neural knitworks

craft a healthy brain

What is Neural Knitworks?

JOIN this community art project promoting mind and brain health. Whether you're a whiz with yarn, or just discovering the joy of craft, now you can crochet wrap, knit or knot — and find out about neuroscience.

Neurons are electrically excitable cells of the brain, spinal cord and peripheral nerves. The billions of neurons in your body connect to each other in neural networks. They receive signals from every sense, control movement, create memories and form the neural basis of every thought.

Neural Knitworks invites you to create textile neurons that will contribute to an on line art exhibition. Your hand made creations will join with others to weave a giant virtual textile 'neural network'. No knitting experience is required and people of all ages can participate.

Have fun as you:

- design your own woolly neurons, or get inspired by our scientifically-informed knitting, crotchet or knot patterns
- natter with neuroscientists and teach them a few of your crafty tricks
- increase your attention span and test your memory.

Calm your mind and craft your own brain health as you:

- forge friendships
- solve creative and mental challenges
- practice mindfulness and relaxation
- teach and learn

Neural Knitworks are based on the principle that yarn craft, with its mental challenges, social connection and mindfulness, helps keep our brains and minds sharp, engaged and healthy.

Meet the Neural Knitworks team

Textile artist Pat Pillai's idea to knit and weave brain cells was the winning pitch at the 2013 Ultimo Science Festival Art & Science Soiree in Sydney.

With encouragement from the Soiree's organiser Sophie Weeks and fellow artist Rita Pearce, the idea for the Neural Knitworks exhibition at Hazelhurst Regional Gallery soon took hold.

Inspiring Australia's NSW Manager Jackie Randles worked with the artists to extend the concept beyond the gallery as a National Science Week community art project. Input also came from Jenny Whiting, Heather Main, Deirdre Molloy, Sarah McKay, Rod Dowler, Kuldip Sidhu and Carrie Kibbler.

Huge thanks to the many scientific researchers who provided access to inspirational images used as the basis of patterns, and to all those who have offered support and assistance along the way to bring this big woolly project to life.

The Neural Knitworks artists would like to acknowledge the mentorship of Hiromi Tango. The original concept for *Neural Knitworks* builds on the success of their collaborative project *Hiromi Hotel: Moon Jellies* at Hazelhurst Regional Gallery & Arts Centre in 2013. ; Knit a Neuron, UK: Dr Anne Cooke & Helen Featherstone for sharing tips on getting started and patterns; Gabrielle Theriault at Ravelry for sharing knitting patterns; Dee Molloy for the initial pattern book design, and The Sydney Hyperbolic Crochet Reef Project.

Founding partners include Hazelhurst Regional Gallery, Inspiring Australia (NSW), ANSTO, Your Brain Heath, Brain & Mind Research Institue, the Centre for Healthy Brain Aging, and Alzheimer's Australia Dementia Research Foundation. In 2015, Neural Knitworks partnered with the Caringbah Lions Club.

A big thank you to all those who contributed to Neural Knitworks in 2014 and helped bring this woolly artwork to life.

Get involved

GET CREATIVE, YOUR BRAIN IS UNIQUE. Dive into your stash and find your favourite yarn – that means anything that you can crochet, not just wool.

Choose from all the colours of the rainbow, except red or black. The cell body should be mostly one colour. Have fun and splash out with highlights, but try to keep the axon & dendrites of a single neuron similar colours to each other.

For the exhibition at Hazelhurst Regional Gallery & Arts Centre in August 2014, donated neurons were combined into a sculpture of the area of the brain known as the Cerebral Cortex. Colour suggestions were provided with that in mind. However, don't be afraid to follow your own research or to bend the rules a little. Play and get inspired by the many neuron shapes.

Hints and fun stuff*

CHANGE THE COLOUR OF YOUR BRAIN – by knitting /winding a thin thread of a brighter or slightly different colour with your main yarn. You will be amazed at how little it takes to brighten up your brain cell, or to change the overall colour. Tapestry wool and machine knitting wool works well, as does sewing thread.

BRIGHTEN UP YOUR SYNAPSES – stitch beads or small buttons to the ends of axon branches to make junctions (also known as boutons) for your synapses.

SHINE FROM THE INSIDE – the nucleus is the centre of the cell, let yours show. Stitch a safety pin or a thumbnail sized 'eye' on your cell. Include your initials, add a tiny picture of something that you love, use your favourite technique – cross stitch, beading, leatherwork … show what you are made of.

* for activities not involving young children.

Host your own Neural Knitwork!

You'll just need your favourite yarn, needles, and copies of our scientifically-based neuron-crafting patterns.

Gather together a group of friends who knit, crochet, design, spin, weave, artists and crafters, or anyone keen to give it a go. Those who know how to knit can teach others how to do it, and there's even an easy no knit patterns that you can knot.

