, we identified the aims as identified below. In conjunction with the staff, it was decided to incorporate the teaching of basic crocheting skills to select patients as part of their therapy plan. It was determined that the final product would be a simple “Granny Square”. Staff members will take the instructional unit to learn basic crocheting skills. After completion, they will in turn incorporate the instructional unit for selected patients as part of their therapy plan.

It took several meetings with the staff members to refine and rank the goals. The goals identified are those the staffs wish to achieve with the instructional program. This is not to be confused with the therapist’s

goal of rehabilitation. The instructional goal is for the patient to learn and apply basic crocheting skills to fabricate a granny square as part of the therapy and is to be considered a tool.

## GOAL DEVELOPMENT

### 1. Set Aims

The learner will

- a. crochet a complete granny square.
- b. know the process by which to crochet a granny square.
- c. select tools and materials to produce a granny square.
- d. know the various techniques used in crocheting a granny square.
- e. fabricate the different crochet knots and stitches used in making a granny square.

### 2. Set Goals

The learner will

- a. know how to prepare work area for crocheting a granny square.
- b. know how to use crochet hooks in making a granny square.
- c. know how to use crochet yarn in making a granny square.
- d. know how to fabricate a granny square using basic crochet stitches.
- e. know what kind of yarn to use for crocheting a granny square.
- f. know basic crochet stitches used in making a granny square.
- g. know how to finish crocheting a granny square.

### 3. Refined Goals

The learner will

- a. know how to use crochet tools and materials to fabricate basic crochet stitches in making a granny square.
- b. know types of crocheting tools and materials for making a granny square.
- c. know purpose and function of crocheting tools and materials used in making a granny square.
- d. understand how to crochet a granny square.

### 4. Ranked Goals

The learner will

- a. know types of crocheting tools and materials used in making a granny square.
- b. know the purpose and function of crocheting tools and materials used in making a granny square.
- c. know how to use crochet tools and materials to fabricate basic crochet stitches used in making a granny square.
- d. understand how to crochet a granny square.

### 5. Refined Goals Again

The learner will know

- a. the process in crocheting a granny square.
- b. crochet stitches and knots used making a granny square.
- c. crocheting tools, their parts, and how to use them in crocheting a granny square.
- d. materials required in crocheting a granny square.

### 6. Ranked Goals again

The learner will know

- a. crocheting tools, their parts, and how to use them in crocheting a granny square.
- b. materials required in crocheting a granny square.
- c. crochet stitches and knots used making a granny square.
- d. the process in crocheting a granny square.

## LEARNER ANALYSIS

- **General Characteristics**
  - Male or female patients
  - Age 10 or above
  - Possess functional upper extremities
  - Possess ability to see
- **Specific characteristics**
  - Possess 20/20 vision with corrective lenses if required
  - Capable of holding crochet needle and performing required hand movements
  - Possess 6<sup>th</sup> grade or above reading level in English

## CONTEXTUAL ANALYSIS

### Orienting Context

This instruction is to provide the knowledge and procedural methods for an identified patient to fabricate a granny square as part of their rehabilitation therapy.

### Instructional Context

Instruction will be self-paced and IAW the patients prescribed therapy. Location is determined by the staff but can be done in a physical therapy setting with a desk or table, or at the patient's room with the patient in a sitting position. Adequate lighting is required. This instruction is to be used in conjunction with the approved therapy or could be used separately.

### Transfer Context

Upon completion of training, the patient will possess the knowledge and apply it to fabricate a granny square.

## TASK ANALYSIS

1. Obtain materials to crochet a granny square
  - a) Know what crocheting is
    - i) Definition: needlework consisting of the interlocking of looped stitches formed with a single thread and a hooked needle. Source: Merriam Webster dictionary
    - ii) Do not confuse with knitting.
      - (1) Knitting is a method by which thread or yarn may be turned into cloth or other fine crafts. Knitted fabric consists of consecutive rows of loops, called stitches.
      - (2) Knitting uses different tools and materials.
        - (a) Knitting needles or knitting pins

- (b) Yarn- Definition: Yarn is a continuous strand of natural or synthetic threads. It can be used in many handicrafts, including crochet. While available in a variety of colors, there are more differences among types of yarn than just shade. Differences include materials and thickness.
- b) Know what a granny square is.
- i) A granny square is a crochet technique for producing square fabric by working in rounds from the center outward. Granny squares are traditionally handmade. They resemble coarse lace
  - ii) Know what a round is
    - (1) A round is a single line of crochet stitches that are connected in a round circle.
- c) Know what crochet stitches are used in making a granny square
- i) Chain stitch
  - ii) Slip stitch
  - iii) Double crochet stitch
- d) Know what crochet knots are used in making a granny square
- i) Slip knot
- e) Know materials required to crochet a granny square
- i) Crochet yarn
    - (1) Know what crochet yarn is
      - (a) Definition: Yarn is a continuous strand of natural or synthetic threads. It can be used in many handicrafts, including crochet. While available in a variety of colors, there are more differences among types of yarn than just shade. Differences include materials and thickness.
      - (b) Do not confuse with knitting yarn. While they use the same name, crochet yarn has different weights than knitting yarn which determines the size of crochet hook to use. Check the label on the crochet yarn for guidance on what size crochet hook to use and what to use the yarn for.
    - (2) Know criteria to look for in selecting crochet yarn for making a granny square.
      - (a) Type
        - (i) Know types of Crochet yarn
          1. Synthetic yarns
            - a. Man-made, such as acrylic, polyester, nylon and rayon
            - b. Preferred for beginner use in making a granny square.
          2. Plant-based yarns
            - a. Spun from plants such as cotton, bamboo and hemp.
          3. Animal-based yarns
            - a. Include cashmere, wool and mohair
        - (b) Weight
          - (i) Categorized by weight (yards per pound).
            1. Fingering-weight yarns are thin and lightweight, about 1,900-2,400 yards per pound.
            2. Sport-weight yarn is about twice as thick as fingering weight.
            3. Worsted-weight yarn, perhaps the most popular, is three to four times as thick as fingering weight.
              - a. Preferred for beginner use in making a granny square.
            4. Bulky-weight yarn is very thick, about six to eight times as thick as fingering weight.
          - (ii) Weight of the yarn will determine the proper size of crochet hook to use. Thicker yarns use bigger hooks.

