

# Home Economics

## Textiles, Clothing and Fashion

⌘ Topic: Fibre Classification

⌘ Group Level: Form Four

⌘ Instructions:

Look at the Fibre Classification PowerPoint.

Review what you have learned by completing the worksheet.

Use the answer key to assess your performance.

# Objectives

At the end of this lesson students should be able to:

- ❖ Classify fibres based on the source of origin.
- ❖ Classify fibres according to length.
- ❖ Explain the difference between natural and man-made fibres.
- ❖ Differentiate between staple and filament fibres.

# Fibre Classification

Fibres are classified based on :

Sources of the fibre

**or**

According to length of the fibre

Fibres are obtained from two major sources

## Sources of Fibres

```
graph TD; A[Sources of Fibres] --> B[Natural Fibres (Nature)]; A --> C[Man-Made Fibres (Man)];
```

Natural Fibres  
(Nature)

Man-Made Fibres  
(Man)

# Natural fibres

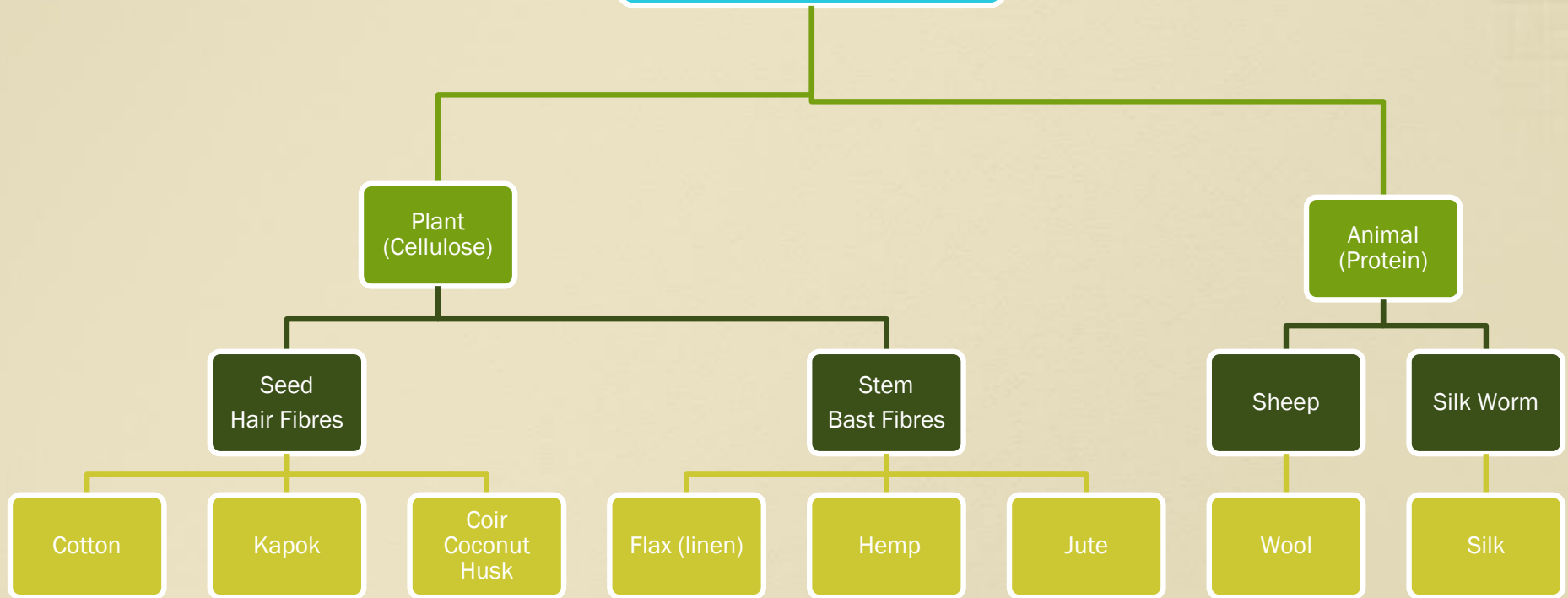
Natural fibre sources are broken down into two groups:

(1) Plant or vegetable source and referred to as cellulose based and further classified by stem, leaf or seed.

# Natural Fibres cont'd

(2) Animal source also known as protein-based fibers. They are harvested from an animal or removed from a cocoon or web.

# Natural Fibres



# Fibres in Nature

## Cotton



Source: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pxfuel.com%2Fen%2Ffree-photo-xdkzg&psig=AOvVaw1g1-QSnCpDMDnBNczPxEt7&ust=1588644895077000&source=images&cd=vfe&ved=2ahUKEwjGr7fGkZnpAhXKWDABHe-VCZcQr4kDegQIARBx> FREE FOR COMMERCIAL USE

# Fibres in Nature

Coir from the Coconut Husk



“ [A Wall made of Coconut](#)”, by [Brass T. at english wikipedia](#) under [GNU Free Documentation](#) license

# Fibres in Nature

## Flax Plant (Linen)



Source: [https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pxfuel.com%2Fen%2Ffree-photo-qfyga&psig=AOvVaw0WJhKwTxbmXC0HnM\\_KZapC&ust=1588647850627000&source=images&cd=vfe&ved=2ahUKEwi76d\\_HnJnpAhVtQTABHd\\_IC1kQr4kDegUIARCeAg](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pxfuel.com%2Fen%2Ffree-photo-qfyga&psig=AOvVaw0WJhKwTxbmXC0HnM_KZapC&ust=1588647850627000&source=images&cd=vfe&ved=2ahUKEwi76d_HnJnpAhVtQTABHd_IC1kQr4kDegUIARCeAg) FREE FOR COMMERCIAL USE

# Fibres in Nature

## Jute



“[Jute Field](#)” by [Manners M](#), licensed under [CC BY 2.0](#)

# Fibres in Nature

## Wool from Sheep



Source: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fpixabay.com%2Fphotos%2Fsheep-flock-of-sheep-animals-wool-2292802%2F&psig=AOvVaw1UaVlbAVIPCKOg1OAOWlyl&ust=1588650169546000&source=images&cd=vfe&ved=2ahUKEwjL-ZpZnpAhVSWTABHdBdDCkQr4kDegUIARCIAg> FREE FOR COMMERCIAL USE

# Fibres in Nature

## Silk from the Silkworm



Source: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pxfuel.com%2Fen%2Ffree-photo-iugmo&psig=AOvVaw1CoRNima4M0hwBObxL9hyY&ust=1588650440309000&source=images&cd=vfe&ved=2ahUKEwiauc2appnpAhWOQzABHb5eAdoQr4kDegUIARChAg> FREE FOR COMMERCIAL USE

# Man-made Fibres

Manmade fibres are classified into two groups:

- (1) Regenerated from plant fibres, example viscose rayon, made from wood bark;
- (2) Synthetic from various chemicals, example polyester and polyamide–(nylon)

# Man-Made Fibres

```
graph TD; A[Man-Made Fibres] --> B[Regenerated]; A --> C[Synthetic]; B --> D[Rayon]; C --> E[Nylon]; C --> F[Polyester];
```

Regenerated

Rayon

Synthetic

Nylon

Polyester

# Regenerated Fibre

Rayon



Source:

[https://www.google.com/url?sa=i&url=https%3A%2F%2Fcommons.wikimedia.org%2Fwiki%2FFile%3ARayon\\_closeup\\_3.jpg&psig=AOvVaw3xqon0uess-Xexca2VHr98&ust=1588651213118000&source=images&cd=vfe&ved=2ahUKEwid\\_Y2LqZnpAhVDQDABHbHQDnkQr4kDegUIARCMAg](https://www.google.com/url?sa=i&url=https%3A%2F%2Fcommons.wikimedia.org%2Fwiki%2FFile%3ARayon_closeup_3.jpg&psig=AOvVaw3xqon0uess-Xexca2VHr98&ust=1588651213118000&source=images&cd=vfe&ved=2ahUKEwid_Y2LqZnpAhVDQDABHbHQDnkQr4kDegUIARCMAg) PUBLIC DOMAIN

# Synthetic Fibres

## Polyester



<http://pimg.tradeindia.com/00118089/b/0/Toys-stuffing-fiber.jpg>

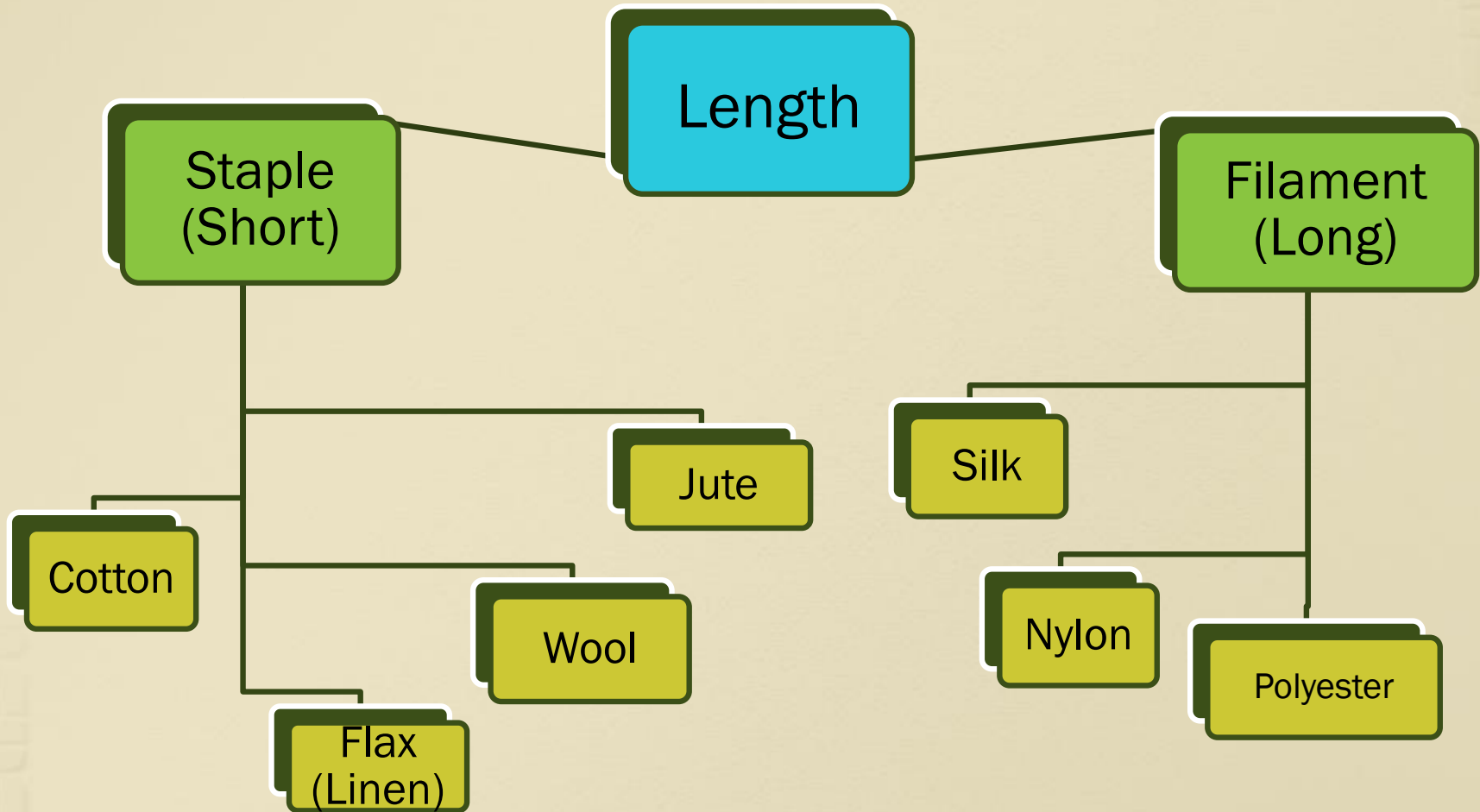
# Synthetic Fibres

Nylon



<http://images.recyclechina.com/img/products/2012/8/16/13450903158841846.jpg>

# Classifying Fibres by Length



# Classifying Fibres by Length

- ⌘ Staple (Short) – All natural fibers except silk  
e.g. cotton, flax, kapok, coir, jute, hemp, wool
- ⌘ Filament (Long) – Silk and all man-made  
fibres e.g. silk, rayon, polyester, nylon
- ⌘ Look at some examples on the following  
slides

# Staple Fibres (short fibres)

Cotton



Flax (Linen)



Cotton:

[https://www.google.com/url?sa=i&url=http%3A%2F%2Fwww.publicdomainfiles.com%2Fshow\\_file.php%3Fid%3D13489104016644&psig=AOvVaw1q\\_AUrxPkmwwt1YIOBLdVy&ust=1588653930052000&source=images&cd=vfe&ved=2ahUKEwjGv9Kas5npAhVEFFMKHeVtCPOQr4kDegUIARDsAQ](https://www.google.com/url?sa=i&url=http%3A%2F%2Fwww.publicdomainfiles.com%2Fshow_file.php%3Fid%3D13489104016644&psig=AOvVaw1q_AUrxPkmwwt1YIOBLdVy&ust=1588653930052000&source=images&cd=vfe&ved=2ahUKEwjGv9Kas5npAhVEFFMKHeVtCPOQr4kDegUIARDsAQ) PUBLIC DOMAIN - FREE OF KNOWN COPYRIGHT RESTRICTIONS

Flax: [http://weavolution.com/sites/default/files/2816/Linenflax\(1\).jpg](http://weavolution.com/sites/default/files/2816/Linenflax(1).jpg)

# Staple Fibres (short fibres)

Jute



Wool



Jute: <http://www.millerwastemills.com/wp-content/uploads/jute-fibers.jpg>

Wool:

<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pexels.com%2Fphoto%2F1888152%2F&psig=AOvVaw3cNo1PkvlCkpwbTBfiggQv&ust=1588656129107000&source=images&cd=vfe&ved=2ahUKEwjwk56zu5npAhVOTDABHd2AAIcQr4kDegUIARCnAg> FREE TO USE

# Filament Fibres ( long fibres)

Polyester



Silk



Polyester: <http://img.diytrade.com/cdimg/431345/2241446/0/1148347470/polyester fiber - White Polyester Tow.jpg>

Silk: [http://www.wildfibres.co.uk/assets/images/autogen/a\\_silk0234\\_7.jpg](http://www.wildfibres.co.uk/assets/images/autogen/a_silk0234_7.jpg)

# Filament Fibres ( long fibres)

Rayon



Nylon



Rayon: <https://www.unicornfibres.com.au/product/white-viscose-roving/> FREE TO USE

Nylon <http://2.imimg.com/data2/DC/LN/MY-3689643/nylon-fibre-for-fishnet-250x250.jpg>

*Lets Recap!!!*

**Complete the worksheet and check  
your answers.**