Download a neuroscience podcast to listen to and you've got a Neural Knitwork! Visit our event organiser's online toolbox for tips and resources to help you host a successful event. List your event on the National Science Week calendar to take advantage of multi-channel promotion.

Display your knitted neurons

During 2014 an enormous number of handmade neurons were donated (1665 in total!) and used to build the giant walk-in brain. In 2015, the Neural Knitworks team invited you to create your own homegrown Neural Knitwork for National Science Week. Together you created a giant 'virtual' neural network by linking your displays visually online.

The Neural Knitworks team invite you* to continue adding to this 'virtual' neural network in 2016 and beyond.

Your creation can be big or small, or simply consist of neighbourhood neural 'yarn-bombings'. Knitworks can be held at home, at work or at school. For ideas and inspiration see page 15, check out our gallery on the Science Week page, or go to the Neural Knitworks Facebook page.

Join our Neural Knitwork group on Facebook where you can share photos of your woolly creations, and find information about Neural Knitworks workshops, knit-ins and public talks featuring neuroscientists.

Let's watch our Neural Knitwork grow!

* In inviting you, we ask that you respect the rights of contributors who share images and other material. We invite you to share the link http://www.scienceweek.net.au/neural-knitworks/ and invite you to access /print the pattern book PDF from the link. The pattern book is not to be hosted on other websites or used for commercial purposes. We also ask that you attribute the founding team in any derivative work as per the information on page 3.