- (c) The term ‘ply’ on the label indicates the strands of thread that create the yarn for example two ply has two strands entwined and three ply has three strands entwined.
  - (i) Four ply is recommend use for crocheting a granny square.

ii) Thread

(1) Know what crochet thread is.

- (a) Crochet thread is specially formulated thread usually made from mercerized cotton for crafting decorative crochet items such as doilies or filet crochet.
- (b) Most crochet threads are thicker in diameter than sewing yarn.
- (c) Crochet thread can withstand considerable stresses from pulls with sharp hooks.
- (d) Thread is generally packaged on spools instead of skeins or hanks and offered for sale in a separate section from ordinary yarns or threads.
- (e) Skein- a length of thread or yarn wound in a loose long coil.
- (f) Hank- a coiled or looped bundle (as of yarn) usually containing a definite yardage

(2) Know criteria to look for in selecting crochet yarn for making a granny square

(a) Type of thread

(i) Cotton

- 1. Cotton crochet thread is the most popular and durable type of thread. It washes up easily without shrinkage and is easy to work with.
- 2. Synthetic
  - a. Synthetic threads on the other hand are pretty to look at but difficult to work with and need special precautions to clean.
  - b. Preferred in crocheting granny squares.

(b) Size of crochet thread

- (i) Crochet manufacturing conventions treat thread and yarn quite differently: manufacturers designate different sizing scales for thread and yarn.
- (ii) Crochet thread comes in sizes from 3 to 100.
- (iii) Diameter is inversely proportional to number, so size 3 is nearly as thick as yarn and size 100 is as fine as sewing thread.
- (iv) 3 to 5 used in crocheting granny squares

(c) Ply

- (i) The term ‘ply’ on the label indicates the strands of thread that create the yarn for example two ply thread has two strands entwined and three ply has three strands entwined.

iii) If new to crochet, it is advised to start off with beginner’s thread so you learn to crochet properly and don’t run into difficulty due to the type of thread you are trying to learn on. In general, the bigger the size of the thread, the better and easier it is to crochet with. A crochet beginner should start with a large size thread. When you are ready to enhance your skill, and then switch to finer types of thread.

(1) For a granny square use 4 ply-worsted weight yarn

2. Obtain tools to crochet a granny square

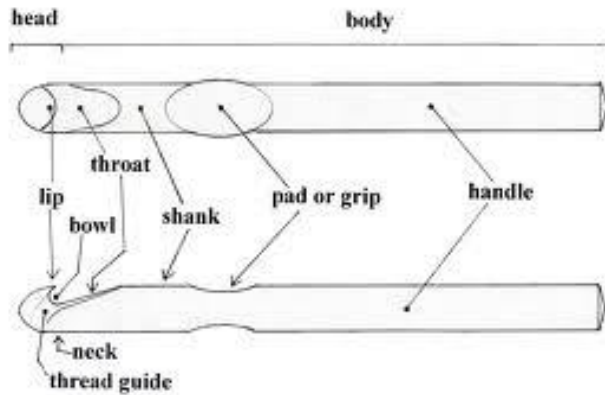
a) Know tools required to crochet a granny square.

i) Crochet hook

(1) Know the purpose of a crochet hook

- (a) A crochet hook (or crochet needle) is a type of needle with a hook at one end used to draw crochet thread or yarn through knotted loops.
- (b) Only one is required unlike knitting which requires two or more knitting needles.

(2) Know the parts of a crochet hook



- Head
- Body
- Lip
- Throat
- Shank
- Pad or grip
- Handle
- Bowl
- Neck
- Thread Guide

(3) Know the types of crochet hooks

(a) Thread hooks

- Are made of steel and have smaller hook heads and shorter shanks generally used with lace weight yarns and crochet threads.
- Sized according to a different scale from yarn hooks.

(b) Yarn hooks

- Modern yarn hooks are usually aluminum or plastic
- Sized according to a different scale from thread hooks
- The largest sizes of thread crochet hooks overlap with the smallest sizes of yarn crochet hooks.

(4) Know the sizes of crochet hooks

- Come in various sizes (measured in millimeters or fractions of an inch), according to the thickness of the needle.



