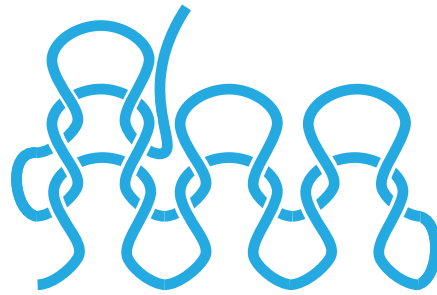


Brief Introduction to Knitting

Knitting is Everywhere



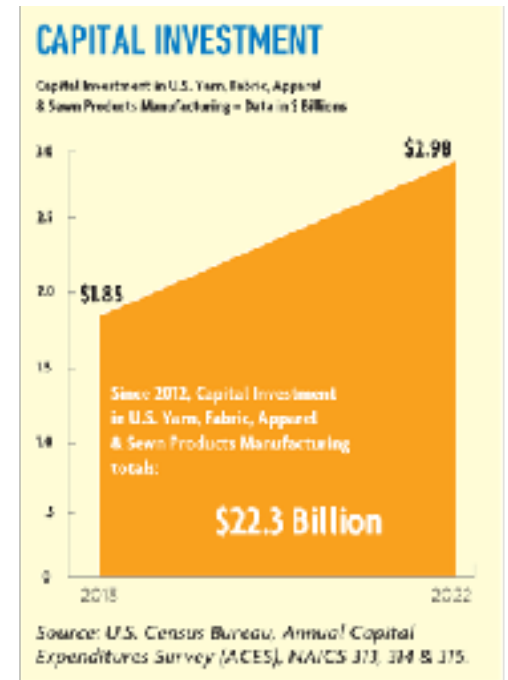
In the past (1300 AD)



Interlocking loops of yarn



In the present



In the future

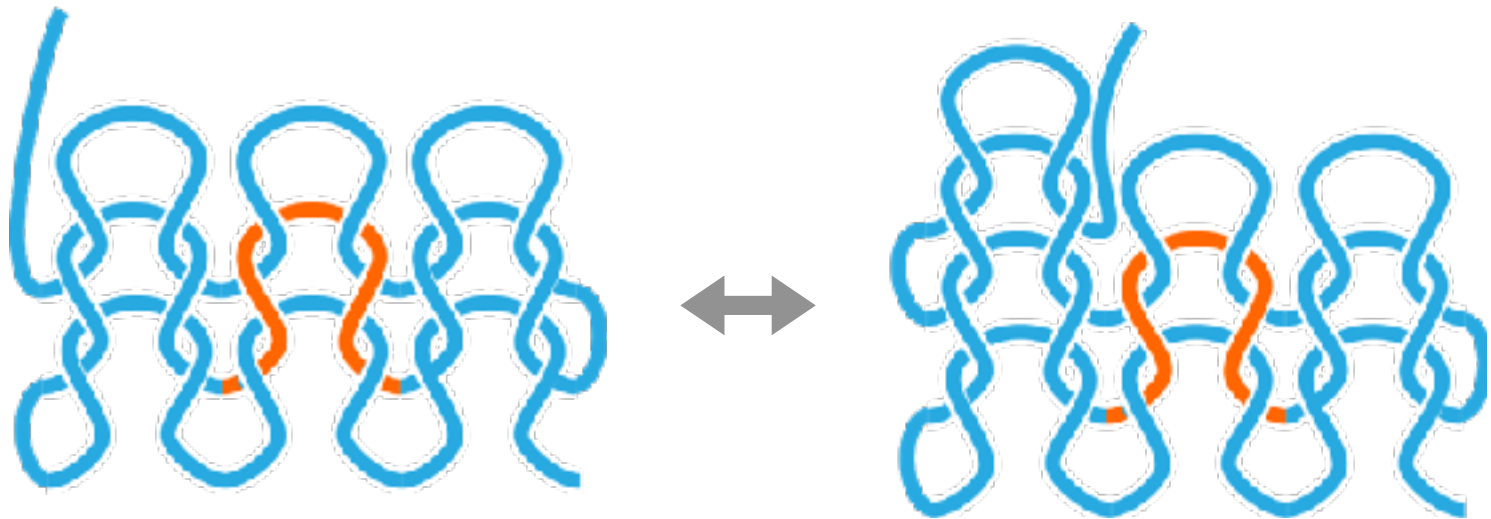
Knitting is Everywhere



What is Knitting?