Neuron Anatomy & Glossary

dendrite branches

dendrites

nucleus

soma

axon

axon branches

terminal button
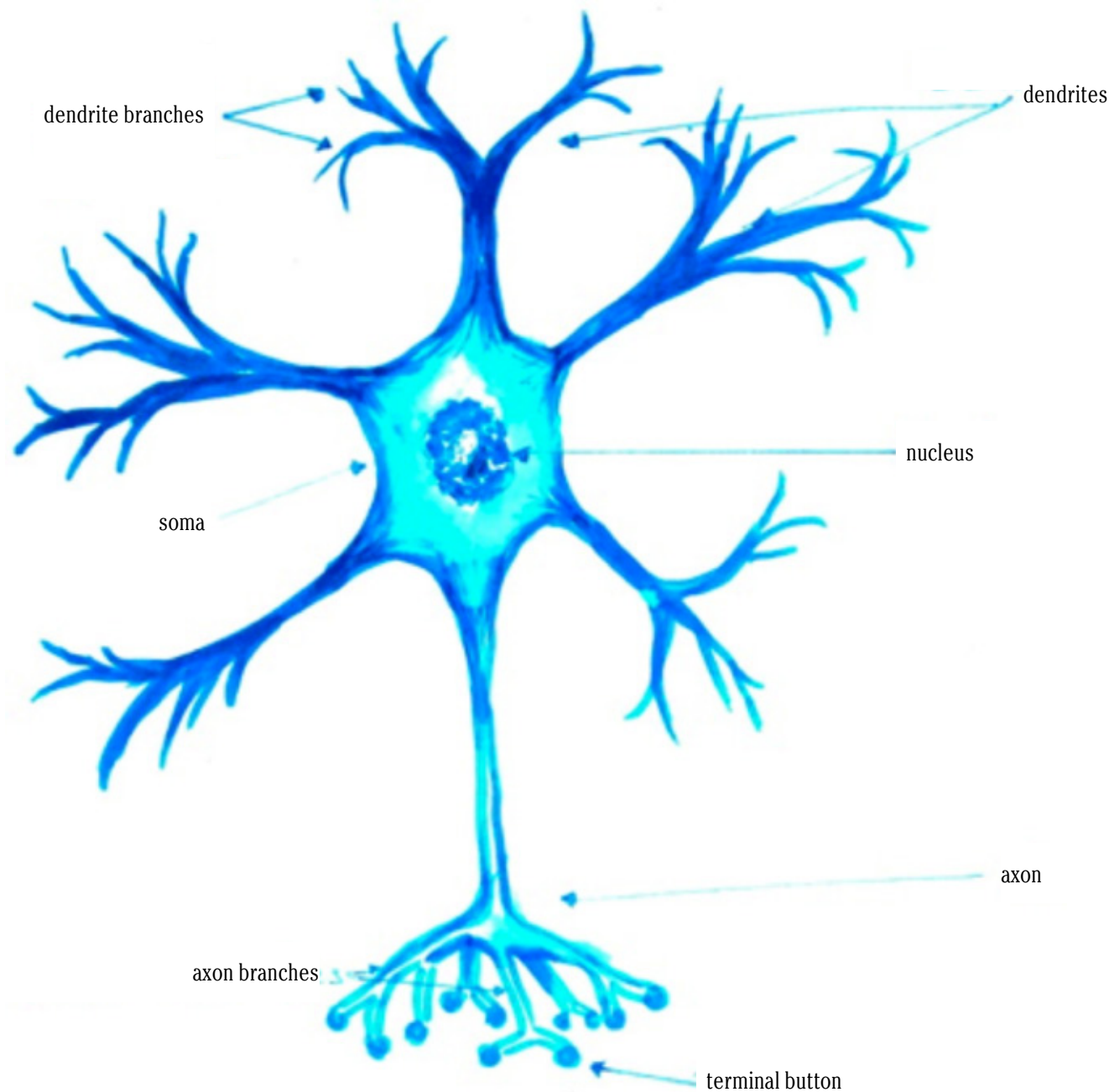
Knitting Glossary

kfb: knit into front and back of stitch
k2tog: knit two together
Stocking stitch: knit one row, purl one row – the work will roll into a tube
Pick up stitches: slip the tip of a needle under the "bar" between knitted stitches, and place the yarn between the needle and the knit piece. With the needle, pull the yarn from under the bar, creating a loop, as you would for a standard knit stitch. Repeat with the bar immediately to the left.

Crotchet Glossary

ch : chain **sc** : single crochet (UK) **dc** : double crochet (UK).

Pyramid Crochet Neuron *by Jenny Whiting*

Materials

- 4.5-5mm hook
- 6-8 ply yarn, bright colours other than red preferred
- Size can vary, aim for cell body 6 -7 cm long
- Wadding, fabric or recycled plastic for stuffing
- 1-2mm wire (optional)

Base:
2 ch
Rd 1: 6 dc in 2nd ch from hook, sl st to 1st dc. [6dc]
Rd 2: 1 ch, 2dc in each dc, sl st to 1st dc. [12dc]
Rd 3: 1ch, 2dc in 1st dc, 1 dc in next 3 dc, 2 dc in next dc, (1 dc in next 3 dc, 2 dc in next dc). Repeat from (to). Sl st to 1st dc. [15dc]

1st Side:
Row 1: 1 ch, dc in 2nd dc, { 1 dc in each of next 4 dc, 1 ch, turn.
Row 2: 1 dc in each of next 5 dc, 1 ch, turn
Row 3: 1 dc in each of first 2 dc, dec dc over next 2 dc, dc in last dc, 1 ch, turn.
Row 4: 1 dc in first dc, dec dc over next 2 dc, dc in last dc, 1 ch, turn
Row 5: (optional – leave out row 5 for a more stumpy cell body) 1 dc in each dc, 1ch, turn.
Row 6: 1dc, 1dec dc over next 2 dc, 1ch, turn
Row 7: 1dec dc in next 2 dc. Fasten off.}

2nd side:
Join in yarn in next dc of base and dc in same stitch. Repeat from { to }

3rd side: as for 2nd side

Forming cell body

Fold up two of the sides and either stitch them together, or single crochet them together by doing 1 sc into the ends of each of the aligned rows. Crocheting them together gives quite a defined edge. Attach remaining side to first side along one edge. Stuff with stuffing and stitch up remaining seam.

Axon: attach yarn into the single dc on the top of one of the sides. 1 dc in that stitch and into the top stitch of each side [3 dc], sl st into 1st dc. If it's a bit tricky to find the stitches – don't worry – just do your best so you have about 3 stitches on your hook. Do a couple of rounds of dc into each stitch then hook through each dc, yarn over hook and pull through all loops on hook so you are left with one stitch.
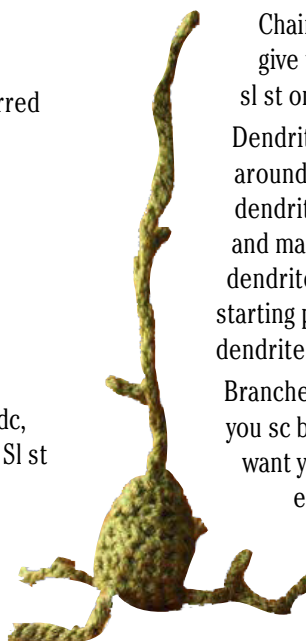
Chain as many as you like (30-40 is a good guide) to give the length of axon you want. Turn, sc into each ch, sl st onto top of cell body. Fasten off.

Dendrites: make several (3-6 is a good guide) dendrites around the base of the cell body. To make branched dendrites, see below. {Attach yarn at desired position and make 6-15 chain depending on desired length of dendrite. Turn, sc into each ch to end, sl st back into starting point. Fasten off.} Repeat from {to} for each dendrite.

Branches: to make branches on your axon or dendrites as you sc back along your length of chains, stop where you want your branch, make a few extra chains, turn, sc in each ch back to the starting stretch of chains and carry on back to the cell body.

