

Europäisches Anrechnungssystem für Teilqualifikationen in Metall- berufen

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Arbeitspaket 3 DEV

Entwicklung von Lerneregebniseinheiten und Bepunktung

3.3 Ableitung von units of l.o.

Lerneregebniseinheit Nr. 3 in Englisch: 1204_EN_LE3_Herstellen_Baugruppen_Metall

Unit of learning outcomes for basic qualification in metal industry

No. 3

Production of Simple Assemblies

April 2012



Dieses Projekt wurde mit Unterstützung der Europäischen Kommission finanziert. Die Verantwortung für den Inhalt des Produkts trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.



Dieses Projekt wird gefördert aus Mitteln des Hessischen Ministeriums für Wirtschaft, Verkehr und Landesentwicklung

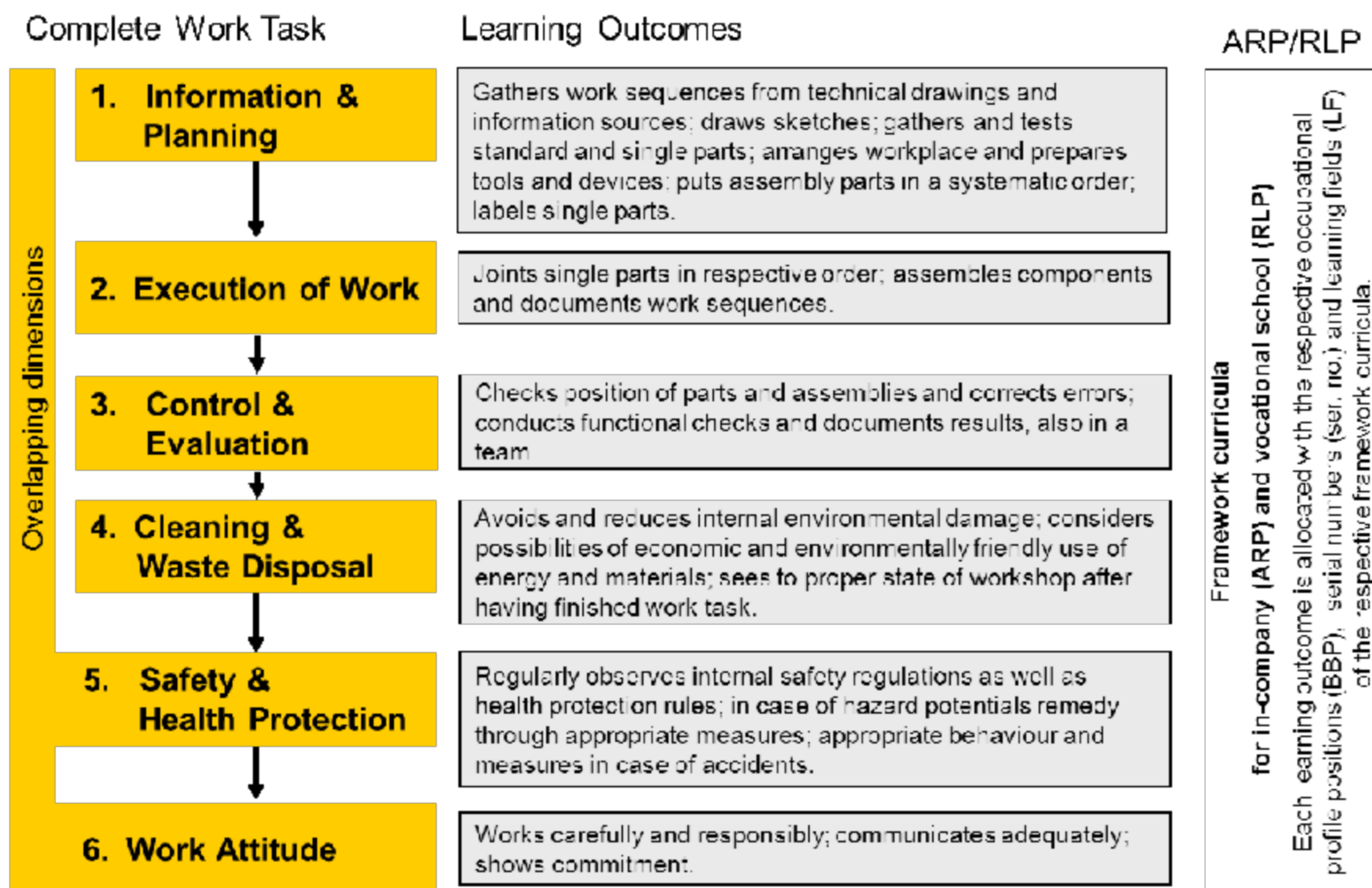
Unit of Learning Outcomes 3 for Prevocational Training in Metal Working with Test Criteria