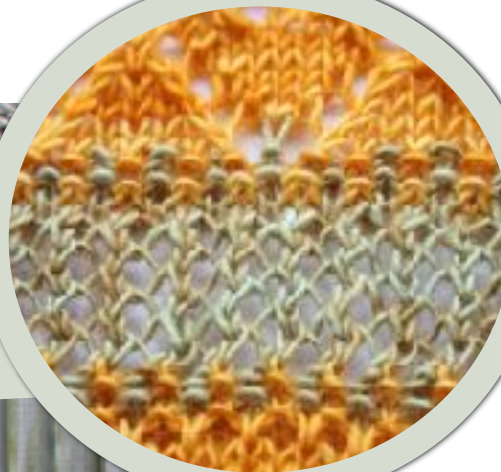


Yarn can be bent to make a loop.



Loops can be pulled through loops to secure previous loops

Basic Unit in Knitting



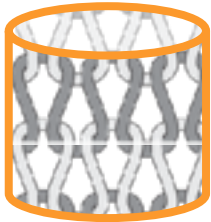
Stitch



Variations in Knitting (Structures)



Sheets



Tubes



Textures

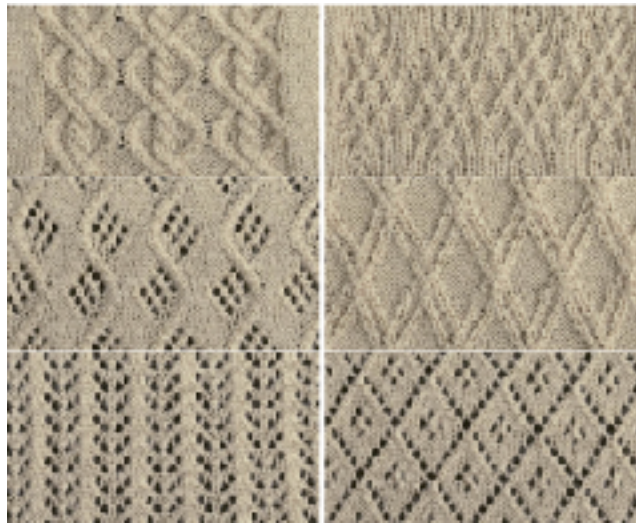


Shaping



Composition

Knitting is Super Flexible



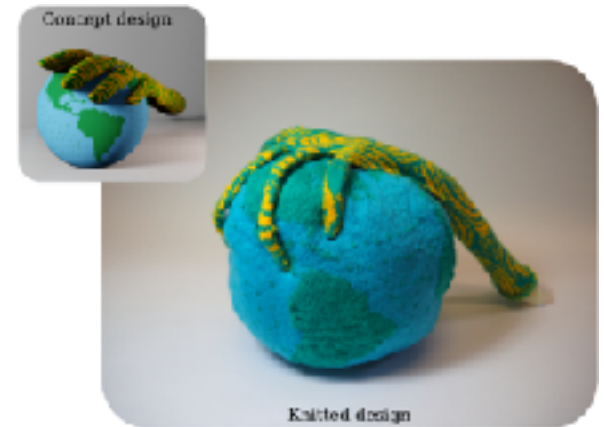
Hoffman, M., et al. UIST (2019).

Cool textures!



Narayan, V., et al. ACM Trans. Graph. (2018).

Cool shapes!



Nader, G., et al. ACM Trans. Graph. (2021).

Cool colors!

How to knit?



