Improvement Technician Level 3

Apprenticeship Standard

“Harness the best ideas and support the implementation through education”

Introducing CLS

Our People, Your People, Your Business….

Established in 2004, Complete Lean Solutions is a Lean training and Specialist support organisation providing services to clients across the globe. With offices in England and Australia and clients globally, CLS provides a standardised, well- proven model that enables our customers to significantly improve their operations. Our team of 35 Lean experts, all with first hand experience working at the home of Lean, Toyota, develop tailored Lean engagement programs to ensure maximum tangible benefits for our clients.

- Lean Manufacturing has been derived from the Toyota Production System.
- CLS only employs coaches who have “been there and done it,”
- Our coaches have extensive experience in implementing the Lean Tool Kit with people at all organisational levels, using a combination of simple examples, analogies, simulations and hands-on deployment, all done side-by-side with the process owner/operators.
- More importantly, our coaches understand how to communicate and reinforce the Lean mindset – the key to successful, sustainable improvement.

Who is the Qualification aimed at ….

- Improvement Technician – Level 3 Standard Apprenticeship

This qualification is aimed at learners who wish to improve their own jobs and processes through systematic problem solving and project management

Ideally the learner will have some prior knowledge of Lean techniques (possibly through the level 2, 'Improving Operational Performance' qualification we deliver)

The qualification aims to help trainees make a positive contribution to improving business performance.

Improvement Technicians are responsible for delivery and coaching of improvement activity within an area of responsibility, often associated with Lean and Six Sigma methodologies.

The qualification is equivalent to a Six Sigma yellow belt

Learners can come from all industry sectors and functions including automotive, banking, engineering, Food products, IT, Property, Retail, Telecoms, service and care sectors. This list is not exhaustive.

Our approach – Taking the time up front to understand Your Business

Before starting any training program we need to understand what is important to your business –

- **Your biggest challenges**
- **Your current understanding of business improvement / lean**
- **What good practice is already in place**
- **What lean tools are most applicable to yourselves**
- **What project areas we can focus on as part of the apprenticeship**
- **What the teams will look like**

It is important that we build on the good work you already have in place and keep a consistent message–

- **We can dual brand the training material with your company logo**
- **We contextualise the delivery to be relevant to your type of work**
- **We incorporate your material and wording wherever possible**
- **We use the program to re-enforce important company information**
- **We plan the delivery and support visits around your company needs**

You can chose if you want to work on a specific project or just take an area and implement Lean in that area utilising the training program

The Qualification….

The Level 3 Standard Qualification is made up of the following items:

Duration – 14 Months

Training

- Management Information session - To confirm project teams and potential projects (This can include learners)
- Programme induction and enrolment half day. Where the learners undertake an initial assessment to confirm functional skills understanding and discuss the projects or areas they will be working on.
- Underpinning knowledge training delivered in classroom environment at your workplace. 5 days over the first 3 months.
- Minimum of 1 work based Improvement project - Over the duration of the programme.
- Completion of learning log - Over the duration of the programme.
- Functional Skills (Maths and English to Level 2) Diagnostic test to identify areas for improvement at Month 3 followed by any training required prior to taking a level 2 test around month 7
- Regular reviews will be carried out every 12 weeks with the learner and their Mentor / Manager to review progression.

End point assessment – Carried out once CLS coach and Client Mentor confirm that Learner is competent – usually around month 13

- 40 question Multiple choice examination – to assess knowledge elements of the standard
- Project report, presentation & questioning – to holistically assess knowledge, skills and behaviours (KSBs) in the standard
- Professional discussion underpinned by log – to holistically assess KSBs across the standard.