To give the axon (or dendrites) more strength, cut 1mm wire twice the length required plus 2cm. Bend the wire in half, thread through the axon or dendrite starting inside the cell body and working to the end. At the end, twist the doubled end through a loop of crochet and double over again to secure it. Twist the raw ends together inside the cell body, catching some of the stuffing, bend wire in toward the centre so no sharp end protrudes. **Congratulations: you have created a neuron.**

FEEL FREE TO PLAY – for a slightly larger cell body try adding 2 extra rounds to the base:

Rd 4: 1ch, 2dc in 1st dc, 1 dc in next 4 dc, 2 dc in next dc, (1 dc in next 4 dc, 2 dc in next dc). Repeat from (to). Sl st to 1st dc. [18dc]
Round 5: 1ch, 2dc in 1st dc, 1 dc in next 5 dc, 2 dc in next dc, (1 dc in next 5 dc, 2 dc in next dc). Repeat from (to). Sl st to 1st dc. [21dc]

1st Side:
Row 1: 1 ch, dc in 2nd dc, { 1 dc in each of next 6 dc, 1 ch, turn.
Row 2: 1 dc in each of next 7 dc, 1 ch, turn
Row 3: 1 dc in each of first 3 dc, dec dc over next 2 dc, dc in last 2 dc, 1 ch, turn. (6sts)
Row 4: 1 dc in first 2 dc, dec dc over next 2 dc, dc in last 2 dc, 1 ch, turn (5sts)
Row 5: continue as for side1, row 2 in the original pattern.

2-in-1 Crochet Neurons by Pat Pillai

Materials are the same for both.

Hook and yarn sizes are just a guide. Using a 4.5 hook with 8 ply gave the measurements below.

Materials
4.5 - 5mm hook
6 - 8 ply yarn, ½ ball or less
Safety pin/marker, move at the beginning of each round.
Small amount of wadding or recycled plastic for stuffing
1-2mm wire for reinforcing dendrites and axon (optional)
Darning needle
Abbreviations: ch = chain sc = single crochet (UK) dc : double crochet (UK). Work the whole pattern continuously, do not join at the end of each round. Mark the beginning of the round with a safety pin.

Base for pyramid neuron
2 ch
Rd 1: 6 dc in 2nd ch from hook. [6dc]
Rd 2: 2dc in each dc. [12dc]
Rd 3: (1dc in next dc, 2 dc in next dc) rpt to marker (18 dc)
Rd 4: (1 dc into next 2 dc, 2dc into next dc), rpt to marker (24sts)
Rd 5: (1 dc in next dc, 2 dc in next dc) rpt to marker (36 sts)
Base now measures approx 6 - 6.5cm
Rd 6 to 8: 1dc into each dc (Depth of sides now measures 2-2.5cm, make an extra dc rd if needed.)

Rd 9: 1dc into each dc
Rd10: (1dc into 2nd dc from hook, 1 dc into next 4 sts) rpt to marker (30 sts)
Rd 11: (1dc into 2nd dc from hook, 1 dc into next 3 sts) rpt to marker (24 sts)
Rd 12: 1dc into each dc
Rd 13: 1dc into 2nd dc from hook, 1 dc into next dc) rpt to marker.(16sts) Height now 3.5 cm approx.
Rd 14 & 15 1dc into each dc next 2 rows (Height now 5cm approx.
Rd 16: (1dc into 2nd dc from hook, 1 dc into next 2 dc,) rpt to marker (12sts)
Rd 17: 1dc into each dc next. Save your loop on the safety pin while you add stuffing. Retrieve loop.
Rd 18: (1dc into 2nd dc from hook, 1 dc into next) rpt to marker (8sts)
Remove marker and make 1dc into each dc until height from base is 7-8cm, stuffing as you go. Continue round decreasing by making (1dc into 2nd dc from hook, 1 dc into next) until 3sts

Pyramid neuron
Preferred colours: bright orange, yellow, pink, aqua, purple, lime green.
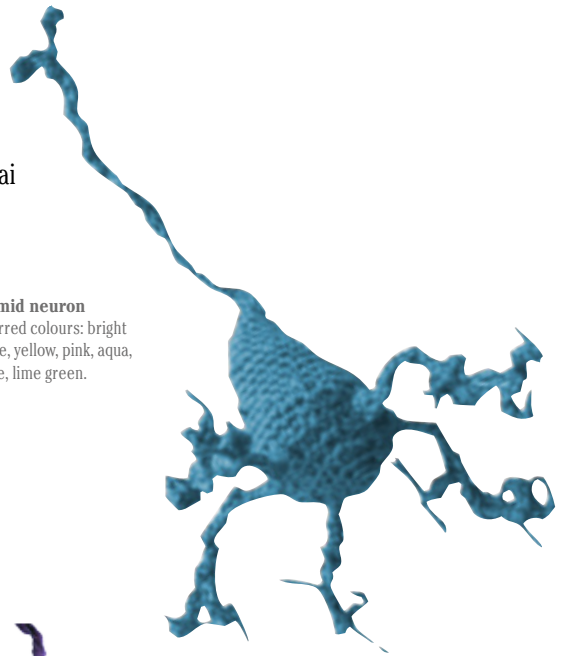
Stellate neuron
Preferred colours: darker greens, blues and purples.