Making Knitting (by hand)

Active Loops: would unravel without needles holding them



Incoming yarn: pulled through active loops to make new loops

In progress fabric: stable loops that won't unravel

Knitting in Action (video linked in Ed Resources)



HOW TO KNIT

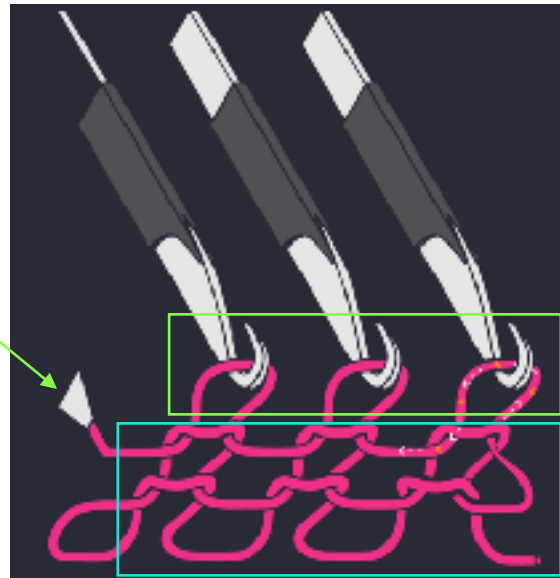
FOR TOTAL BEGINNERS

THE CONTINENTAL WAY

What about machines?

Making Knitting (with machines)

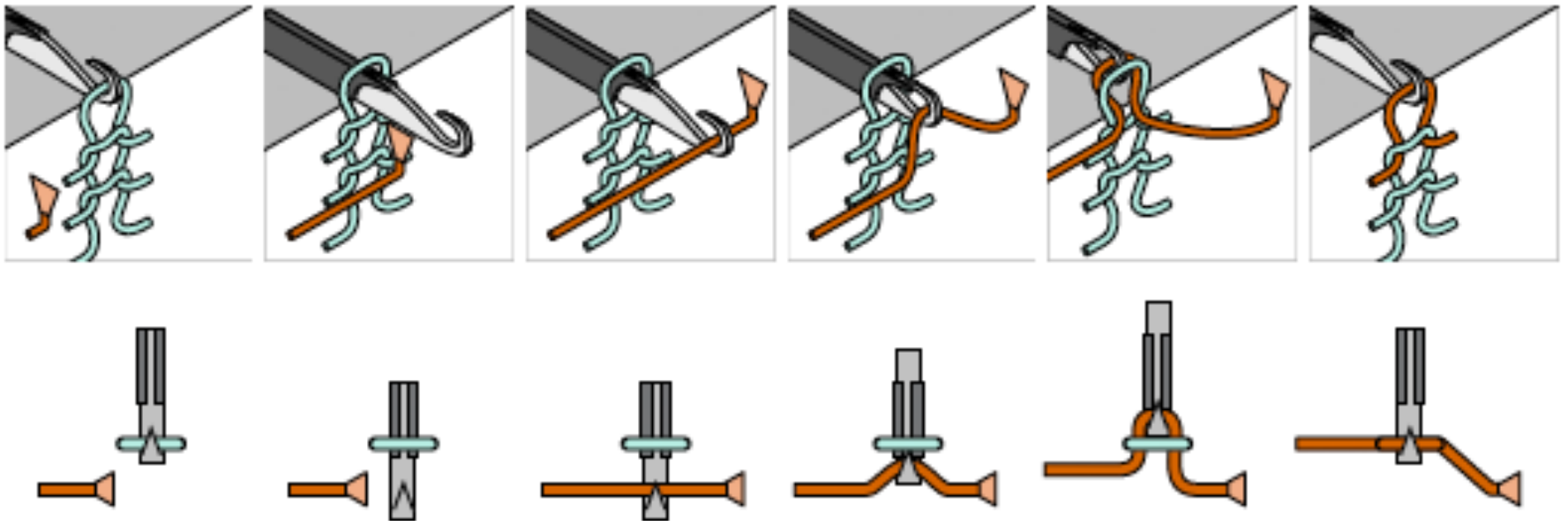
**Incoming yarn:
delivered by a
carrier that
delivers yarn
from above**



