

# Production

## A. Products

A product can be:

- something natural.
- something made to be sold.
- a service.

Produce refers to agricultural products such as crops or fruit.

For example, you can buy fresh produce at a farmers' market.

Something that is made is produced or manufactured.

A country or company that produces something is a producer of it.

A company that manufactures something is a maker or manufacturer of manufactured goods.

## B. Mass production

'I'm Steve and I'm head of car production at a manufacturing plant. 'Plant' sounds more modern than factory or works. On the assembly line we mass-produce cars. The plant is highly automated: we use a lot of machinery. These machines are expensive to buy but very cost-effective – we don't have to pay them wages! We use industrial robots. These robots are part of the CAD/CAM system of computer-assisted design and manufacturing.'

BrE: labour-intensive AmE: labor-intensive
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"My name's Paul. I have a little workshop where I produce furniture ordered by individual customers. We don't use machinery: the furniture is hand-made. Producing furniture like this is a craft industry. It is very labour intensive: it takes a lot of work to produce each piece. Many people dislike the furniture that big companies churn out in large numbers on their large production lines, so we have a lot of customers."

## C. The production process

Manufacturing takes place in a plant. The process can be capital-intensive (requiring a lot of finance) or labour-intensive (demanding manpower). If the operation is efficient at transforming inputs (materials, labour and information) into finished goods, then there is a high level of productivity. The manufacturing process consists of many stages:

1. Planning: this involves trying to bring together customer demand with operational issues of volume, timing, and the purchase of materials. A bill of materials is produced, this is compared with the existing inventory, and any necessary purchases are made.
2. Sequencing: a supervisor decides which workstation (machine or employee) will carry out which tasks in which order.
3. Scheduling: the supervisor decides when particular tasks should start and finish.
4. Dispatching: the supervisor authorizes tasks to begin (giving detailed instructions).
5. Loading: materials or parts are introduced to an operation so that it can begin. A robot loads an assembly line with a new component; an operator loads a machine with raw materials.
6. Monitoring: this involves checking progress, eliminating bottlenecks, and identifying and solving problems.



## 1. Innovation and invention

Verb	Noun: process (uncountable)	Noun: thing (countable)	Noun: person
<b>design:</b> to make plans or drawings for how something is to be made	design	a design	a designer
<b>develop:</b> to make a new idea successful, for example by making or improving a product	development	a development	a developer
<b>innovate:</b> to think of new ideas, methods, products, etc.	innovation	an innovation	an innovator
<b>invent:</b> to design and make something for the first time	invention	an invention	an inventor
—	<b>technology:</b> the practical or industrial use of scientific discoveries	a technology	a technologist

### Practice.

- 1 Complete this table with words from A opposite.

Verb	Noun: person/organization	Noun: process	Noun: thing
make	maker	×	×
		manufacturing	
produce: non-food		production	
produce: food		production	

- 2 Rearrange these lines to make a text containing words from B opposite.

- 1 work. Of course, we still have a lot of assembly
- 2 plant producing TVs in Singapore. We have two production
- 3 My name's George Chen, and I'm director of a manufacturing
- 4 lines working 24 hours a day. We use CAD
- 5 line workers, so it's still quite labour-
- 6 intensive. But with the help of computer-
- 7 CAM, and robots do some assembly
- 8 assisted design and automation, productivity is increasing.

- 3 Give the infinitive of the underlined verbs. Give the past simple form of the verbs written in bold.

The production process of a potato supplier:

Well, the potatoes are grown on our farms and brought to the production plant here. First of all we **peel** them, and then we **wash** them. Next we **sort** them, and **grade** them according to their size and weight. The acceptable potatoes are then steamed, chopped and freeze-dried. After that the granules go to the canning department: the cans are filled and vacuum-sealed. We next send the cans to be labelled and packaged, then **dispatch** them to distribution centres.

- 4 Match the different stages (A-F) in the production process with their descriptions (1-6).

1- Introducing materials to an operation so it can begin.

2- Authorizing a task to begin.

3- Bringing together customer demand with operational issues.

4- Checking process and solving problems.

5- Deciding when tasks should start and finish.

6- Deciding which workstation will do which task in which order.

A. planning

B. sequencing

C. scheduling

D. dispatching

E. loading

F. monitoring