remain, work on these 3 stitches for two or three rounds then continue as for 'easy axon', or continue on 3 stitches for the length of the axon.

Easy Axon: Continue on 3sts for 3 or 4 rows then pull loop through all three stitches and extend the loop to at least 90cm long or as long as you like, measure the yarn against the loop so that you have a triple strand of yarn. Cut this single strand at the point where it lines up with the top of the loop. Pull the big loop back in and keep making chains until you have used up almost all the free yarn to give your axon.
Before ending off, thread another 3 strands of yarn through the loop, pull the loop tight. Use the added strands to make terminal branches by knotting, plaiting or chain crochet. Axon terminals are similar in size to the rest of the axon, with a terminal button, so end with a knot or sew on a bead or button. Tidy ends with darning needle. If desired, thread thin wire through axon to make it stand up. ▶

Dendrites: Cut 3 long strands of yarn and pull through the cell body where you want your dendrite. Leave about 10 cm on one side and make a long chain with the rest. Add branches at the end as for the axon, add as many as you like. There are many diagrams on the internet to inspire you. Dendrite branches tend to taper at the end, so it's OK to leave ends hanging. Thread with wire if desired.

Stellate neuron

As for pyramid neuron until Rd 9

Rd 9: (1dc into 2nd dc from hook, 1 dc into next 2 sts) rpt to marker (27sts)

Rd 10: (1 dc into 2nd dc from hook, 1 dc into next st) rpt to marker (18st)

Remove marker and continue decreasing in the same pattern until 8 st remain, add stuffing, squashing the cell body to a fat disc 7-8cm diameter x 4-5 cm deep.

Now continue to decrease until 3 sts remain, as for pyramid cell. Add an axon and dendrites by looping through the cell as above.
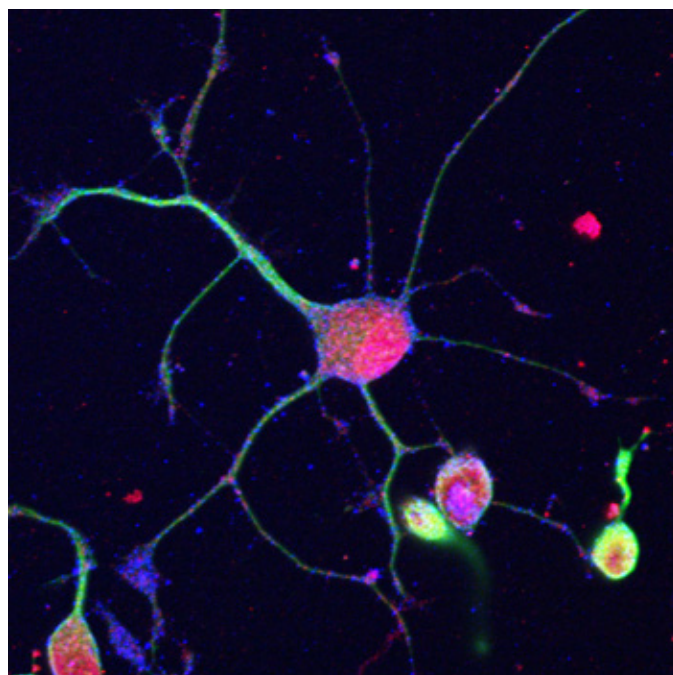
Ping-2: Cultured neuron stem cell in day 1.
Ping Hu, Bosch Institute Advanced Microscopy Facility, The University of Sydney

Pattern
Granny Square Crochet Neurons by Rita Pearce ©

This hybrid of crochet and no-knit neuron techniques was designed in response to a request from the diversional therapists at a dementia care facility who asked if we could use excess 'granny squares' to create neurons.

Method:
Take one granny square, *cut a square of matching or contrasting fabric the same size, stitch onto the inside as lining. *Granny square pattern not included.

For instructions on adding stuffing and adding axons and dendrites, follow instructions for 'Simple Square neuron Knitting Pattern' on page 14. Alternately, make plaited dendrites: for each dendrite, cut or rip 3 strips of fabric approx 30cm x 2cm and tie firmly to the granny square, then plait together, tie off and leave ends free for branches.