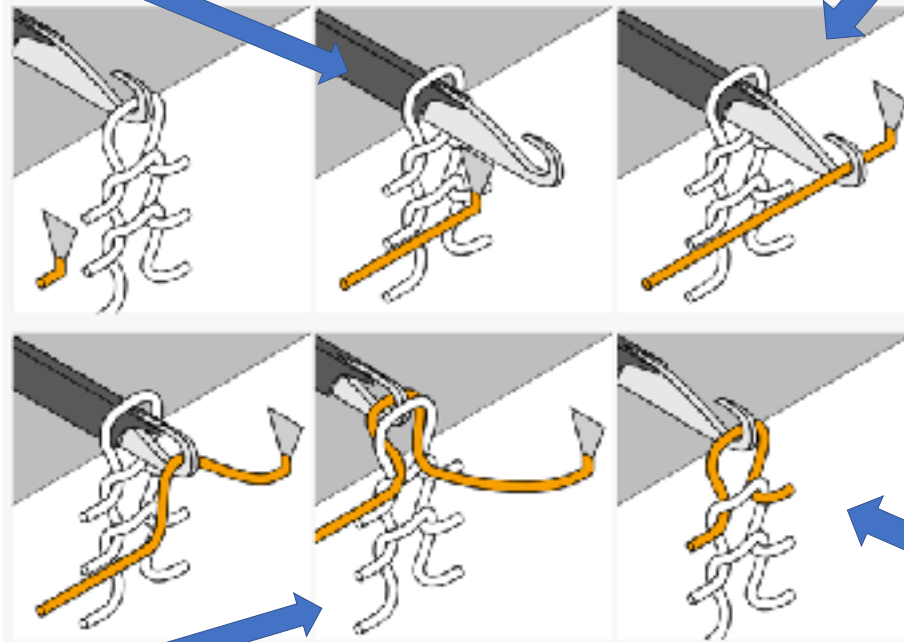
**Active loops: each
one is held by a hook
shaped needle**