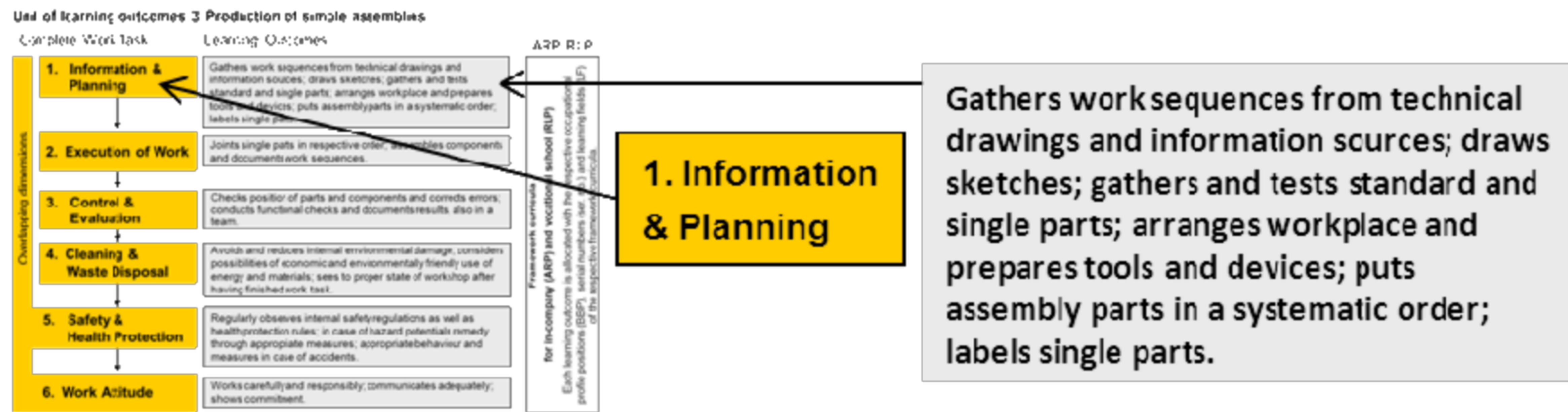
Title	Production of simple assemblies
Brief description of the unit of learning outcomes	The trainees are able to plan and execute an entire work task: Based on technical records they determine the task and plan the work process with the help of a work schedule. They prepare the task, are familiar with and use theoretical and practical basics of various joining techniques and chronologically execute disassembly and assembly tasks. They control the result, document it, and clean up. They observe the basic aspects of work-, health- and environmental protection.
Example for entire work task (see Annex)	Example: Manufacture and assembly of items for an extractor
Respective qualified jobs and ECVET points to be scored (in relation to entire training). (Calculation based on 60 points per year.)	<p>Industrial metal-working occupations (3,5 years) (plant mechanic, industrial mechanic, construction mechanic, tool mechanic, milling machine operator)</p> <p style="text-align: right;">19,79 ECVET points</p> <p>Metal worker (3,5 years) 16,00 ECVET points</p> <p>Machinery and plant operator (2 years) 13,60 ECVET points</p>
Dual Vocational Training System	<p>The dual vocational training system combines part-time vocational school with practical work experience. The training in companies and in vocational schools is based on framework curricula so that uniform national qualification standards are guaranteed.</p> <p>The dual vocational training system sees itself as a holistic system in which the vocational education has to place the skills, knowledge and competences (vocational actionability), which are essential for the exercise of a qualified vocational operation in a changing working environment (See: Vocational Training Act Section 1, Paras. 3).</p>
Framework curriculum (in company)	Legal basis for the training in companies according to respective job
Framework curriculum (vocational school)	Legal basis for the education in vocational schools according to respective job
Prevocational training	<p>Training preparation is an integral part of the vocational training (see: Vocational Training Act).</p> <p>Training modules used in schemes to prepare individuals for vocational education and training contain parts of the vocational training offered for recognized occupations.</p> <p>The “unit of learning outcome” at hand is one of four units which are illustrating the first year of apprenticeship of the occupations above.</p>