To complete the neuron, wind a few strands of contrasting yarn around the cell body as shown, then sew on a nice fat button for a nucleus.

Knitted Neuron
by Gabrielle Theriault. Adapted by Pat Pillai

Materials
- 8 ply or double knitting yarn, use any bright colour except red
- (sample used less than ½ ball of 100% acrylic knitting yarn)
- size 9 (3.75mm) needles, double pointed if you have them
- Tapestry needle
- Small amount of stuffing & a few pipe cleaners
- Safety pin or spare yarn

Finished size
Body approximately 7.5cm. Example: Dendrites 30cm, Axon 30cm, make longer or shorter as you wish.

Gauge
5cm = 10 sts and 14 rows in stocking stitch. Like most knitted toys, gauge isn't super important. Just make sure that the stuffing doesn't show between the stitches.

Soma (cell body)
Cast on 6 stitches

1. [kfb] 6 times (12 sts)
2. Purl all
3. [kfb, k1] 6 times (18 sts)
4. Purl all
5. [kfb, k2] 6 times (24 sts).
Tie a spare piece of yarn to mark the beginning of the round.
6. Purl all
7. [kfb, k3] 6 times (30 sts)
8. Purl all
9. Knit all
10 - 16. Repeat row 8 & 9 three times then row 8 once
17. [k2tog, k3] 6 times (24 sts)
18. Purl all
19. [k2tog, k2] 6 times (18 sts)
20. Purl all
21. [k2tog, k1] 6 times (12 sts)
22. Purl all
23. [k2tog, k2] 3 times (9 sts)
24. Purl all
25. [k2tog, k1] 3 times (6 sts)
26. Purl all
27. [k2tog, k1] 2 times (4 sts)
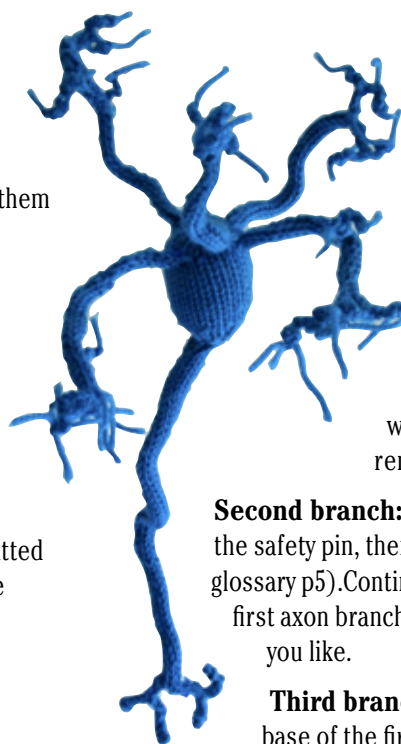
Axon: Using these 4 stitches, continue in stocking stitch for 25 cm (or as long as you like). Knit axon terminal branches by placing one stitch on a safety pin and continuing on 3 stitches.

First branch: Using stocking stitch, knit for 14 or more rows, next row K2 tog, stocking stitch for a few more rows, K2 tog, then cut yarn leaving 10cm to work with. Pull yarn tightly through the remaining stitch.

Second branch: Pick up the stitch that was left on the safety pin, then pick up two more stitches (see glossary p5).Continue on these 3 stitches as for the first axon branch, making it longer or shorter as you like.

Third branch: Pick up three stitches near the base of the first 2 branches, two from one row and one from the row above. Knit in stocking stitch for about 2.5 cm, then knit 2 tog at the beginning of the next row, continue as for other branches.

Minor branches for axon or dendrites: To make more small branches pick up two or three stitches on a branch and work in stocking stitch for as long as you wish. Make short ones, long ones, have fun! To finish, tuck in the loose yarn from the end of each branch. Finish axon branches by tying a knot, repeat knot several times so that the yarn forms a small hard ball. Alternately, sew on a bead *or small button*. Sew ends in.

Dendrites: Along the opposite end of the cell body, create 5 dendrites with two or more branches on each. Start by picking up four stitches from the main body. Knit as for axon branches, taper toward the end by decreasing until only one stitch remains. Pull yarn through tightly. Tie in more yarn for finer branches if desired.

Finishing Off: So that axon and dendrites hold their shape, reinforce with fine wire or a pipe cleaner: bend a ½ cm of wire at each end so the ends are blunt, then insert wire along the full length of the branch, leaving 5cm or more inside the cell body. Insert stuffing in the body around the wire, pushing ends toward the centre. Stitch the sides of the cell body together, repeat for raw edges of branches.

*if you are not giving the neuron to a small child.