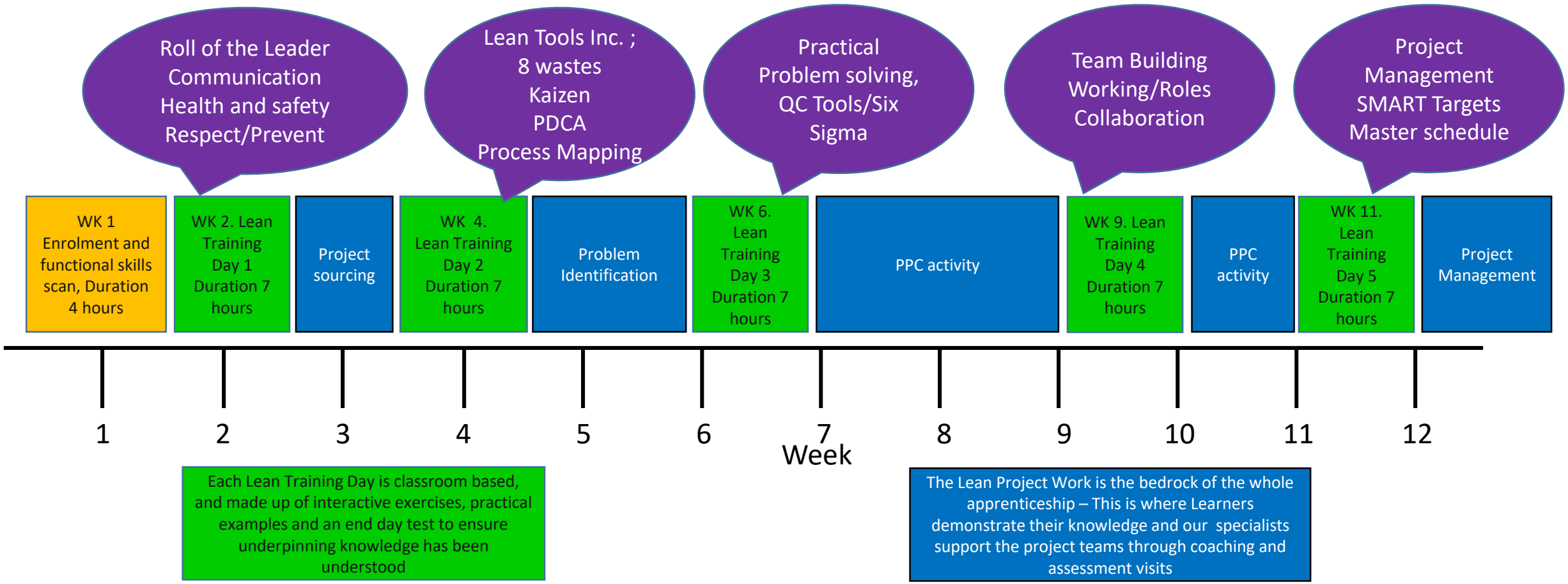
Apprenticeship Structure

- The following pages describe how the program is typically delivered. HOWEVER the detail of the projects and make up of the training elements is tailored to the environment and needs of the trainees on the program.
- That actual content of the training will be selected from the training elements that are listed in the following pages. This will be discussed at the Management information session and the training tailored specifically to yourselves.
- If you have Improvement projects, or specific targets to be met that could be supported through the use of Lean tools then you should make us aware at the information session so that we can take these into account
- Wherever possible, undertaking the training as part of a team is preferable. We recommend that around 5 / 6 people are involved from each area and that the person who is responsible for that area is on the programme. If this is not possible we will try to design teams that are complimentary.

The first 12 weeks -

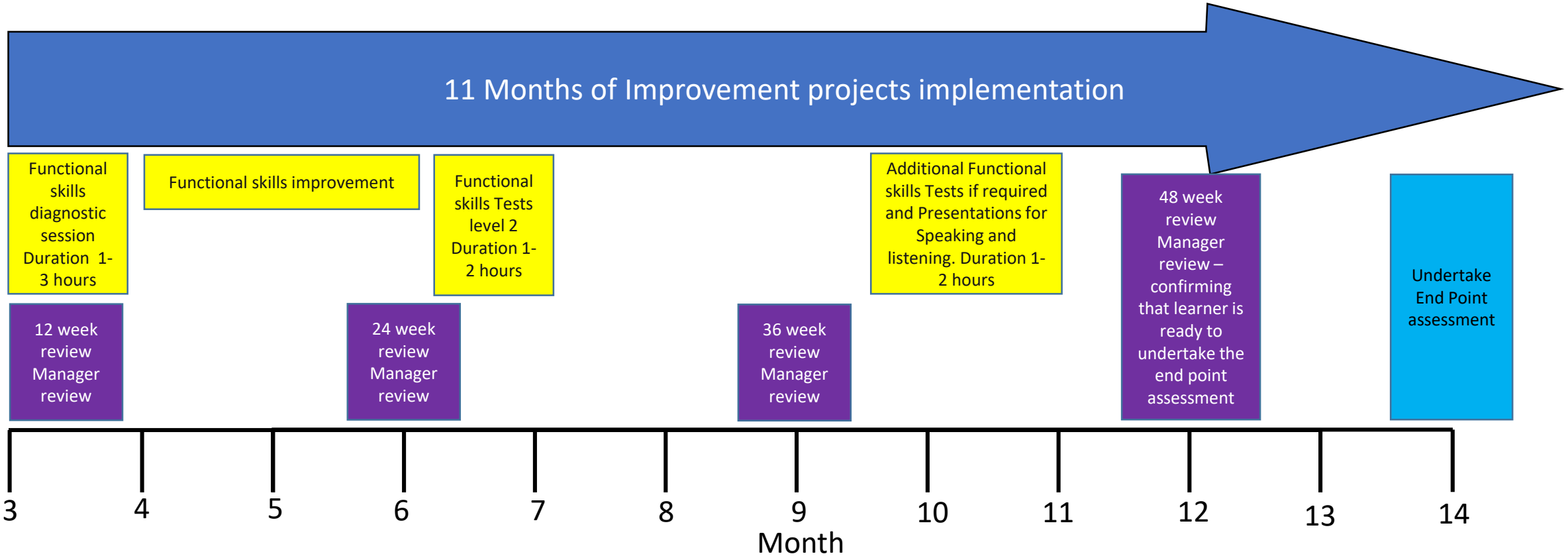
Complete Lean Solutions

Three Month Underpinning Knowledge Training - providing the learners with the knowledge to be able to carry out improvements within the workplace, and some foundation project work



The Practical Implementation..

The Learners work in teams on the projects that give the most benefit to the business. The CLS coach supports and carries out on project assessments.



Functional skills Qualifications are required to be undertaken by everyone who does not hold a GCSE level C or above. The areas for improvement will be identified during the diagnostic test and an individual learning plan and support will be created at this time

The Lean Project Work is the bedrock of the whole apprenticeship – This is where Learners demonstrate their knowledge and our specialists support the project teams through coaching and assessment visits

Module 1: Role of the Leader

Classroom Day 1 (Week 1)

1) Project Introduction – Lean Values and Behaviors
2) Role of the Leader;
   - Leading Change
   - Influencing and Reinforcing
   - Communication / Soft Skills
   - Updating Knowledge and skills
3) Worksite Health and Safety Wellbeing
4) Respect for Others
5) Self Evaluation
6) Safeguarding, Prevent & British Values

Module 2 : Lean Tools

Classroom Day 2 (Week 3/4)

1) Review
2) Foundation of lean
3) 8 Wastes
4) 5'S
5) Visual Management
6) Kaizen
7) PDCA
8) Process Mapping

Module 3: Problem Solving

Classroom Day 3 (Week 6)

1) Review
2) PPS- Root cause, Ishikawa, Improvement summary.
3) Key Performance Indicators
4) Six Sigma
5) QC Tools

Module 4 : Team Building

Classroom Day 4 (Week 9)

1) Team Building/Working
2) Team Roles /Responsibilities
3) Collaboration
4) Constructive Criticism
5) Managing ego
6) Empathy
7) Integrity

Module 5: Project Management

Classroom Day 5 (Week 11)

1) Review
2) Project Management
3) SMART Targets
4) Master Schedule
5) RAG Status
6) Communication Cadence
7) Gate Reviews
8) Results
9) Sharing Best Practice/Benchmarking

Independent End Point Assessment

Month 13

1) 40 Multiple choice questions
2) Review Log Book/Journal
3) 25 min Professional Discussion

Typical Projects..

Chronic or complex problems involving single or multiple Problem Solving activities;

- Warranty /Customer Issues
- Supply Chain Quality and Logistical Issues
- Equipment Reliability / Capability
- Safety Critical problems
- Cost problems with capital and budget over expenditure
- Internal Occupational Health and Safety Issues

Project Management involving a number of stake holders;

- Changes in Area layout or change of location – New Buildings
- New Equipment /modifications
- Product changes
- Company situation changes
- Succession Planning
- Implementation of new company policies/strategies, e.g. PM/TPM, 5S
- Implementation of measures for company adherence to national standard, e.g. ISO9001
- New Company initiatives

Example of improvements made during one of our Improvement Programmes

These cost savings were made by an engineering company of around 100 employees

Project	Area	Detail	Savings (one off)	Savings (ongoing)
5S	Soft Machining	Excess Benches & Tooling	£1,478.00	
		Tooling replacement reduction		£2,000.00
		5% setting reduction		£4,400.00
	Flute Grinding	Tooling and materials returned to store	£192.00	
		Time saving from using new Setting Trolleys on the Bramac & ITM		£5,500.00
		Time saving from organising projections from a pile to a filing cabinet		£3,940.00
	Blank Finishing	Shortened setups due to not having to look for setting tools		£583.00
	Thread Grinding	Obsolete inventory sold as scrap metal		£900.00
Standardised Work	Soft Machining	5% reduction in Set Ups		£4,400.00
	Blank Finishing	11 min reduction time in set-up time		£1,283.00
7 Wastes	Soft Machining	Staggered lunch breaks		£17,600.00
		Spare set of Swarf bins - downtime reduction		£5,700.00
		M35 C8 Steel Rationalisation	£16,779.00	
	Flute Grinding	Transport of tools to store - trolley put in place & end of transport		£6,500.00
		pre-rough of grinding wheel off machine - reduce set-up time		£13,800.00
	Blank Finishing	5S WIP(reduction) & visual factory highlighting excess labour - redistributed		£69,160.00
		Grinding Wheel rationalisation & control - 17 reduction	£1,170.00	£350.00
	Heat Treatment	Inventory (WIP) reduced through implementation of a managed buffer	£45,448.00	£4,545.00
		Parts were being scrapped due to degreasing to early - rusting		£1,200.00
	Thread Grinding	Time saved by eliminating need for operators to calculate from imperial to metric - downtime reduction		£22,500.00
Visual Factory	Heat Treatment	5s, target setting & managed buffer - 20% increase in throughput		£36,800.00

Example of improvements made during an LLA

These cost savings were made by an engineering company of around 100 employees

Capacity Improvement	Thread Grinding	Uptime increased by 27% through implementation of a visible & audio andon		£104,320.00	
Smart Changeover	Soft Machining	22% reduction in setup time on Miyano		£9,600.00	
	Flute Grinding	Wheel changeover - externalisation of prep tasks & standardisation = 26min/set-up		£9,660.00	
	Blank Finishing	Reduction in set-up time through externalisation of tasks and removal of need for manual crane		£1,166.00	
	Thread Grinding	Set-up time reduction of 34 minutes by externalisation of tasks		£41,328.00	
TPM	Soft Machining	25% Fewer breakdowns in section. Machine down for an average of 4 hours		£7,680.00	
A3 Reports	Conveyance	Walkway between plant 1 & 3 - reduce motion, inventory, scrap and heating	£75,000.00	£6,600.00	
	Flute Grinding	Purchase of additional grinding wheel spindles to aid smart changeover - reduced time		£7,300.00	
	Thread Grinding	Purchase of spare motors for the Drakes - loss in downtime		£25,390.00	
Value Stream Mapping	Drills	Lead time in Black Magic Drills reduced by 9 days - WIP saving & improved IFOT	£21,743.00	£2,174.00	
	Taps	Highlighted build up of inventory at inspection - new layout will almost eliminate buffer WIP reduction (17,606 components @ average cost £8.05 per tap)	£141,728.00	£1,473.00	
Training Matrix	Soft Machining	1 shift per month the Miyano doesn't run due to lack of skills coverage		£7,680.00	
	Blank Finishing	Skills coverage improvement freeing up 1 shift / week		£13,125.00	
PPS	Soft Machining	Band-aid identified for broken centres - scrap reduced by 0.1		£2,880.00	
	Thread Grinding	Scrap reduction through implementation of new flute to square measurement method		£2,186.00	
Pull System	Tips	Kanban re-ordering for Tips - Reduction in stock	£400.00		
	Grinding Wheels	Kanban re-ordering for wheels - reduction in emergency trips to Bunnings		£735.00	
		Kanban re-ordering for wheels - reduction in downtime		£12,864.00	
Poka Yoke	Thread Grinding	Poka Yoke implemented to prevent blowing of light on inspection kit - reduce downtime while using plant 1 kit		£1,368.00	Total
			£303,938.00	£458,690.00	£762,628.00

Elements of the Apprenticeship Standard….

Competence - Improvement Technician
The majority of the apprenticeship is made up of practical hands on project work. You may have projects to improve your area already allocated or clear targets in mind. The training delivered will support these improvement areas (as long as they are in line with the standards required for the qualification). You will be given underpinning knowledge training in the classroom and support at the project area from the your trainer. The target is to show that you have improved the operational performance of your area using the knowledge and learning you have gained during the apprenticeship.

Knowledge areas to be embedded and demonstrated through the professional discussion on the work based project;

Compliance
Team Formation and Leadership
Self Development
Project Management
Change Management
Lean Principles and methods
Project Selection and scope
Problem definition
Process Mapping
Data Acquisition
Basic Statistics and Measures
Process capability and performance
Root cause analysis
Experimentation
Identification
Prioritisation
Sustainability and control

Functional Skills Maths (Level 2) English (Level 2)
You will complete Functional Skills in Maths and English. The initial assessment will determine your current level, diagnostics to identify support, where required, will be tailored to your requirements. Assessments are designed to measure the competent application of skills within real life scenarios. The final exams can be completed on line or paper based, these include reading, writing, speaking & listening assessment & Maths . **Completion of functional skills may not be required where evidence of a current transferable skill exists, such as Maths or English GCSE certificates.**

End Point Assessment
At the end of the programme the learner will need to demonstrate their learning/understanding and development through participation in;

- **A multiple choice exam comprising of 40 questions**
- **A professional discussion of around 25 minutes where the learner explains a project they have worked on and can give examples of the knowledge gained**
- **Review of a work book/Journal that has been comprised throughout the programme and explains the 'learner journey'.**

What Does The Company Get From The Program?

Employees that have a common understanding of how business improvement works and the steps to take to solve problems

A clear cost benefit to the company through the projects that have been implemented

A legacy framework to operate the business in a Lean way

Access to world class business improvement specialists – who get their hands dirty and pass their knowledge on by getting involved

What Do The Apprentices Get From The Program?

A nationally recognised Level 3 Apprenticeship Certificate awarded through the 'Institute of Apprenticeships'

An opportunity to carry out improvement projects that directly affect themselves in their own workplace

A structured platform to showcase to management their achievements

14 months of access to world class business improvement specialists, who are real people and have "been there" and implemented lean activities in different environments all over the world

What Does The Program Cost?

For LEVY paying companies (With a payroll in excess of £3m)

The cost per learner for the apprenticeship is £4000. This will be drawn down from the amount in your LEVY digital account monthly over a 14 month period. At the rate of £228 / month / apprentice with a month 15 payment of £800 based on successful completion – This will be done electronically

If in any month you do not have enough money in your Levy pot to cover the cost you will be charged 10% of any shortfall. As an example if the bill for the program that month is £1000 and you only have £100 in your LEVY account then you will invoiced for 10% of the shortfall – which in this example would be £90

For None Levy paying companies(With a payroll of less than £3m)

The cost per learner for the apprenticeship is £4000. This will be 95% funded by the Skills funding agency which CLS can access. You will pay a total of £200 per learner spread over 10 equal monthly payments of £20.00/ Month. This will be invoiced at the end of each month once the training program commences.

What Is the commitment required from you?

Throughout the programme, 20% of the apprentices time should be spent training, working on projects or using the tools and techniques that they are learning as part of this apprenticeship.

This time must be directly relevant to the apprenticeship framework or standard and could include, but not limited to, the following;

- The teaching of theory (for example lectures, role play, simulation exercises online learning or job specific training)
- Practical training such as shadowing, mentoring (receiving and providing) and coaching sessions
- Improvement Project work
- Documenting improvements and re training of improved processes

Next Steps

Select a minimum of 25 people to start a program and pass their details to CLS – There is no maximum number

CLS visit your site for the information session and tailor the program to your specific needs and agree start dates

Enrolment and skills scan day – CLS are on site to explain the course to the apprentices and carry out a skills scan for English and Maths for anyone who does not hold a GCSE level C or higher to confirm that they are eligible to undertake a level 3 apprenticeship. There is then some Health and Safety basic training

One week after the enrolment day the LLA training commences with Module 1 training

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