Outline of Unit of Learning Outcomes 3

The following figure shows the sequences of a complete work task including information and planning, execution of the task, control and evaluation as well as cleaning up the workplace and waste disposal. One dimension that concerns all work sequences is the observation of safety instructions and health protection regulations. Another overlapping dimension is the work attitude as prerequisite for a successful execution of a work assignment. To each working sequences learning outcomes are allocated as well as occupational profile positions/ serial numbers and learning fields of the respective framework curricula.

Unit of learning outcomes 3: Production of simple assemblies



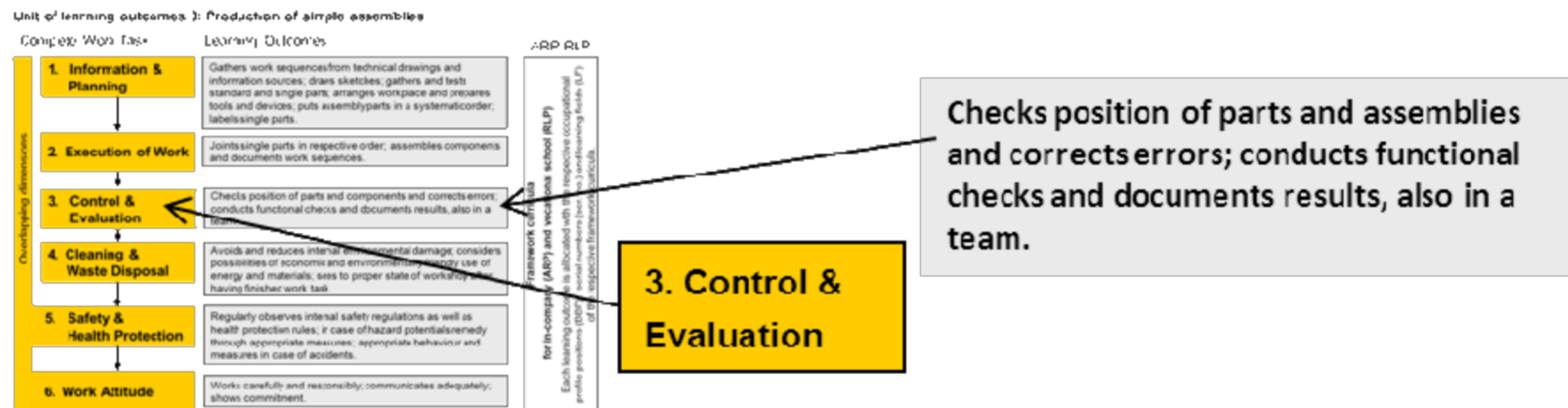


Learning outcome: Gathers work sequences from technical drawings and information sources; draws sketches; gathers and tests standard and single parts; arranges workplace and prepares tools and devices; puts assembly parts in a systematic order; labels single parts.

EQF-Dimensions

Knowledge	Knows and is able to name major drawing practice standards and drawing instruments. Names material of the production parts together with their properties and fields of application with the help of the technical drawing or list of parts. Names standard parts together with their properties and fields of application with the help of the technical drawing and list of parts.
Skills	Gathers all relevant information for the task from technical records (general drawings with list of parts, single part drawings). Draws sketches, if necessary. Prepares devices, tools, machines and necessary auxiliary materials. Care: handles technical records carefully. Communication: in case of uncertainty asks appropriate (clarification questions) and adequate (choice of language) questions. Listens attentively. ¹
Competences	Tests standard parts and prefabricated single parts. Evaluates devices, tools, machines and necessary auxiliary materials and respectively selects appropriate ones. Plans work sequences (disassembly and assembly) based on information from technical records, and puts the sequences into a reasonable order. Care: pays attention during the planning process to the work sequences being complete and in a reasonable order.
Framework curricula	Industrial metal-working occupations: BBP 5a,b,c,g, 6a,b,c,d,l, 7a,b, 10a, 11a,b, 12a,b; LF 3 Metal worker: Ser. no. 5a,b,c,d,e,f,i,j, 6a,b,c; LF 3 Machine and plant operator: Ser. no. 6a,b,c,e,f, 7a,b,c, 8a; 12a; LF 3 of industrial metal working occupations
Test criteria	Prepares a work schedule based on technical records. Names tools, machines and work equipment with technical terms, also in English. Selects all necessary tools, machines and auxiliary materials based on the drawing. Puts the machine in an operational status. Names three materials of the component and one relevant property of each of them.

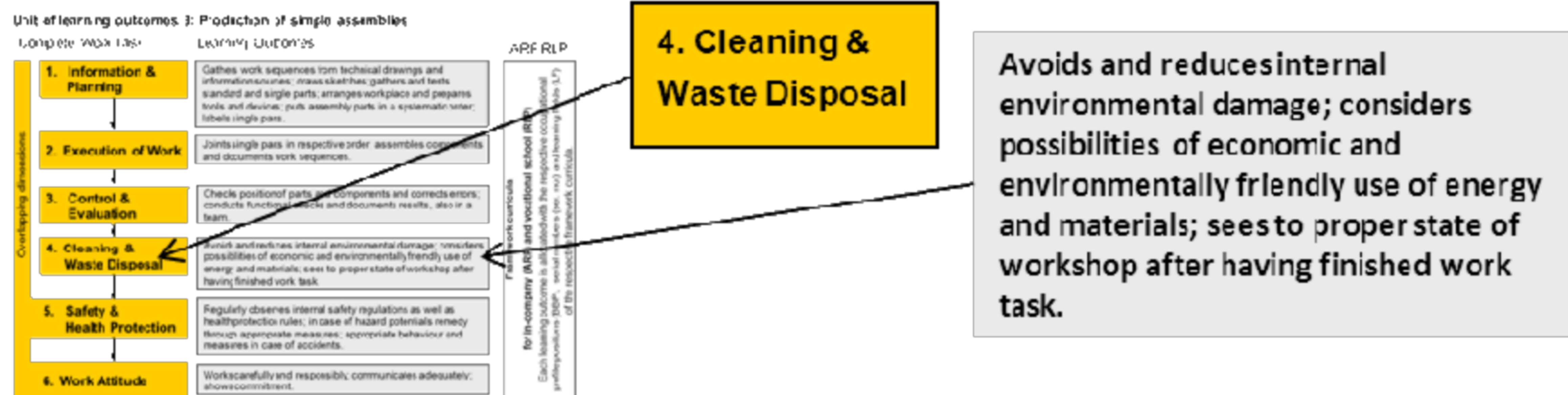
¹ The execution of a complete work task implies work attitudes that are generally called "social and personal competences". The companies consider them as prerequisite for an apprenticeship. The "unit of learning outcomes" lists them under "work attitude" (sequence no. 6). Furthermore, they are mentioned in the respective sequences of the work task in order to show at what point they are especially relevant. The draft of the German Qualification Frame (G-NQF/GQF) mentions, apart from knowledge and skills, also social competence and self competence.



Learning outcomes: Checks position of parts and assemblies and corrects errors; conducts functional checks and documents results, also in a team.