No-knit Neuron *by Pat Pillai ©*

Materials

- old t-shirt or a piece of fabric cut into a 18cm x 6cm rectangle and a 21cm square
- 6 or more pipe cleaners
- 2 or 3 rubber bands
- A ball of yarn, any thickness*, or stretch fabric cut into long narrow strips 0.5cm wide, sewing cotton and thin yarn for highlights (optional)

Preferred colours: yellow, orange, bright pink, lime green, light purple

Every neuron has a cell body with a nucleus inside it, an axon at one end and one or more dendrites branching out in other directions (see diagram on page 2).

* Yarn can be any thickness, thin yarn – work two lengths together.

Method

Nucleus

Fold the small rectangle in half to form a square. Bring each corner into the centre like an envelope, squeeze the envelope into a rough ball & secure with a rubber band or a few stitches.
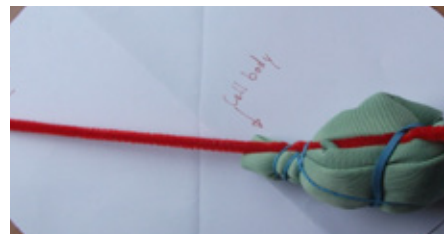
Cell body

Fold the square into a triangle and roll into a cone, push the nucleus firmly into the centre, tuck the ends in over the nucleus.

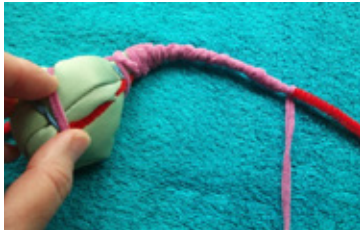Stretch a rubber band around the cone two or three times to hold everything together.

Add an axon by sliding a pipe cleaner under the rubber band, with one end extending a few cm toward the middle of the cone. ▶
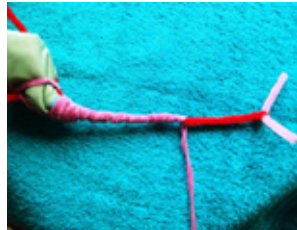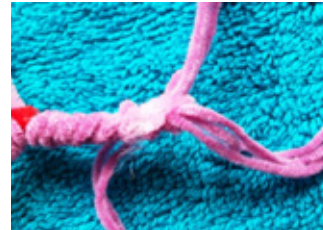
Covering the axon

Thread yarn under the rubber band, wrap it around the cell body a few times, tie a knot at the beginning of the axon (red) then wind until 0.5 cm from end.

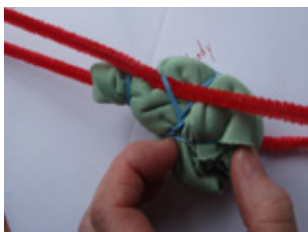### Adding an axon terminal and terminal buttons

Add extra pipe cleaner to make terminal branches as shown, (pink). Continue to cover by winding, form a knob.

Alternately, tie in three or more strands of yarn where you want the branch, then plait or knot to the thickness of the axon, end with a knot.
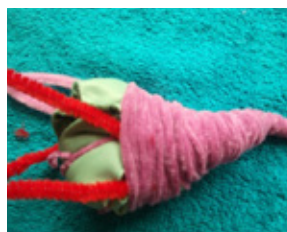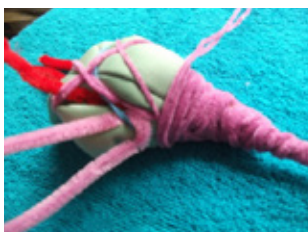
Adding dendrites

Slide another pipe cleaner under the rubber band, as for the axon.

Bend pipe cleaner 2.5cm from one end, point both ends away from the axon.

Add more dendrites in the the same way as the first. Repeat until you have 5 or more dendrites. Push the pipe cleaners apart so there is space between the dendrites.

Weaving and winding to cover the cell body

Tuck the end of your yarn into the rubber band near the axon. Start winding around the cell body, wind the wool over the top of the bent pipe cleaners (dendrites) until you are about 2cm from the fat end. ▶

Hold the cell body firmly in one hand, pass all the way around the top of the first dendrite, then continue winding in the same direction, repeating the last step for each dendrite you come to until you are 1cm from the edge of the body cell.

Wrap the yarn around the top of the next dendrite, then criss-cross over the fat uncovered section between dendrites. Repeat until covered. From time to time loop the yarn back across the cell body and around the axon to keep the yarn firmly in place.

Covering dendrites
Cover the main dendrites and add branches as for the axon (above). Instead of making rounded ends, taper the branches. If you want to, vary the width of branches by adding a few strands of thin highlight yarn or unravelling the ends of thick yarn to make smaller 'twigs'. Tie off a few centimetres from the end, leaving single strands of yarn free to form even smaller branches – dendrite branches that are thinner than the main dendrite. Add as many as you like – have fun.

