What’s inside a Cell?

- **Plasma Membrane**
  - The plasma membrane is a barrier, separating the inside of the cell from the outside world.
  - It keeps all of the organelles inside the cell, and keeps unwanted things, like bacteria and viruses outside the cell.
  - It is mostly made from fats and cholesterol, which is why we need to eat at least some fat in our diets to survive!
  - Sometimes the cell wants to move things into or out of the cell, for example getting rid of toxins, or bringing in nutrients. The plasma membrane has proteins that act like gates, letting things in and out of the cell.
  - You can also send signals across the plasma membrane. For example when our bodies release hormones, proteins in the plasma membrane can sense them and send a signal to the cell, letting it know that it needs to do something different.
Instructions Part 2: Plasma Membrane

QUICK GUIDE

Rnd 1: Starting in the top left corner, *dc 2 in corner st, turn anticlockwise, dc 2 in corner st, dc 1 in each stitch until you reach the next corner*, repeat from * to *, join round with ss

Rnd 2: ch 4 (counts as tr 1 and ch 1), skip st, tr 1, (ch 1, skip st, tr 1) x30, join round with ss, finish off

1. MAKE A SLIP KNOT AND INSERT IN THE CORNER STITCH

Working in a new colour of yarn, make a slip knot on your hook (as in Cytoplasm Step 1). Then insert your hook in the final stitch of the final row (top left of the fabric, green)

2. MAKE TWO DOUBLE CROCHETS IN THE CORNER STITCH (dc 2 in same stitch)

Make a double crochet into this corner stitch (as in Cytoplasm Step 5). Then make a second double crochet in the same stitch

3. MAKE TWO DOUBLE CROCHETS IN THE NEXT STITCH (dc 2 in same stitch)

Working anticlockwise, turn the corner and make two double crochets in the first stitch

4. MAKE THIRTY EIGHT DOUBLE CROCHETS (dc 38)

Running along the edge of the fabric, make one double crochet in the next thirty-eight stitches

5. MAKE TWO DOUBLE CROCHETS IN THE FINAL STITCH (dc 2 in same stitch)

Repeat Step 2

6. MAKE TWO DOUBLE CROCHETS IN THE NEXT STITCH (dc 2 in same stitch)

Repeat Step 3

7. MAKE EIGHTEEN DOUBLE CROCHETS (dc 18)

Running along the edge of the fabric, make one double crochet in the next eighteen stitches

8. REPEAT STEPS 2-17 ((dc 2 in same stitch) x2, dc 38, (dc 2 in same stitch) x2, dc 18)

9. JOIN ROUND WITH A SLIP STITCH (ss)

Place your hook through the first stitch (green), yarn over, and pull yarn through all three loops on the hook

10. MAKE FOUR CHAIN STITCHES (ch 4)

Chain stitch four (as in Cytoplasm Step 3). This counts as the first treble crochet and one chain stitch

Repeat Steps 2-7. This will bring you back round to your starting position
11. **SKIP THE SECOND STITCH AND MAKE ONE TREBLE CROCHET IN THIRD STITCH** (tr 1)

Yarn over, skip the second stitch, then insert your hook into the third stitch (green). You will now have four loops on your hook.

Yarn over again and pull through the first two loops (green). You will now have three loops on your hook.

Yarn over again and pull through the next two loops (green). You will now have two loops on your hook.

Yarn over again and pull through the last two loops (green). You will now have one loop on your hook.

12. **MAKE ONE CHAIN STITCH** (ch 1)

Make one chain stitch.

13. **SKIP ONE STITCH THEN MAKE ONE TREBLE CROCHET** (tr 1)

Skip one stitch and make a treble crochet (as in Step 11) in the stitch two along from the previous stitch (green).

Repeat one chain stitch, one treble crochet pattern running all the way round the edge of the fabric. Make sure to work your treble crochets in every other stitch.

14. **REPEAT STEPS 12-13 SIXTY ONE TIMES** ((ch 1, tr 1) x 61)

15. **MAKE ONE CHAIN STITCH** (ch 1)

After the final treble crochet, make one more chain stitch.

16. **JOIN ROUND WITH A SLIP STITCH** (ss)

Make a slip stitch in the third of the three chain stitches made at the beginning of the round (green).

17. **FINISH OFF**

Finish off (as in Cytoplasm, Step 9).

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**Congratulations! You have completed your plasma membrane!**

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