Metric size	U.S. size
.25mm	B-1
2.75mm	C-2
3.25mm	D-3
3.5mm	E-4
3.75mm	F-5
4mm	G-6
4.5mm	.7
5.5mm	J-9
6mm	J-10
6.5mm	K-10 ½
8mm	L-11
9mm	M/N-13
10mm	N/P-15
15mm	P/Q
16mm	Q
19mm	S

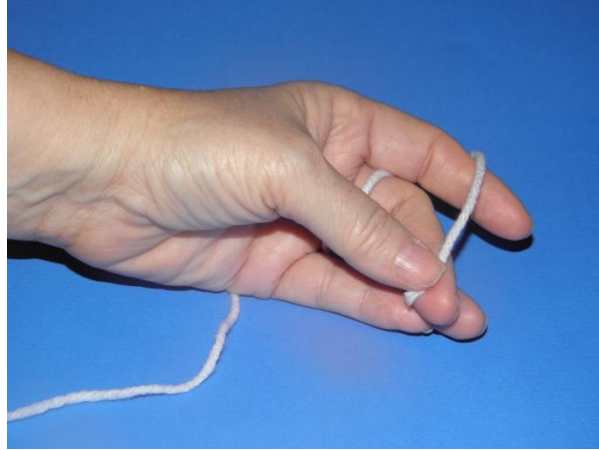
- (b) There are several systems of letters and/or numbers that describe the sizing of crochet hooks.
- (c) The size of the hook is usually matched with an appropriate ply or thickness of thread.
- (d) The largest sizes of thread crochet hooks overlap with the smallest sizes of yarn crochet hooks.
- (e) Plastic
  - (i) Letter or number may vary, rely on mm size
- (f) Steel hooks are sized differently than regular hooks: the higher the number, the smaller the hook, which is the reverse of regular hook sizing. The smallest steel hook is a #14 or .9 mm; the largest is a 00 or 2.7 mm.

Yarn Weight Symbol & Category Names	0 Lace	1 Super Fine	2 Fine	3 Light	4 Medium	5 Bulky	6 Super Bulky
Type of Yarns in Category	Fingering 10-count crochet thread	Sock, Fingering, Baby	Sport, Baby	DK, Light Worsted	Worsted, Afghan, Aran	Chunky, Craft, Rug	Bulky, Roving
Crochet Gauge Ranges in Single Crochet to 4 inch	32–42 double crochets	21–32 sts	16–20 sts	12–17 sts	11–14 sts	8–11 sts	5–9 sts
Recommended Hook in Metric Size Range	Steel 1.6–1.4 mm	2.25— 3.5 mm	3.5— 4.5 mm	4.5— 5.5 mm	5.5— 6.5 mm	6.5— 9 mm	9 mm and larger
Recommended Hook U.S. Size Range	Steel 6, 7, 8 Regular hook B–1	B–1 to E–4	E–4 to 7	7 to I–9	I–9 to K–10 1/2	K–10 1/2 to M–13	M–13 and larger

1. The above table reflects the most commonly used gauges and needle or hook sizes for specific yarn categories.
    - a. Lace weight yarns are usually knitted or crocheted on larger needles and hooks to create lacy, openwork patterns.
    - b. Steel crochet hooks are sized differently from regular hooks—the higher the number, the smaller the hook, which is the reverse of regular hook sizing.
      - (g) For a granny square use G sized crochet hook.
  - ii) Scissors
    - (1) Know use of scissors
      - (a) Used for cutting yarn/thread
    - (2) Know type of scissors
      - (a) Normal household scissors
  - b) Know where to obtain tools to crochet a granny square
    - i) Crochet hook
      - (1) Crafts department of department stores
      - (2) Craft store
      - (3) Sewing supply store
    - ii) Crochet yarn/thread
      - (1) Crafts department of department stores
      - (2) Craft store
      - (3) Sewing supply store
    - iii) Scissors
      - (1) Crafts department of department stores
      - (2) Craft store
      - (3) Sewing supply store
3. Prepare crochet yarn/thread for crocheting
    - a) Know how to prepare yarn/thread for crocheting
      - i) Inspect to ensure thread/yarn free of snags and knots.
      - ii) If so, untangle and place loosely in lap or in a ball.

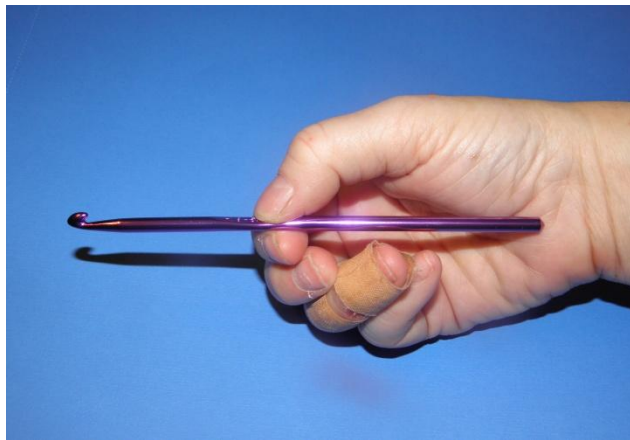
**Visual Cue: No snags or knots in thread/yarn**

4. Hold yarn
  - a) Know purpose of holding yarn
    - i) Keep consistent tension on the yarn during crocheting process
  - b) Know how to hold crochet yarn/thread
    - i) Index Finger Method
      - (1) This involves wrapping the yarn over the index finger in non-dominant hand, grasping the dangling yarn with your thumb and middle finger.
        - (a) Know what non-dominant hand is
          - (i) For left handed learner, this is the right hand
          - (ii) For right handed learner, this is the left hand
      - (2) The index finger provides the tension.



**Visual Cue: Proper holding of crochet yarn/thread**

5. Hold crochet hook in dominant hand
  - a) Know how to hold the crochet hook
    - i) The knife hold
      - (1) Named because you hold the hook as you would a knife, or a mixing spoon.
      - (2) Hold with fingers on grip, not handle or shank. This will give more control of the crochet hook.