**In progress fabric: old
loops that were already
knit through. Gone
forever!**

The Knit Operation



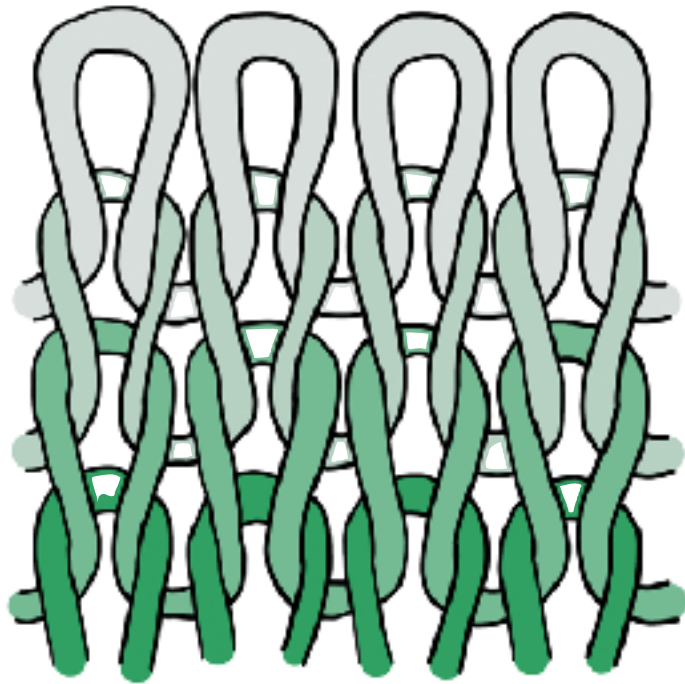
Mapping Hand Knit to Machine Knit



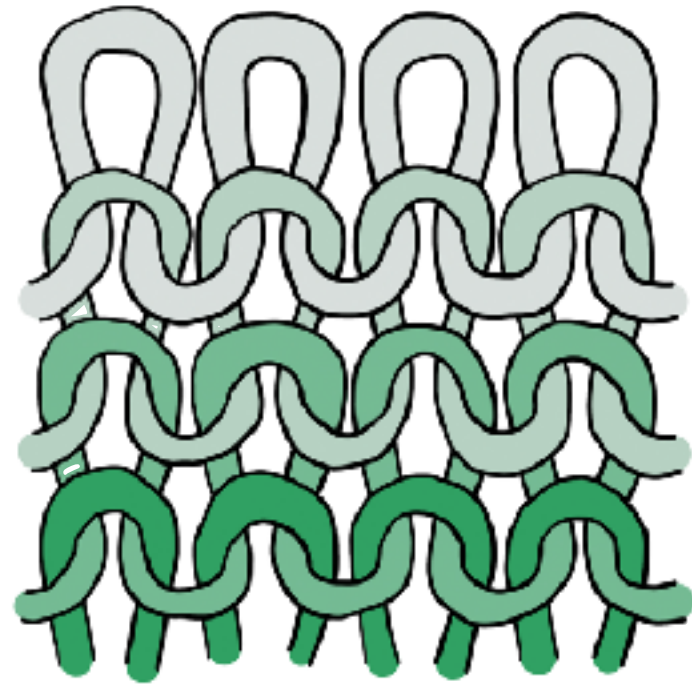
Knit Stitch vs Purl Stitch



Knit Stitch vs Purl Stitch



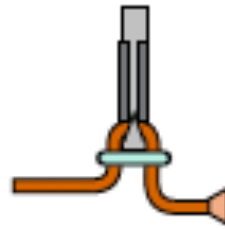
Knit



Purl

Knit Stitch vs Purl Stitch on the Machine

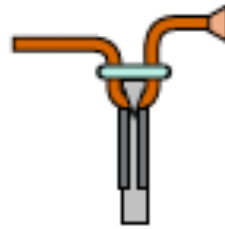
Back Bed



Purl

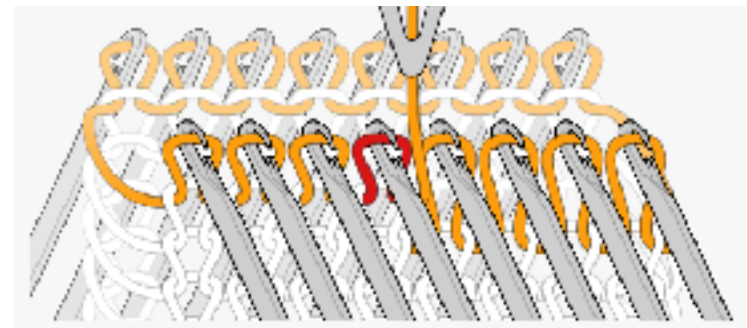
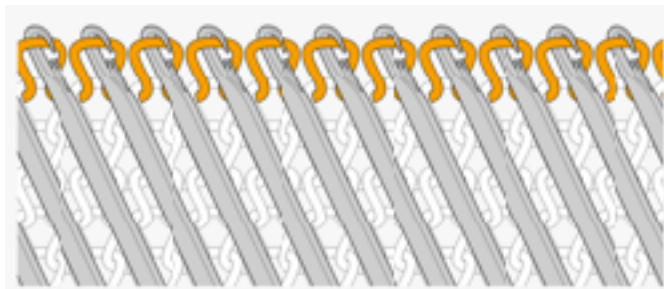
(Yarn carrier goes between the two beds)

Front Bed



Knit

Flat knitting vs In the round



HW2: Random Barcode

- Random 0s and 1s mapping to different patterns
- Fabrication involved!
- Read instructions carefully in the notebook and Python file. Check Ed Discussion for any updates.

Example Artifacts

What you can expect from each pattern variation is as follows:

