

NCFE Level 2

Certificate in Understanding Business Improvement Techniques

REDUCING RISKS AND HAZARDS

EFFECTIVE TEAM WORKING

WORKPLACE AUDITS

PROBLEM-SOLVING

STANDARDISED WORKING METHODS

VISUAL MANAGEMENT SYSTEMS

SAMPLE

Workbook 1

Section 3: Continuous improvement (Kaizen)

In this section, you will learn about Kaizen principles and their application and the 8 types of waste and how to eliminate them. You will consider how Kaizen activities are carried out and look at where improvements can be made. You will look at the information needed to prepare a standard operating procedure and prepare a standardised work document suggesting how to eliminate variance to processes.

The main Kaizen principles and their application

Please read the following as it will help you to answer question 18.

Kaizen (or 'continuous improvement') is a Japanese business philosophy of continuous improvement of organisations' working practices and efficiency. It involves a system of constantly introducing small incremental changes within the organisation to improve quality and/or efficiency, rather than major or radical changes.

Kaizen uses the approach that the employees of a workplace are the best people to identify room for improvement – because they are the people who see the processes in action, on a day-to-day basis. An organisation that uses this approach therefore needs to adopt a culture that encourages and rewards employees for their contribution to the process. The word Kaizen comes from the Japanese, 'kai' meaning continuous and 'zen' meaning good.

There are four principles of Kaizen:

- **People** – The people in an organisation are given a voice along with decision-making powers – this is not just limited to members of the management team.
- **Change** – Change is seen as good and necessary for making improvements, but needs to be gradual.
- **Continuous improvement** – The organisation has to seek to continually improve their processes.
- **Eliminate waste** – Resources need to be used carefully and waste reduced to a minimum; when waste is reduced, value is added.



Did you know?

Kaizen first came about in Japan after World War 2, as they attempted to rebuild the country.

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The 8 wastes of lean manufacturing and how to eliminate them

Please read the following as it will help you to answer question 19.

The eight types of waste

These eight types of waste can be applied to service industries and office environments in the same way they are used in the manufacturing sector.

Type of waste	Description	Scenario
Transport 	Raw materials or products are sometimes moved more than needed if storage areas aren't big enough, if the layout is poor or there is too much stock to transport at once.	<p>At Alexander Sports, a specialist sports equipment and clothing supplier in the town centre, they are struggling for space. Much of their storage space is taken up with items that have not sold well, even in the sale. They want to ensure that they are well stocked for the spring and summer seasons but don't have enough space. They decide to rent storage space out of town for stock. This involves daily trips to the storage to retrieve stock for orders.</p> <p>An example of how to reduce this waste:</p> <p>Reduce stock levels to avoid having to store items off site to eliminate the additional transport this will require.</p>

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<p>Motion</p> 	<p>Unnecessary movement might be made if the workspace layout is not well planned and organised, for example walking to collect tools and equipment or too much bending and stretching. This means loss of working time and there is more chance of injury.</p>	<p>At Nino's Italian restaurant, the kitchen is not well organised so food stock is kept downstairs. Staff have to make frequent journeys downstairs to collect ingredients. This wastes time but also involves carrying large and heavy boxes of food and drink up a steep set of stairs.</p> <p>An example of how to eliminate this waste:</p> <p>Rearrange storage so ingredients are stored next to the kitchen, saving motion, time and reducing the risk of injury.</p>
<p>Failure to exploit human potential</p> 	<p>If an organisation fails to recognise and utilise all the talents of their employees, then they are wasting potential.</p>	<p>At Fairhaven Residential Home, Suky joins as a new member of the care team as she is looking for part-time work after having her first child. She has a qualification in nutrition and health but when a member of the kitchen team responsible for menu planning is absent on long-term ill health, the management team are not aware of Suky's qualifications and training and fail to use her abilities in the area they are struggling with.</p> <p>An example of how to eliminate this waste:</p> <p>Details of employees qualifications, skills and experience held on computer records to draw on human potential.</p>

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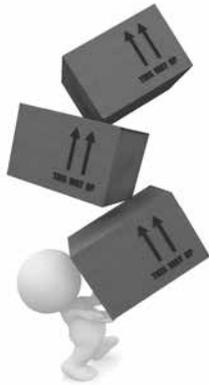
<p>Waiting</p> 	<p>If workers have to wait for the next step in a process, time can be wasted, for example if one area works faster than another.</p>	<p>At Caroline’s Craft Cakes, special occasion cakes are made to supply supermarkets and individual orders. The fruit cakes are taking a longer time to produce and the decorating department have free time waiting for the cakes to arrive. This slows down production and means that staff are being paid to wait around.</p> <p>An example of how to eliminate this waste:</p> <p>Train staff from the decorating department to work in the bakery section so that the demand for fruit cakes can be met and employees time is not wasted.</p>
<p>Inventory</p> 	<p>If an organisation has a large stock of raw materials, work in progress or finished goods, the workplace can become cluttered and less efficient.</p>	<p>At SMS Metallurgy, metals are ordered in large quantities, needing considerable storage. They also produce parts way ahead of schedule, so have to have enough storage for large numbers of partly and fully finished products. It is hard for staff to keep stock of the large storage areas, and sometimes stock is missed and produced again when orders come in.</p> <p>An example of how to eliminate this waste:</p> <p>Operate a just-in-time system for both ordering stock and production.</p>

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<p>Overproduction</p> 	<p>If too many goods are produced so that output exceeds demand, or production is too far ahead of schedule, waste can occur.</p>	<p>Harvey's Printing receives an order for a hotel brochure for 2019 containing events and prices. Someone has read the order wrong and overproduces by 500 colour brochures. As this is only for 2019 and cannot be used after December, the excess is wasted and has cost the company materials, processes and working time.</p> <p>Examples of how to eliminate this waste:</p> <p>Ensure that all orders are checked by a second member of staff to avoid mistakes leading to overproduction.</p>
<p>Defects</p> 	<p>If goods have to be scrapped or improved, waste occurs; this can also lead to customer complaints and the need for extra hours and pay for staff.</p>	<p>Posh Pooch is a company producing clothes for dogs. On a large batch of coats, the collar and hood section is found to be stitched incorrectly when it arrives at the station for attaching to the rest of the garment. This component has to be scrapped, meaning the fabric and working hours have been wasted. In addition, the workers putting the garment together then have to wait for the component needed and the company ends up having to pay a total of 40 hours overtime.</p> <p>An example of how to eliminate this waste:</p> <p>Provide visual controls at each work station giving exact instructions on production methods such as type of stitching.</p>

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Overprocessing



It is important not to put more work into a process than is needed, or to produce goods to a higher quality than is needed. Waste occurs if processes are more complicated than they need to be.

At the Princess Cupcake company, cupcakes are made to order for large events and promotions. Each one is baked and then wrapped in cellophane with a ribbon and label. It is decided that in addition to this, each wrapped cupcake should then be placed in a paper bag and secured with another ribbon. This adds on time and materials but doesn't add value. The customer takes off the wrapping and throws it away, meaning the produce has been overprocessed.

An example of how to minimise this waste:

Reduce unnecessary packaging that does not add value to the product.

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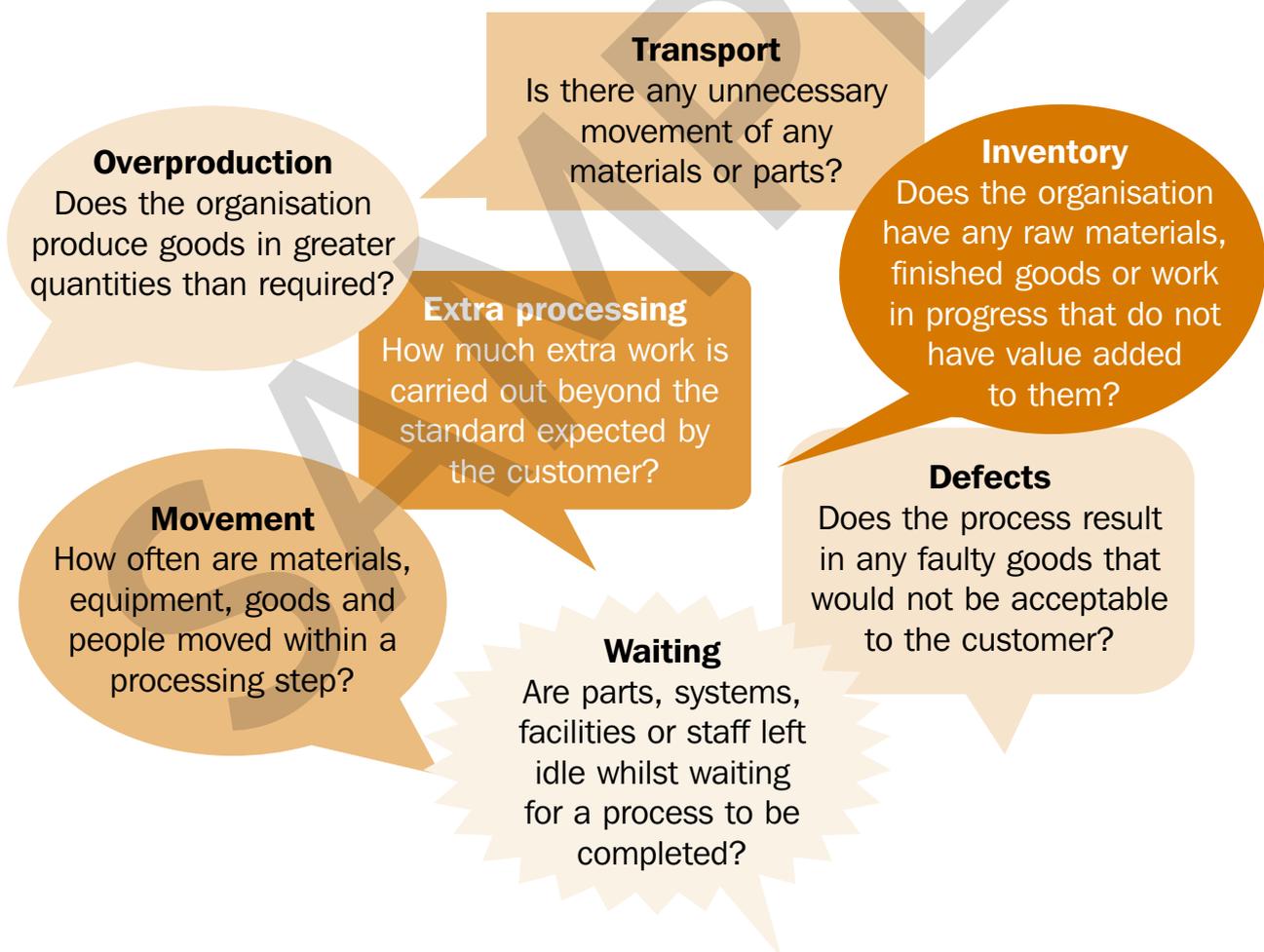


Did you know?

The founder of Ford Motor Company, Henry Ford, challenged ideas on waste in the 1900s. He wrote a book called 'My Life and Work', and in it he wrote about a farmer carrying water up a ladder rather than fitting water pipes as 'waste motion'. He showed that spending on improvements was not waste expense, but an increase in efficiency and a reduction in waste.

How waste is minimised

This covers issues such as:



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How to eliminate wastes

In identifying how wastes can be eliminated it is useful to draw on the experience of the employees who are involved in and use the processes as part of their role. Employees can be sent out in teams to carry out an analysis of the process and identify where waste is occurring and consider how it can be eliminated. The people who use the processes every day are much more likely to be aware of the issues and be able to suggest solutions.

Some steps to consider in eliminating waste include:

- Introduce and implement effective quality control systems to avoid defects or scrap.
- Avoid making products too soon, operate a just-in-time system. Products made too soon can deteriorate or get damaged.
- Don't produce more than is needed as materials could be wasted if there is less demand for the product.
- Cut out waiting time such as inefficient changeovers or down time due to maintenance issues.
- Make sure human talent is utilised by involving staff and looking for talents outside of their assigned role. For example, involving staff in analysing wastes and suggesting improvements.
- Reduce the transportation of products as it doesn't add value, it takes time up and could also result in damage.
- Avoid holding large amounts of stock as this ties money up that could be invested in other areas of the business and increases the risk of damage.
- Reduce motion by staff as it takes time and therefore costs money.
- Avoid extra processing and extra steps in the production process, for example over packaging which costs money but does not add value.

Here is an example to show a simple solution to wasted motion in an office space and how it could be eliminated:

Types of waste	Description	How to eliminate
Motion	In a large office space, the printer is situated at one end of the room, furthest away from the marketing department who use it the most	Either reposition the printer so it is in the area it is most used or purchase an additional printer for the marketing departments area

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Knowledge Activity 10: Which type of waste is being produced in each of the following examples?

Transport Motion Inventory Defects Overproduction Overprocessing Waiting

Scenario	Type of waste
A company producing nightwear makes a decorated cotton bag to package each item of nightwear in; this gets thrown away by the customer, as it is only for display.	
A new and enthusiastic employee at Susie's Coffee Shop decides to produce 20 of each type of sandwich before the shop opens to save time when customers arrive. At the end of the day, there are 17 cream cheese, 12 smoked salmon, 2 cheddar and pickle and 6 prawn mayonnaise sandwiches left that have to be thrown away.	
A toy factory has raw materials stored at a warehouse three miles away. As they are short of space, they have a lorry pick up supplies when needed – usually twice a day.	
A large food manufacturer has problems with machinery, meaning that the icing on cakes is not even and a full batch of iced sponges have to be thrown away.	
A stationery supplier requires employees to collect supplies from four different storerooms in the building; they have to use ladders, as supplies are stocked high up, and also need to carry boxes from one floor to another.	
To save time, the chef at the Bengal Brasserie decides to order in a larger amount of fish, seafood and meat to last for a few days, rather than ordering fresh every day. The restaurant has a quiet week, and a lot of the stock is wasted.	
Employees in a luggage manufacturing company have to wait to continue with their work, as the lock systems haven't arrived on time and the product can't be finished.	

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How to carry out a Kaizen activity and establish measurable improvements

Please read the following as it will help you to answer question 20.

Kaizen involves looking at the present situation and identifying what can be done to improve, and considering how to get to the next stage. The first step is to choose and appoint a strong leader and educate the workforce; to be successful, teams need proper Kaizen training. There are 7 steps involved in the process:

1. Identify an opportunity.
2. Analyse the process and test out possible changes.
3. Develop a solution.
4. Implement the solution.
5. Study the results. If the change was not successful, try a different solution.
6. Standardise successful solutions.
7. Use the knowledge to plan additional improvements.

There are improvements that can be made in a number of areas:

Area	How improvements can be measured
Quality	<ul style="list-style-type: none">● Is the product better?● Has there been an improvement to the work area?● Has there been an improvement to the process used?
Cost and use of resources	<ul style="list-style-type: none">● Has expense been reduced?● Has labour been reduced?● Has use of materials been reduced?● Has energy use been reduced?
Delivery	<ul style="list-style-type: none">● Has delivery time been reduced?● Has movement been reduced?● Have non-value added activities been reduced?
Customer service	<ul style="list-style-type: none">● Do customers benefit from a better service?● Has the product/service been improved for the customer?● Have complaints been reduced?

PROCESS ANALYSIS

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