Congratulations – you have created a pyramid neuron.

No knit neuron (top) Pyramid crochet neuron (bottom)

No-knit Neurons & Astrocytes by Pat Pillai © (Very Easy)

While delivering workshops, our patterns were constantly evolving. The new versions are suitable for those with limited fine motor skills, or limited time. We've also introduced the astrocyte (see below). We hope you enjoy the new very easy designs, and thank the participants whose ideas helped in the fine tuning.

Materials

- 3-4 each of pipe-cleaners and /or drink straws
- Large button *
- A strip of fabric or bubble wrap 2.5cm x 30cm
- Small round stickers
- A small amount of yarn (chunky yarn recommended for cell bodies, smooth for dendrites)

Method

Insert a pipe-cleaner in each drink straw *
Cross the straws to form a star, secure the centre with staples or sticky tape. Wrap fabric around the centre of the star, crossing between the spokes to form the cell body.
Cover fabric with yarn and continue wrapping down each protruding half straw (dendrite or axon). Secure the yarn by tying to the pipe-cleaner, bend the end and bind to cover sharp edges, break off yarn.
Tie another piece of yarn to the cell body near the base of the next dendrite, wind once around the body then return to the base of the dendrite and start wrapping. To make an axon, force one of the straws in the opposing direction. To make an astrocyte*, follow the same pattern but do not add an axon, add a large nucleus in the centre. Finish as desired. See hints pg 4.

* For pre-schoolers, prepare stars from drink straws only, fray ends for dendrites. Ask participants to wrap the cell body and add a sticker for the nucleus, do not use buttons.

Astrocytes (glia)

"Astrocytes get their name from their star-like shape. We used to think they were no more than 'brain glue'.

We now know they act as both the policemen and the garbos of the brain. Astrocytes regulate the chemical environment, digest dead bits of neuron, recycle neurotransmitters, and anchor neurons to their blood supply."

Dr Sarah McKay

Knitted Neuron from Simple Square by Pat Pillai ©

Materials

- Small amount of 8ply yarn, bubble wrap, and 4 pipe cleaners
- Size 8 (3.75mm) knitting needles, double pointed if using i-cord
- 4.5mm crochet hook (optional) for axon & dendrites
- Stickers or buttons for nucleus

Method

Cast on 15-20 stitches, knit to end, repeat until the work looks square.

Thread a pipe cleaner around the edge and gather in until the square forms a pouch.

Place stuffing in the centre and gather in until the pouch closes.

Twist one end of the pipe cleaner around the base of the other to make an axon.

Insert extra pipe cleaners through the body, with lengths protruding on each side. (two dendrites) Add as many as you like.

Wrap axons and dendrites with yarn as for the no-knit neuron pattern, or stitch a strip of knitting or crochet over the pipe cleaner. Alternately, thread the pipe cleaners through an i-cord tube* or French knitting.* Add a nucleus.

Knitted strip: Cast on 4 stitches, knit in plain or stocking stitch or i-cord until desired length.
*Crochet strip: Make 4 chain, turn, double crochet into each chain, 1 chain, turn, repeat until desired length.
*i-cord tube and French knitting: Instructions not supplied, can be found via the internet.

Installation Ideas

A little goes a long way

"Installations that used less than 30 neurons and took less than an hour to install were effective in engaging the audience."

Display using transparent magazine holders, available light and battery operated LEDs at the 11th World Congress for Brain Mapping, Sydney 2014.
Image Credit: Design D. Molloy, Photography AusBiotech, Art work P Pillai, R Pearce, & students of St Ursula's College, Sydney.

Library display with related books.
Image courtesy of Caringbah Library

Spontaneous neural 'yarn bombing' at the MCA Festival of Vivid Ideas 2014.
Image courtesy of J Randles.

For more information, visit **http://www.scienceweek.net.au/neural-knitworks/**

Giant Brain Installation

at Hazelhurst Regional Gallery 2014

The Neural Knitworks team acknowledges the many donors and collaborators whose combined efforts produced the giant brain. Exhibition enquiries neuralknitworks@gmail.com

Sponsors and partners inside the brain
Image courtesy of Hazelhurst Regional Gallery & Arts Centre. Photography Silversalt.

Knitted cross-section of the brain
Image courtesy of Hazelhurst Regional Gallery & Arts Centre. Photography Silversalt.

Textile neurons seen here inside the giant brain at Hazelhurst were exhibited the following year as wall hangings at QUT Library, Brisbane for National Science Week and as a temporary exhibition in the WEHI, Melbourne for TedMed Live.
Image courtesy of Hazelhurst Regional Gallery & Arts Centre. Photography Silversalt.

For more information, visit **http://www.scienceweek.net.au/neural-knitworks/**

neural knitworks
craft a healthy brain