EQF-Dimensions

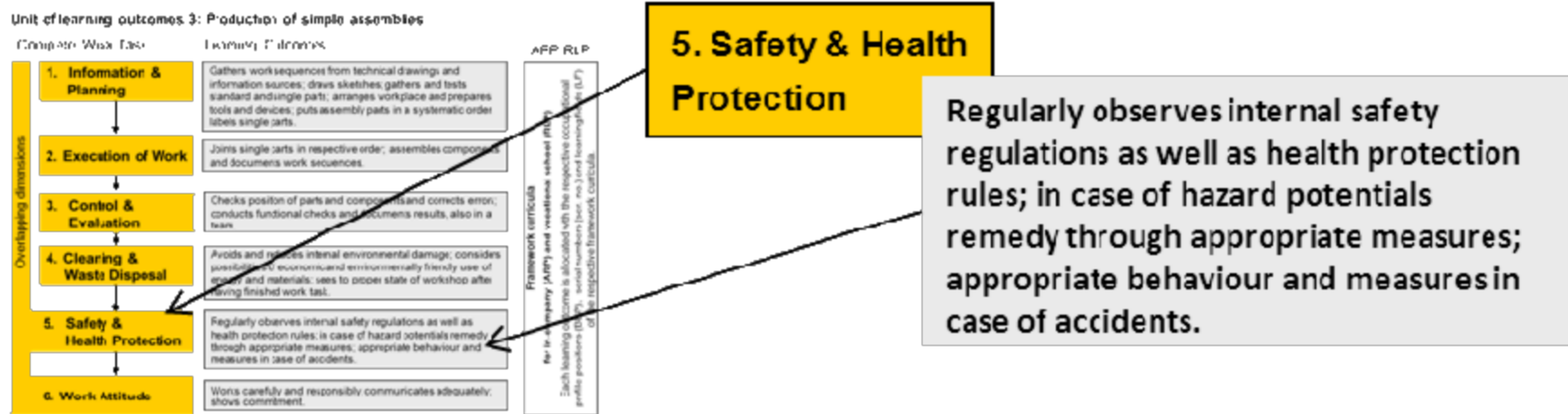
Knowledge	Names relevant test procedures / testing instruments to check measurement errors.
Skills	<p>Considers main reasons of measurement errors.</p> <p>Uses adequate testing instruments to check standard- and single parts for required function and quality.</p> <p>Uses visual inspections.</p> <p>Documents results.</p>
Competences	<p>Evaluates regularly the state of assembly work by using suitable testing instruments.</p> <p>Corrects arising errors during assembly process.</p> <p>Checks the general function of the assemblies.</p> <p>Care: handles testing instruments carefully.</p> <p>Communication: in case of uncertainty asks appropriate (clarification questions) and adequate (choice of language) questions. Listens attentively. Conducts functional checks in a team.</p>
Framework curricula	<p>Industrial metal working occupations: BBP 5d,e,f,h,i, 6j,k,; LF 3</p> <p>Metal worker: Ser. no. 5h; 7a,b,c; 8a,b,c,d,e,g,h; LF 3</p> <p>Machine and plant operator: Ser. no. 6d,g; 8b,c,d; 14a; LF 3 of industrial metal working occupations.</p>
Test criteria	<p>Names all necessary test procedures / testing instruments (devices / instructions) relevant for the work sample.</p> <p>Names four reasons of measurement errors</p> <p>Uses suitable testing instruments correctly.</p> <p>Documents results.</p> <p>Checks regularly by means of test procedures during assembly work. Evaluates final result.</p>



Learning outcomes: Avoids and reduces internal environmental damage; considers possibilities of economic and environmentally friendly use of energy and materials; sees to proper state of workshop after having finished work task.

EQF-Dimensions

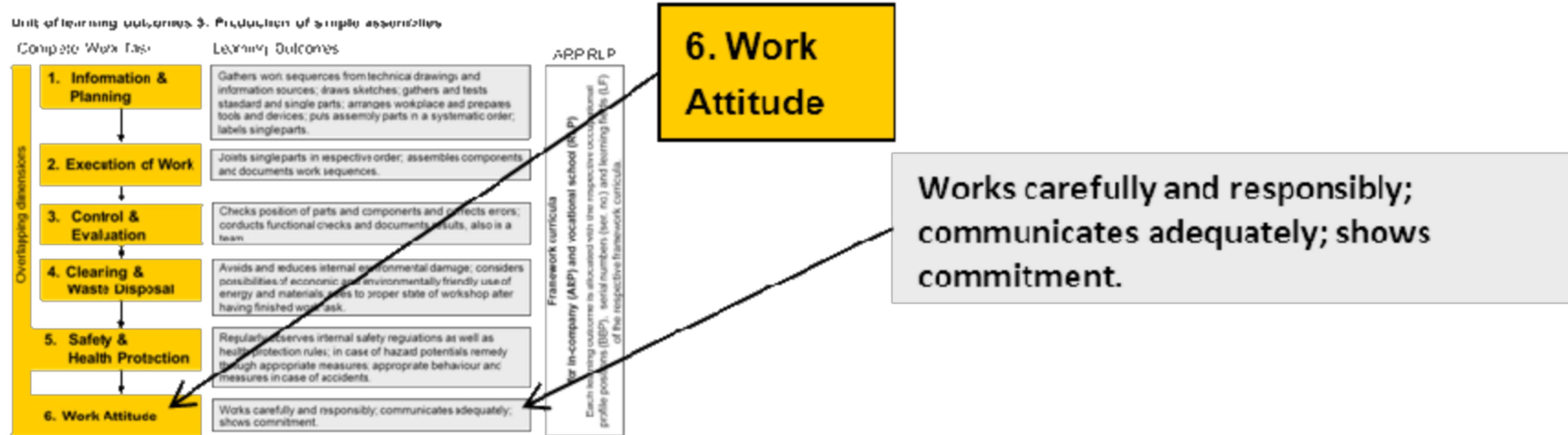
Knowledge	<p>Names workshop regulations.</p> <p>Names required tasks for maintenance of machines / equipment..</p> <p>Names possibilities and regulations for a safe and environmentally correct disposal on site.</p> <p>Names the storage system of the workshop.</p> <p>Names the basics of health-, work and environmental protection.</p>
Skills	<p>Cleans used tools, materials, products.</p> <p>Stows away tools, materials, products according to storage system of the workshop.</p> <p>Carefully cleans up the workplace according to the basics of health-, work- and environmental protection and of workshop rules.</p> <p>Maintains machines / equipment.</p> <p>Disposal of remains of materials and auxiliary materials.</p>
Competences	<p>Checks and evaluates the orderliness of the workplace and workshop and corrects inadmissibilities independently or upon consultation.</p>
Framework curricula	<p>Industrial metal working occupations: BBP 4a,b,c,d, 6e; 9a,b,c; LF 3</p> <p>Metal worker: Ser. no. 4a,b,c,d, 12a,b,c,d,e,f,g; LF 3</p> <p>Machine and plant operator: Ser. no. 4a,b,c,d; 12b, 13a; LF 3 of industrial metal working occupations</p>
Test criteria	<p>Cleans up workplace by using adequate tools and means.</p> <p>Cleans tools and machines and stows tools away properly.</p> <p>Names required tasks for maintenance of machines / equipment.</p> <p>Names internal facilities for disposal of waste and hazardous materials.</p> <p>Finally evaluates of cleaning up and corrects, if necessary.</p>



