

	Preparations/Proposals	5	4	3	2	1
Structured communication 1: Structure/Clarity/Language	Students are able to communicate their research and that of others in a structured and catchy manner, both written and verbally.	Structured layout: all instructions concerning the layout have been met: all headers are marked, all figures have clear and extensive captions, figures have a clear position, <b>concise &amp;</b> clear formulation, correct use of scientific jargon, <b>academic use of language</b> , all references have been made where necessary.	Structured layout: <b>all</b> instructions concerning the layout have been met: <b>all</b> headers are marked, <b>all</b> figures have clear <b>and extensive</b> captions, figures have a clear position, <b>clear</b> formulation, <b>correct use of scientific jargon</b> , <b>all</b> references have been made where necessary.	Structured layout: <b>almost all</b> instructions concerning the layout have been met: <b>most</b> headers are marked, <b>most</b> figures have <b>clear</b> captions, <b>figures have a clear position</b> , <b>mostly clear formulation</b> , <b>some references have been made where necessary</b> .	Structured layout: <b>several</b> instructions concerning the layout have been met: <b>some</b> headers are marked, <b>some</b> figures have captions.	<b>No or very little</b> structured layout.
		5	4	3	2	1
Repeatable measuring plan 1: Goal, Research questions, Hypotheses	Based on a specific problem students are able to write a measuring plan from which reasonably may be expected that it will deliver usable results.	Contains well-defined and <b>creative</b> goal, quantifiable research question, subquestions & falsifiable <b>sub hypotheses and main</b> hypothesis and its contribution to science and the world is dicussed.	Contains <b>well-defined</b> goal, quantifiable research question, <b>subquestions &amp; falsifiable</b> hypothesis and its contribution to science <b>and</b> the world is dicussed.	Contains a goal, <b>a quantifiable</b> research question & <b>a justified hypothesis and its contribution to science or the world is dicussed</b> .	Contains <b>a goal and a research question</b> .	Contains <b>no goal or no</b> research question.
Repeatable measuring plan 2: Theory		A <b>broad</b> knowledge of current scientific theory is used to <b>quantitatively</b> substantiate the hypothesis and measuring method. No irrelevant theory is mentioned.	<b>Thorough</b> knowledge of <b>current</b> scientific theory is used to substantiate the hypothesis <b>and measuring method</b> . No irrelevant theory is mentioned.	<b>Sufficient</b> knowledge of scientific theory is <b>used to substantiate the hypothesis. No irrelevant theory is mentioned</b> .	Contains <b>some</b> scientific theory.	Contains <b>no or very limited</b> theory.
Repeatable measuring plan 3: Setup		Contains clearly understandable visual and description of a <b>creative or clever</b> experimental setup including a complete description of materials needed and <b>all critical parts, critical aspects are discussed</b> .	Contains <b>clearly understandable</b> visual and description of experimental setup including a complete description of materials needed.	Contains visual <b>and</b> description of experimental setup <b>including a complete description of materials</b> needed.	Contains <b>visual or description</b> of experimental setup.	Contains <b>no or a very limited</b> visual or description of experimental setup.
Repeatable measuring plan 4: Measuring method		Contains a <b>creative or clever repeatable</b> measuring method containing <b>all</b> essential steps, discusses the intended range of measurements <b>and whether that is feasible</b> , what needs to be varied <b>in which range and whether that is feasible, how that variation will be controlled</b> , and <b>what needs to be kept constant</b> , including <b>how setup errors will be detected</b> , how raw data errors will be determined, including a task risk analysis focused on actions <b>not containing any unnecessary risks</b> .	Contains a measuring method containing <b>most</b> essential steps, <b>discusses the intended range of measurements, what needs to be varied, including how raw data errors will be determined</b> , including a task risk analysis <b>focused on actions</b> .	Contains a measuring method containing <b>several</b> essential steps, <b>and what needs to be measured</b> , including a task risk analysis.	Contains <b>a measuring method, including a task risk analysis</b> .	Contains <b>no or a very limited</b> description of the measuring method <b>or no task risk analysis</b> .
		5	4	3	2	1
Repeatable analysis plan 1: Outcome	Based on a measuring plan students are able to write an analysis plan from which reasonably may be expected that it will deliver an answer to the research question.	Contains a <b>thorough</b> description of expected data ( <b>e.g. various complementary graphs</b> ) that provides a substantiated answer to <b>each (sub) research question</b> including substantiated error margins, <b>contains critical areas to test hypothesis</b> .	Contains a description of expected data that provides a <b>substantiated</b> answer to the research question <b>including substantiated error margins</b> .	Contains a description of expected data <b>that provides a justified answer to the research question</b> .	Contains <b>a description of expected data</b> .	Contains <b>no</b> description of expected data.
Repeatable analysis plan 2: Theory	houden?	A <b>broad</b> knowledge of current scientific theory is applied quantitatively and correctly in the analysis method. No irrelevant theory is mentioned.	<b>Thorough</b> knowledge of <b>current</b> scientific theory is <b>applied quantitatively and correctly</b> in the analysis method. No irrelevant theory is mentioned.	<b>Sufficient knowledge</b> of scientific theory is <b>used in the analysis method. No irrelevant theory is mentioned</b> .	Contains <b>some</b> scientific theory.	Contains <b>no or very limited</b> theory.
Repeatable analysis plan 3: Error analysis and fits		Contains clear description of <b>all</b> error analysis and fits and <b>quantitative discussion on influence on conclusion</b> .	Contains <b>clear</b> description of <b>most</b> error analysis <b>and</b> fits.	Contains <b>most</b> error analysis or fit description.	Contains <b>very limited</b> error analysis or fit description.	Contains <b>no</b> error analysis or fit description.
Repeatable analysis plan 4: Raw data to conclusions		Contains a <b>creative or clever analysis method which is coherent, logical and repeatable</b> from raw data to answering <b>each (sub) research question</b> .	Contains description of the analysis method <b>from raw data to answering the research question</b> .	Contains description of <b>most essential</b> parts of the analysis method.	Contains <b>very limited</b> description of the analysis method.	Contains <b>no</b> description of the analysis method.
		5	4	3	2	1