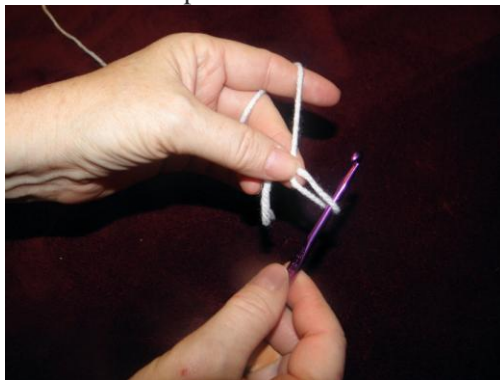
**Visual Cue: Proper positioning of crochet hook in hand**

6. Make a slip knot
  - a) Know the purpose of the slip knot.
    - i) The slip knot is the basic knot used in the beginning of crocheting. It is the only knot used. Some stitches are labeled knots but are not true knots.
  - b) Know how to make a slip knot
    - i) Grasp the yarn in your left hand, between your thumb and middle finger.
    - ii) Allow the yarn to flow freely over your index finger.
    - iii) Support the yarn with your middle finger forming a loop.
    - iv) Leave a tail of yarn trailing below your thumb.

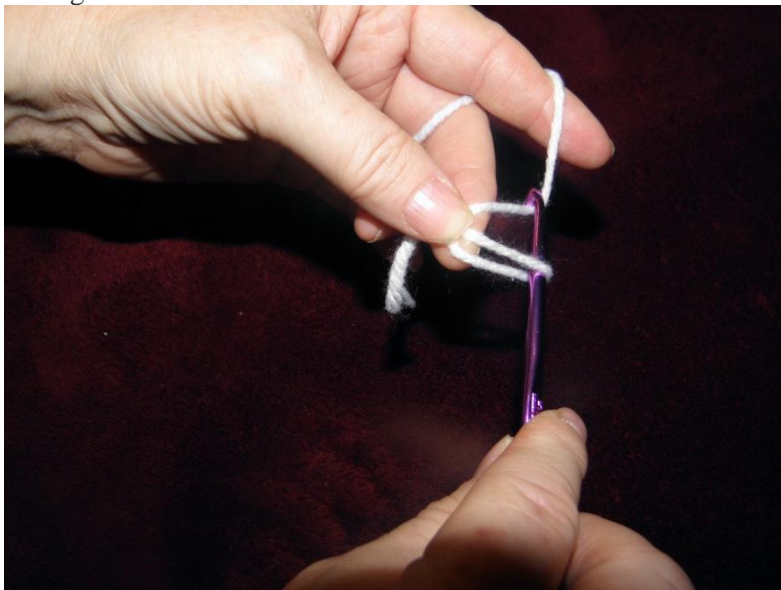


**Visual Cue: Loop formed**

- v) Insert the crochet hook into the loop from the bottom.

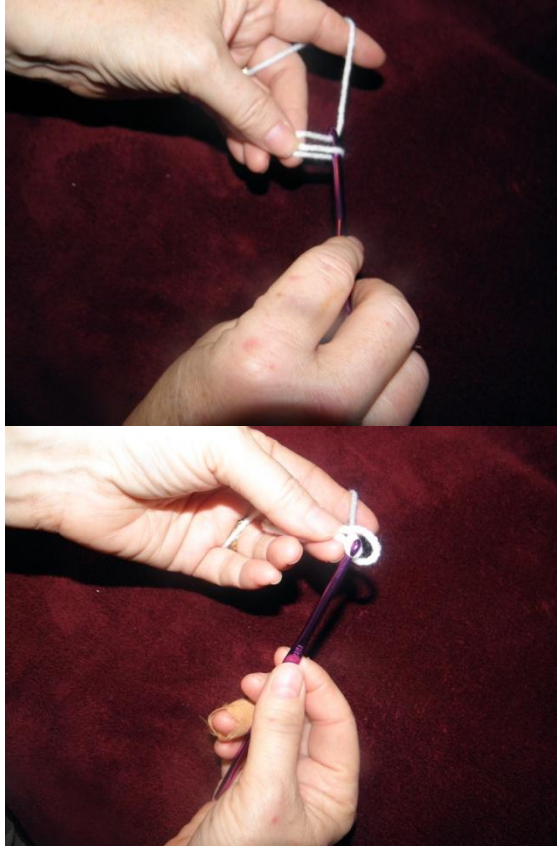


- vi) Use the crochet hook to snag the yarn between your thumb and index finger placing the yarn in the thread guide of the bowl of the crochet hook.



**Visual Cue: Thread placed in thread guide of Crochet hook bowl.**

- vii) You should still be holding the tail of yarn between your middle finger and thumb. Your middle finger, fourth finger and little finger can be used to manipulate the other end of the yarn as it unwinds.
- viii) Use the crochet hook to hook the yarn and draw it through the loop. Be sure to hook the end that is still attached to the ball, not the tail of the yarn that is between your thumb and forefinger.



- ix) You should now have a loose slip knot on your crochet hook. It will need tightening.



**Visual Cue: Slip knot formed**

- x) Leave it on the crochet hook and tug gently on both ends of yarn to tighten it up. Don't over-tighten it; the crochet hook should be able to move easily inside this loop so that you can form your starting chain in the next step.

**Tactile Cue: Slip knot tight but not over tightened.**

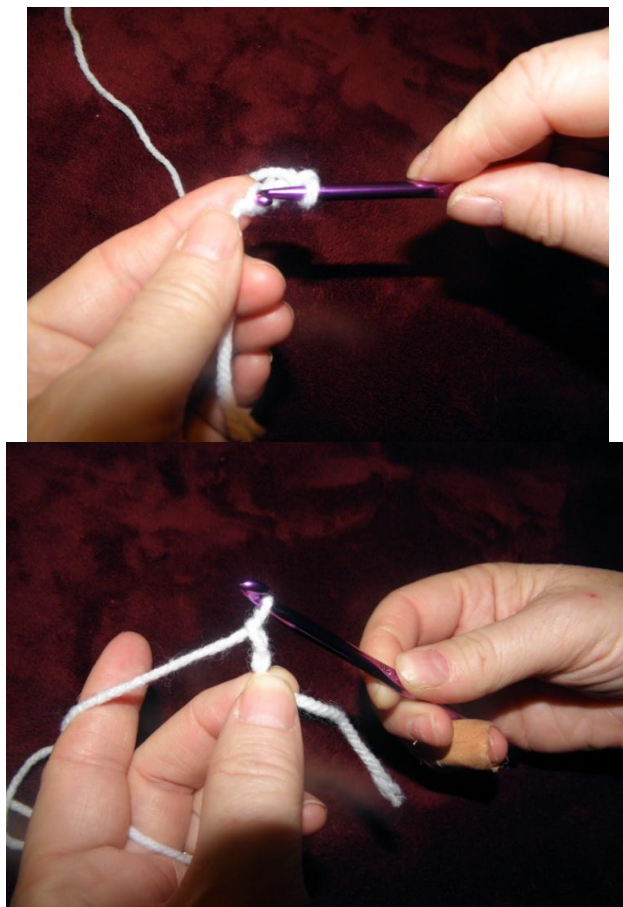
7. Make a foundation chain of five chain stitches

- a) Know the purpose of a foundation chain
  - i) Chain stitches typically form the foundation that the rest of the project is built upon.
- b) Know what a foundation chain looks like



- c) Know how to make a foundation chain
  - i) When you begin to work on your foundation chain, be sure to use the strand coming from your skein.
  - ii) When doing your starting chain, always leave a length of about six inches or so before your first loop of starting chain. This length is woven in when you are finished with your project, so that the end will be secured to guard against unraveling over time.
  - iii) While your crochet hook is still inside the slip knot, slide the hook in between your yarn and the index finger on your left hand.
  - iv) Rotate your crochet hook by about one quarter turn counterclockwise, and use your middle finger, fourth finger, and pinkie to help you manipulate the yarn so that you can easily grab it with the crochet hook.
  - v) After you've hooked the yarn, draw it through the slip knot.
  - vi) As you draw the yarn through, you will likely find it easier to complete the stitch if you return the hook to its original position facing upwards.





vii) To make another chain stitch, hook another loop and draw it through. Repeat until you have five chain stitches. As you crochet, use your thumb and index finger to guide your newly formed chain stitches downward.



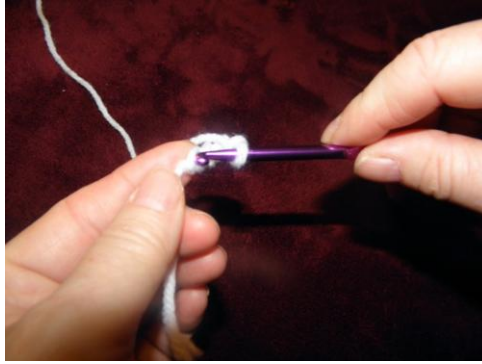
**Visual cue: Compare chain stitch with photograph. Chain stitches should be smooth, even, and not too tight.**

**Tactile cue: maintain even tension on thread, chain stitch should not be too tight.**

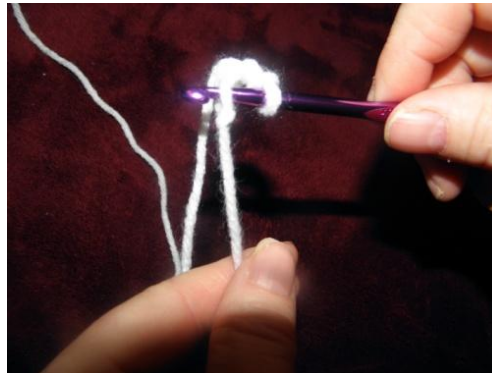
viii) If you find that your foundation chain is too tight in proportion to the first several rows of stitches that follow it, you'll want to consider starting over using a larger hook for the chain.

8. Join with a slip stitch to form a ring.
  - a) Know the function of the slip stitch.

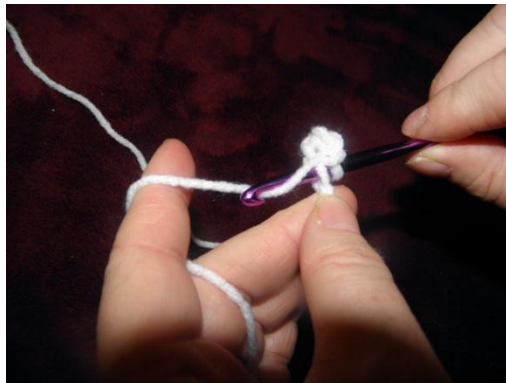
- i) The slip stitch is used to join the ends of a foundation chain together to form a ring when crocheting a granny square.
- b) Know how to do a slip stitch
  - i) Take the chain stitches and gently form them into a ring
  - ii) To close the ring, crochet the slip stitch into the very first chain stitch worked in the beginning. The photo below shows the crochet hook pointing to the spot to insert the hook to work the slip stitch.



- iii) The crochet hook is inserted into the first chain stitch



- iv) Grab the yarn and pull the loop through both the first chain stitch and the active loop on the hook.



- v) This shows how the ring looks at this point.





**Visual Cue: Ring similar to example**

**Tactile cue: maintain even tension on thread, chain stitch should not be too tight.**

9. Make Round 1

a) Know how to make round 1

- (1) When working crochet in rounds, 2 chain stitches are often used as a substitute for the first double crochet stitch in a round.
- (2) In the first round, the double crochet stitches are worked inside the ring.
- (3) In subsequent rounds, the double crochet stitches are worked inside the spaces previously formed by chain stitches.



(4) Chain 2



(5) 2 double crochet

- (a) Know how to double crochet  
(i) Wrap needle with thread once



- (ii) Insert needle into hole



- (iii) Grab thread with needle and pull through hole.





(iv) Wrap thread and pull through first two loops

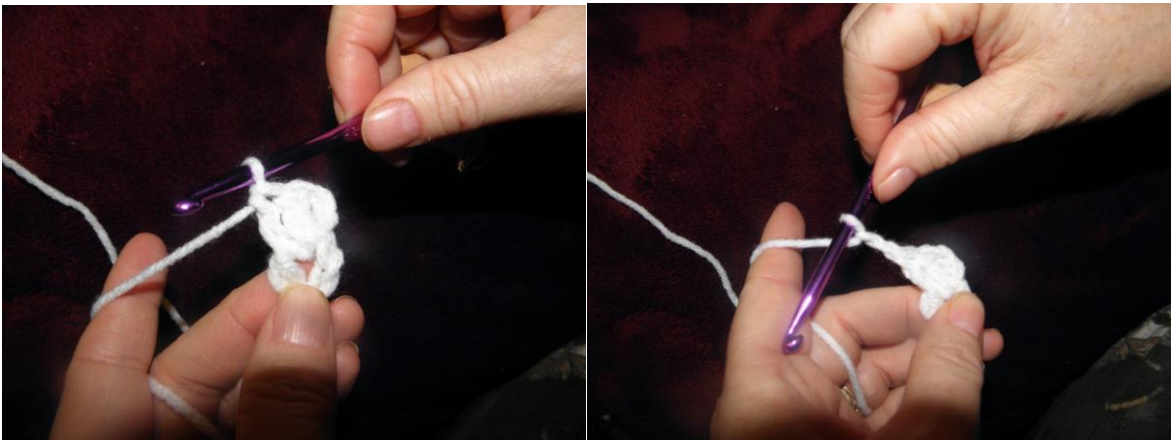


(v) Wrap needle with thread once and pull through last two loops.

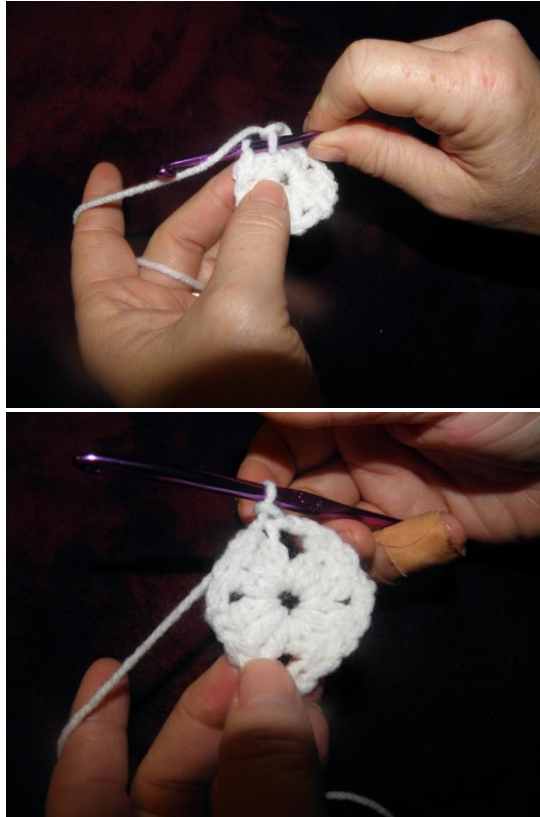


(6) Chain 2

(7) 3 double crochet, chain 2



(8) 3 times, single stitch to join to the 3rd chain stitch from foundation loop



**Visual Cue: Round similar to example**

**Tactile cue: maintain even tension on thread, stitches should not be too tight**

#### 10. Make Round 2

- a) Know how to make Round 2
  - i) Work 3 slip stitches so that your crochet hook is adjacent to the space formed by the closest set of chain stitches.
  - ii) Chain 2
  - iii) 2 double crochet in space



- iv) Chain 2 to form first corner
- v) 3 double crochet in same space
- vi) Chain 2

- vii) 3 double crochet in next space
- viii) Chain 2 to form second corner
- ix) 3 double crochet in same space



- x) Chain 2
- xi) 3 double crochet in next space
- xii) Chain 2 to form third corner
- xiii) 3 double crochet in same space
- xiv) Chain 2
- xv) 3 double crochet in next space
- xvi) Chain 2 to form fourth corner
- xvii) 3 double crochet in same space



- xviii) Slip stitch to join to the 3rd chain stitch you crocheted at the beginning of the round.



## 11. Make Round 3

- a) Know how to make Round 3
  - i) Work 3 slip stitches so that your crochet hook is adjacent to the space formed by the closest set of chain.
  - ii) Slip stitch. Chain 2
  - iii) 2 double crochet in space
  - iv) Chain 2 to form first corner
  - v) 3 double crochet in same space
  - vi) Chain 2



- vii) 3 double crochet in next space
    - viii) Chain 2
    - ix) 3 double crochet in next space



- x) Chain 2 to form first corner
- xi) 3 double crochet in same space
- xii) Chain 2
- xiii) 3 double crochet in next space
- xiv) Chain 2
- xv) 3 double crochet in next space
- xvi) Chain 2 to form second corner
- xvii) 3 double crochet in same space
- xviii) Chain 2
- xix) 3 double crochet in next space
- xx) Chain 2
- xxi) 3 double crochet in next space
- xxii) Chain 2 to form third corner
- xxiii) 3 double crochet in same space
- xxiv) Chain 2
- xxv) 3 double crochet in next space
- xxvi) Chain 2



- xxvii) Slip stitch to join to the 3rd chain stitch you crocheted at the beginning of the round.





**Visual Cue: Round similar to example**

**Tactile cue: Maintain even tension on thread, stitches should not be too tight.**

12. Cut yarn/thread with scissors
  - a) Know how much to leave free
    - i) About three inches free
  
13. Weave in ends
  - a) Know how to weave in ends
    - i) Place the hook through and pull the thread through the stitches. Insert the hook on the other side and pull the thread through the stitches.
    - ii) Repeat until the last length of yarn through the loop remaining on the hook.
    - iii) Draw this tight.

**Visual Cue: Loose end secured, no unraveling.**

## GOALS AND OBJECTIVES

- a. Goal 1. Know crocheting tools, their parts, and how to use them in crocheting a granny square
  - i. **Objective 1A.** Given a list of tools used in working with yarn and thread, identify those used in crocheting a granny square and their purpose with 100 percent accuracy. (Fact-Recall) (Task Analysis 2.a.i) -ii))

**Initial Presentation 1.A** (Show concrete representation with labels). The learner will be given a list of tools used with working with yarn and thread. The tools used for crocheting a granny square will be labeled by name and purpose.

**Generative Strategy 1.A.** (Overt Rehearsal) The learner will write the names of the tools used in crocheting a granny square and their purpose.

**Test Item 1.1** (Objective- Matching) See Test Item 1.

**Test Item 1.2** (Objective- True-False) See Test Item 2.

- ii. Objective 1B. Given a picture of a crochet hook, match its parts with 70 percent accuracy. (Fact-Recall ) (Task analysis 2.a.i.2))

**Initial Presentation 1.B.** (Show concrete representation with labels). The learner will be shown a picture of a crochet hook with its parts labeled and be given a crochet hook.

**Generative Strategy 1.B.** (Overt Rehearsal) The learner will be given a drawing of a crochet hook and instructed to write the parts of the hook on it.

**Test Item 1.B** (Objective-Matching) See Test Item 3.

- iii. Objective 1C. Given several descriptions of a crochet hook being held, select the correct option when crocheting a granny square with 100 percent accuracy. (Concept-Application ) (Task Analysis 5.a) )

**Initial Presentation 1.C.** (Show concrete representation with labels). The learner will view a figure showing the correct way to hold a crochet hook and be given a crochet hook. The supporting text will explain the proper method to hold a crochet hook.

**Generative Strategy 1.C** (Elaboration) The learner will imitate holding the crochet hook IAW the figure and write in their own words, the proper way to hold it.

**Test Item 1.C** (Objective-multiple choice) See Test Item 4.

- b. Goal 2. Know the materials used in crocheting a granny square and how to manipulate them.

- i. Objective 2A Given a list of crochet materials, select the proper material used in crocheting a granny square with 100 percent accuracy. (Concept-Application ) (Task Analysis 1.c )iii(1))

**Initial Presentation 2.A** The learner will be presented different types of crochet materials and their characteristics.

**Generative Strategy 2.A**

**Organization: 2.A.1** The learner will make two lists, one of yarn and thread. Under each list they list the traits to determine applicability for crocheting a granny square.

**Integration: 2.A.2** The learner will insert the criteria in the list made in 2.A.1 to select the proper materials to use in crocheting a granny square.

**Test Item 2.A** (Objective-multiple choice) See Test Item 5.

- ii. Objective 2B. Given several descriptions of crochet yarn/thread being held, select the correct option when crocheting a granny square with 100 percent accuracy. (Concept-Application) (Task Analysis 4.b) )

**Initial Presentation 2.B** (Show concrete representation with labels). The learner will view a figure showing the correct way to hold crochet thread and be given crochet thread. The supporting text will explain the proper method to hold crochet thread.

**Generative Strategy 2.B** (Elaboration) The learner will imitate holding crochet thread IAW the figure, and write, in their own words, how it is held.

**Test Item 2.B** (Objective- multiple choice) See Test Item 5.

- c. Goal 3. Know the crochet stitches and knot used making a granny square.
- i. Objective 3A. Given a list of crochet stitches, identify the crochet stitches used in making a granny square with 100 percent accuracy. (Fact-Recall) (Task Analysis 1.c)

**Initial Presentation 3.A** (Show concrete representation with labels) The learner will view figures of labeled crochet stitches used in making a granny square.

**Generative Strategy 3.A** (Overt Rehearsal) The learner will write down the types of crochet stitches used in a granny square.

**Test Item 3.A** (Objective- multiple choice) See Test Item 6.

- ii. Objective 3B. Given a list of knots, identify the crochet knot used in making a granny square with 100 percent accuracy. (Fact-Recall) (Task Analysis 1.d))

**Initial Presentation 3.A** (Show concrete representation with labels) The learner will view figures of crochet knot used in making a granny square.

**Generative Strategy 3.A** (Overt Rehearsal) The learner will write down the type of crochet knot used in a granny square.

**Test Item 3.A** (Objective- multiple choice) See Test Item 7.

- d. Goal 4. Know the process in crocheting a granny square.
- i. Objective 4A. Given a list of out-of-sequence steps in crocheting a granny square, match them in chronological order with 100 percent accuracy. (Procedure-Recall) (Task Analysis 6-13)

**Initial Presentation 4.A** (Show concrete representation with labels) The learner will read the process for crocheting a granny square in the instructional material.

**Generative Strategy 4.A**

**Organization: 4.A.i** The learner will group and write down the steps for making a granny square into five steps.

**Integration: 4.a.ii** The learner will arrange the five steps for making a granny square into a chronological sequence.

**Test Item 4.A** (Objective- match) See Test Item 9.

- ii. Objective 4B. Given a list of statements, select the one that best describes the function of the foundation chain with 100 percent accuracy. (Fact-Recall) (Task Analysis 7.a))

**Initial Presentation 4.B** (Show concrete representation with labels) The learner will read the purpose of the foundation chain in the instructional material.

**Generative Strategy 4.B** (Elaboration) The learner will state in their own words, the function of the foundation chain.

**Test Item 4.B** (Objective- Multiple choice) See Test Item 9.

- iii. Objective 4C. Given crochet yarn, a crochet hook, and scissors, properly utilize them in crocheting a granny square utilizing a slip knot, foundation chain, slip stitches, double crochet stitches, to form a ring and required rounds IAW the criteria in the instruction. (Procedure-Application) (Task Analysis 1-13)

**Initial Presentation 4.C** (Initial presentation) The learner will view the granny square being crocheted via figures in the instructional material.

**Generative Strategy 4.C**

**Step #1 (Develop a mental model and cues)** The learner will imagine themselves crocheting a granny square.

**Step #2: (Practice and Feedback):** The learner will fabricate a granny square following the guidance in the instructional material as they read it. They will compare it with the figures in the instructional material and cues throughout the process.

**Test Item 4.C** (Objective- Procedure-Application)

## Sequencing Strategy

Sequencing strategy selected was Posner and Strike's learning related sequencing with identifiable prerequisites and world-related sequencing with temporal phenomenon. The learning related sequencing with identifiable prerequisites is used to teach the skill required for the next consecutive skill. This is based on knowledge required prior to performing the task. For example, holding the crochet hook and thread before teaching crochet stitches. The world-related sequencing with temporal phenomenon is utilized because this is a procedure and the process of crocheting consists of steps in sequence. Task expertise sequencing was used in the objectives for organizing the psychomotor ones from easiest to difficult. I incorporated 3B, 4B, 3A, and 4C in the steps consisting of 4A. This allowed me to sequence the instruction as it was required in the procedure for crocheting a granny square.

Sequencing 2A, 1A, 1B, 2B, 1C, 4A (3B, 4B, 3A, 4C)

## Preinstructional strategy

The preinstructional strategy selected will be an overview. Objectives was ruled out because the instructional material exceeds 2,500 words and could render difficulty for the learner to remember the objectives and content. The overview will describe how the learning how to crochet will aid the learner in developing flexibility of their hands. It will also serve as an introduction to the subject of crocheting. The objectives developed for crocheting a granny square are primarily fact and concepts which match the task attributes of the overview strategy. The overview will suffice in preparing the learner for the task of crocheting a granny square.

## Formative Evaluation

**SME Review:** The SME was utilized during the documentation primarily in task analysis. Once documentation is complete, it will be provided to the SME for a technical review to verify that the analysis was correct and complete, the objectives are attainable, and that the assessments are viable. It was agreed by the SME that feedback will be provided back via track changes in Microsoft word. The designer will then evaluate the changes and if necessary, confer with the SME for any that might not be agreed upon.

**Field Test:** Prior to completion, the instructional material will be administered by physical therapists at the Sunnyside Rehabilitation Center for validation. The Instructional Designer will be present to observe and record notes at each session. Notes will be documented via pen and ink on copies of the Instructional Documentation, Instructional Instruction, and Assessment. Additional notes if necessary will be attached to the developer's copies of these documents. The staff will then be interviewed regarding feedback from the patients after completion of the instructional unit.

### Interview Questions For Staff of Sunnyside Rehabilitation Center

1. Was the patient able to crochet a granny square after taking the instructional unit? If not why?
2. Were there any environmental problems that impacted the patient while taking the instructional unit? For example, the patient not being able to sit upright in the bed would impact taking the instructional unit.
3. Did the patient have any comprehension problems reading the text or viewing the graphics. If so, what were they?
4. Did the instructional material aid in your physical therapy program?
5. How do you feel the instructional material can be improved?

Issues identified in the instruction such as technical errors, administrative errors (misspelling, punctuation, etc.), or difficulty understanding the material will be documented. Technical errors will be brought to the attention of the Subject Matter Expert, if necessary. The Instructional Designer will review all comments and observations and make necessary correction to the instruction and development.