

PROCESS AND CYCLE DESCRIPTION

STRUCTURE

- **introduction:** explain what the diagram shows; if possible, make an overall comment about the end result or the process itself
- **main part:** describe each stage in turn; if the process is cyclical, identify a logical place to start your description

CONTENTS:

- you have to describe the main features of the data (i. e. stages and whatever the diagram explains about the processes)
- BUT you do not need to add your own information; you only report what the diagram shows
- you will probably not need (or be able) to make any comparisons

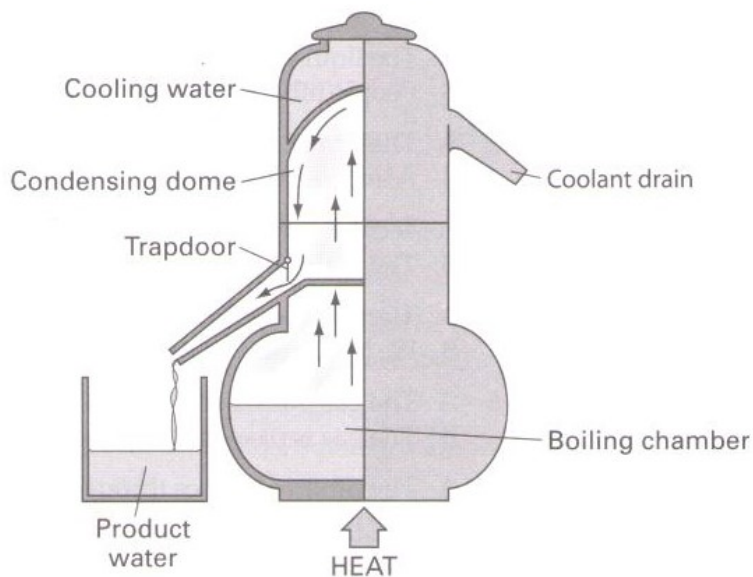
LANGUAGE

Steps and sequencing		
The first The second The next A further The final	stage step	is ...
First Next Then After that		
... and the cycle/process begins again.		

Routes					
From here it	passes travels moves	(along (through (via	a pipe)	to	a chamber
From here there are two possible routes ...					
If the sample is approved, then it moves on to ... If the sample fails the test, then it ...					

Saying what happens at each stage				
... into ... to	a	container chamber mixing chamber	where (things happen) in which (things happen) during which (things happen)	
			which (does things)	
The next stage is	finishing cleaning	which	involves includes	washing, brushing and polishing. three main elements:

Desalination process

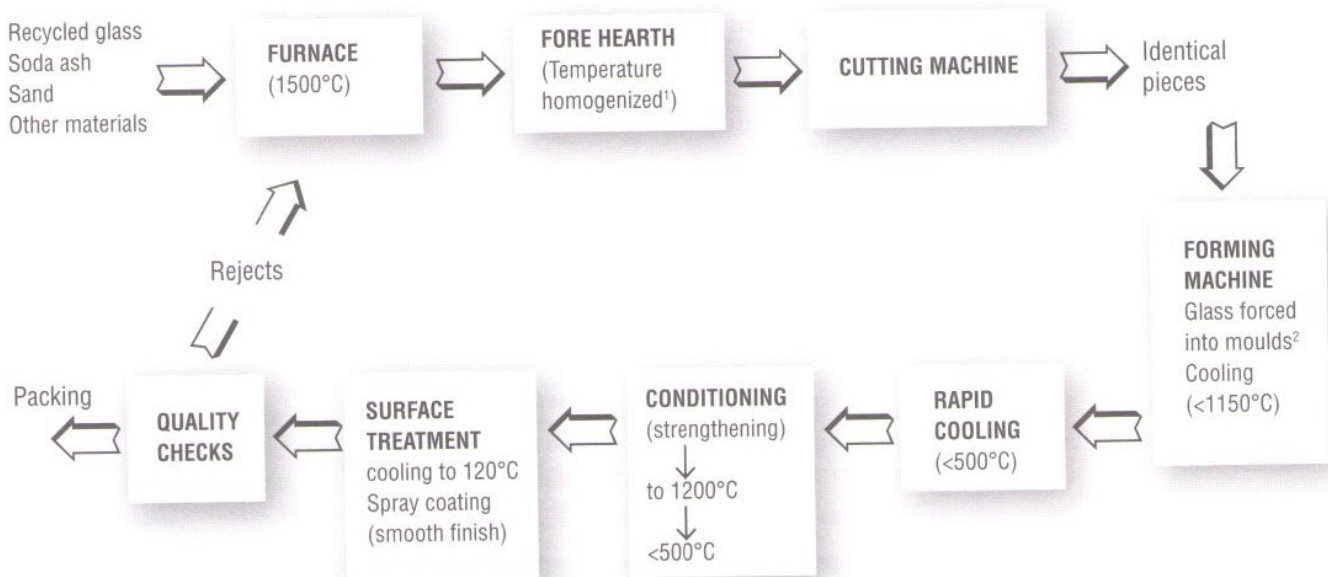


Note: A trapdoor is a small door. In this case it allows desalinated water to pass through.

(1) salt water *is heated* in a boiling chamber. From (2) it passes
 (3) a membrane (4) the condensing dome, (5) it *is cooled*.
 (6) it passes through a trapdoor and (7) the 'product water' container.

In (8) the cooling water *is provided* by a separate system. When it *has been heated* by the water in the condensing dome, it flows away (9) a coolant drain.

Glass drinks bottle recycling process



¹ Homogenized means 'made the same'.

² A mould is 'a shaped container into which you pour a liquid that then becomes solid in the shape of the container'. (*Macmillan English Dictionary*)

ACTIVE OR PASSIVE?

- we mostly use active verbs when the focus is on people and their actions
- we mostly use passive verbs when the focus is on results, not what people do
- sometimes both forms are acceptable

Examples:

A conference brochure: Lunch is served at 1:00 p.m.

A newspaper: The government published its plans for education today.

Task 1.

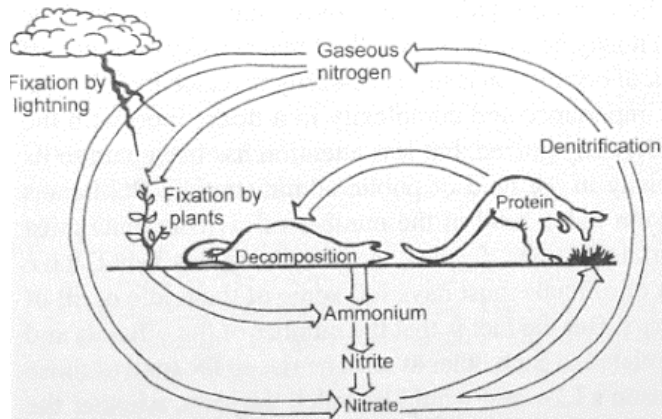
Decide which version of each sentence is better. Sometimes both forms (active or passive) are acceptable.

- 1 A The liquids are mixed in a mixing chamber.
B People mix the liquids in a mixing chamber.
- 2 A The director chooses his team.
B A team is chosen.
- 3 A Technicians heat the water.
B The water is heated.
- 4 A The mixture is boiled.
B We boil the mixture.
- 5 A The gas passes along the pipe.
B The gas is passed along the pipe.
- 6 A The mixture passes through a filter.
B The mixture is filtered.
- 7 A The mixture is filtered through a filter.
B The mixture passes through a filter, which removes impurities.
- 8 A People test the product.
B The product is tested.
C The product undergoes testing.
- 9 A Scanners irradiate the product to kill germs.
B The product is irradiated to kill germs.
C The product undergoes irradiation to kill germs.

THE NITROGEN CYCLE

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Nitrogen is an ambiguous element. On the one hand it fertilizes plants and feeds animals. On the other hand it poisons waters and acidifies rain. Since living creatures require nitrogen to build their tissues, it is an essential element for life on earth. But, although four out of every five atoms in the air are nitrogen, it is in an inert form, i.e. it does not react with other chemical substances. Animals and plants therefore rely on a series of chemical reactions to convert it into the forms that they can use, and eventually return to the air.



The first step is the “fixation” of nitrogen gas by conversion to ammonia and nitrates. Lightning contributes some nitrogen, in the form of nitrates, to the soil. But the source of most nitrogen is bacteria on plants, which “fix” the nitrogen into ammonia. The ammonia is broken down into nitrites. The nitrites are then converted into nitrates by soil bacteria. The nitrates in the soil are absorbed by plant roots. When animals eat the plants, the nitrogen the plants contain is synthesized into protein. When plants or animals die, proteins are decomposed by bacteria into amino acids which are in turn broken down into ammonia. The ammonia resulting from the decomposition returns to the nitrite–nitrate–protein cycle. Some of the nitrates are degraded into nitrogen gas in the denitrification process. This gaseous nitrogen is returned to the atmosphere. The cycle is complete.

True or false?

- 1) Elements like nitrogen are taken from and returned to the air.
- 2) Nitrogen does not affect water supplies.
- 3) Nitrogen is one of the elements necessary for life on earth.
- 4) Nitrogen is needed by plants and animals and human beings alike.
- 5) Proteins contain little nitrogen.
- 6) There are not many nitrogen atoms in the air.
- 7) Nitrogen present in the air is non-reactive.
- 8) Nitrogen is used by animals and plants in a changed form.
- 9) Animals and plants depend on chemical reactions for their intake of nitrogen.
- 10) In time, plants and animals return nitrogen to the atmosphere.

Describe the cycle by filling in the blanks:

Firstly "fixation" takes place by _____ of nitrogen to ammonia and nitrates. Some nitrogen, in the _____ of nitrates, is supplied to the soil by lightning. The "fixation" of _____ nitrogen into ammonia is brought about by the action of bacteria. The ammonia _____ into nitrites, which are then _____ into nitrates by bacteria living in the soil. The nitrates _____ by plant roots. Plants _____ by animals and human beings and the nitrogen they _____ is synthesized into proteins. When plants or animals die, proteins _____ by a series of chemical reactions back into ammonia and nitrates. Some of these compounds _____ to the nitrite-nitrate-protein cycle, some _____ into gaseous nitrogen, which _____ to the atmosphere.

- 1 Read the following passage and decide whether the process described is linear or cyclical.

FOOD CHAIN IN THE SEA

The food chain describes the way in which everything in the sea seems to be eating everything else. Life in the sea begins with nutrient salts washed there by rivers. These salts feed masses of tiny plants, chiefly algae, called plankton, which drift in the sea. Plant plankton need sunlight to grow, so they are found near the sea's surface.

Plant plankton are eaten by tiny animals called animal plankton, which in turn are eaten by small fish such as herring and sprats. These fish are eaten by larger fish such as cod and haddock, a source of food for seals and dolphins; in their turn, these are eaten by killer whales.