

## Leather From a Lab

### Vocabulary

**Cell (n)** – an extremely small part of animal or plant

**Tan the hide (phrase)** – to turn animal skin into leather

**Layer (n)** – to arrange one on top of another

**Spread out (v)** – stretch in a line

**Dye (v)** – to change color of something using special liquid

**Thick sheet**



**Thin sheet**



1) Look at the diagram and order the sentences:



|   |                                       |   |                                                       |
|---|---------------------------------------|---|-------------------------------------------------------|
| 1 | Scientists grow the cells in a lab.   | 2 | Scientists can tan the hide.                          |
| 3 | Thicker sheets are formed.            | 4 | Scientists spread the cells out and form thin sheets. |
| 5 | Scientists take cells from an animal. | 6 | The thin sheets are layered.                          |
| 7 | The leather can be dyed and finished. | 8 | The leather is made into different product.           |

## 2. Vocabulary: Choose the correct definitions:

|                        |  |                                                           |
|------------------------|--|-----------------------------------------------------------|
| <b>Transplant (n)</b>  |  | a strong need of something                                |
| <b>Evolution (n)</b>   |  | an operation in which a body part is replaced             |
| <b>Range (n)</b>       |  | make (something) on a large scale using machinery.        |
| <b>Manufacture (v)</b> |  | a number of different things                              |
| <b>Come at a price</b> |  | a process of natural change over time                     |
| <b>Cause (v)</b>       |  | able to do something well without wasting time and energy |
| <b>Demand (n)</b>      |  | be on the side of                                         |
| <b>Support (v)</b>     |  | make something happen.                                    |
| <b>Efficient (adj)</b> |  | to have disadvantages.                                    |

## 3. Listen to the audio and put correct words in correct forms:

Leather is a hugely popular material for a \_\_\_\_\_ of products, but this popularity \_\_\_\_\_. The global leather industry kills over a billion animals every year. This has \_\_\_\_\_ many to ask the question: is it possible to meet the global \_\_\_\_\_ for leather but not to do any harm to animals? A process called biofabrication may be the answer.

Biofabrication is not new; it is already commonly used in medicine. Scientists have applied the technique to grow body parts like ear, skin, and bones for \_\_\_\_\_. But it can also be used to make other products, such as leather. Scientists will be able to make biofabricated leather with whatever qualities they want, such as extra softness, greater strength, or even different colors and patterns.

But how exactly does biofabrication work? To grow leather, scientists begin by taking some **cells** from an animal, not hurting the animal in any way. They then isolate the cells and grow them in a lab. This process takes millions of cells and expands them into billions. Next, the scientists take the cells and **spread** them **out** to form **thin sheets**. These thin sheets are then **layered** to combine into **thicker sheets**. Anyone can then **dye** and finish the leather and design it in any way they like – into bags, wallets or shoes.

Andras Forgacs \_\_\_\_\_ biofabrication. He says it may even be a "natural \_\_\_\_\_ of \_\_\_\_\_ for mankind." We will be able to make the products we need in an \_\_\_\_\_, responsible and creative way. And biofabrication is not just about leather – it's possible the technique could also be used to grow meat. While this may sound crazy, Forgacs certainly doesn't think so. 'What's crazy', he says, 'is what we do today.'

**4. Choose T for true, F for false and NG for not given:**

|   |                                                    |          |          |           |
|---|----------------------------------------------------|----------|----------|-----------|
| 1 | Many animals are killed to make leather            | <b>T</b> | <b>F</b> | <b>NG</b> |
| 2 | Demand for leather is increasing                   | <b>T</b> | <b>F</b> | <b>NG</b> |
| 3 | Biofabrication is already used in medicine         | <b>T</b> | <b>F</b> | <b>NG</b> |
| 4 | Animals feel pain when scientists take their cells | <b>T</b> | <b>F</b> | <b>NG</b> |
| 5 | Biofabrication could be used to grow meat          | <b>T</b> | <b>F</b> | <b>NG</b> |