Learning outcomes: Regularly observes internal safety regulations as well as health protection rules; in case of hazard potentials remedy through appropriate measures; appropriate behaviour and measures in case of accidents.

EQF-Dimensions

Knowledge	Names required behaviour and measures in case of accidents. Names safety regulations required for work assignment: uses required personal protection equipment, observes safety signs; informs colleagues, if necessary. Observes relevant behaviour to protect own health.
Skills	Takes remedial action in case of known hazardous situations. Applies safety regulations relevant for work assignment: uses required personal protection equipment, observes safety signs; Adapts workplace according to ergonomic requirements and work assignment. Keeps workplace in order.
Competences	/
Framework curricula	Industrial metal working occupations: BBP 3a,b,c,d,e; 11a,b; LF 3 Metal worker: Ser. no. 3a,b,c,d; LF 3 Machine / plant operator: Ser. no. 3a,b,c,d; 12a; LF 3 of industrial metal working occupations
Test criteria	Keeps workplace in order. Explains five relevant safety signs. Names safety devices of machines. Takes measures or shows required behaviour to protect safety and health. Names four parts of personal protection equipment. Describes three measures and / or reactions in case of accidents. Names the four required reactions in case of fire. Describes first measure in case of electrical accidents.



Learning outcomes: Works carefully and responsibly; communicates adequately; shows commitment.

Features of work attitude and personality

Sense of responsibility	Considers relevant safety measures for the use of tools and machines. Shows responsibility for entrusted materials, tools and machines.
Carefulness	Minds completeness of work sequences during the planning process. Handles drawings, tools, machines and materials carefully and respectively selects appropriate tools, machines and materials. Works carefully, accurately and environmentally consciously.
Appropriate, target-oriented communication	In case of uncertainty asks appropriate and proper questions, and listens carefully. Makes arrangement with colleagues.
Commitment	Works steadily on work assignment.
Framework curricula	Industrial metal working occupations: BBP 5e,h,i, 6h,i, Metal worker: Ser. no. 5b, Machine and plant operator: Ser. no. 6f;
Test criteria	Selects and applies required safety measures while working with tools and machines. Selects appropriate tools, machines and materials and handles them carefully. Asks in case of uncertainty understandably. Makes arrangement with team colleagues about use of tools, machines and materials. Works steadily on assignment. Produces one operating component.

Annex:

Example for an entire work task: manufacture and assembly of items for an extractor

Specification and material, see: http://www.christiani.de/product_info.php/products_id/20676

