# Household versus natural environment

The consequences of daily decisions

# SAILS inquiry and assessment unit overview

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| --- | --- |
| **Name** | Household versus natural environment |
| **Key content/concepts** | * Properties of cleaning and washing agents * Ecotoxicity |
| **Level** | * Lower second level * Upper second level |
| **Inquiry skills assessed** | * Planning investigations * Developing hypotheses * Forming coherent arguments * Working collaboratively |
| **Assessment of scientific reasoning and scientific literacy** | * Scientific reasoning (considering the influence of various factors) * Scientific literacy (drawing conclusions using reasoned arguments and evidence, presenting scientific results, searching for information) |
| **Assessment methods** | * Classroom dialogue * Teacher observation * Peer-assessment * Self-assessment * Worksheets * Student devised materials (“natural” soaps and detergents, documentation of inquiry, final report) * Presentations * Other assessment items (true/false test) |

Table 1: Observation card for the assessment of engagement

|  |  |  |  |
| --- | --- | --- | --- |
| **Student name** | **Engagement (names of cleaning and washing agents)** | **Engagement (possible consequences of use of the chosen cleaning agent in the environment)** | **Prior knowledge (correctness of answer)** |
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Table 2: Student self-assessment

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| --- | --- | --- | --- |
| **Assessment criteria** | **Seldom** | **Sometimes** | **Often** |
| **1. Effort:** I contributed as much as I could to group discussions and to the work required |  |  |  |
| **2. Risk-taking:** I took risks by exploring something new to me |  |  |  |
| **3. Cooperation:** I worked cooperatively with other members of my group |  |  |  |
| **4. Respect:** I listened to others’ ideas, respected them, considered their points of view |  |  |  |
| **5. Collaboration:** I was flexible and willing to follow others but also took initiative when needed |  |  |  |
| My two most important strengths in group work (from the list above) are:  ..................................................................................................................................................................  Two skills in group work (from the list above) which I need to work on are:  .................................................................................................................................................................. | | | |

Table 3: Assessment of planning investigations

|  |  |  |  |
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| **Poor** | **Acceptable** | **Good** | **Excellent** |
| The group...  propose a cleaning agent and a plant, enumerate 1-2 steps of an investigation plan, | and...  propose a factor/variable which they would like to investigate, enumerate basic steps of an experimental plan, | and...  formulate a hypothesis, enumerate almost all steps of an experimental plan, consider standardisation of a procedure | and...  propose a consistent and complete procedure. |

Table 4: Assessment of scientific literacy – presentation of scientific data

|  |  |  |  |
| --- | --- | --- | --- |
| **Poor** | **Acceptable** | **Good** | **Excellent** |
| The group presents results only in descriptive way.  The group presents conclusions but neither completely nor correctly and without supportive evidence. | The group presents results in the form of a table or graph.  The group draws conclusions, but they are not completely correct. | The group presents results in the form of table and graph.  The group draws appropriate conclusions but they are not fully supported by arguments and evidence. | The group presents results in the form of table and graph.  The group draws appropriate conclusions that are supported using reasoned arguments and evidence and identifies possible sources of inconsistency. |

Table 5: Assessment of scientific literacy – searching for information

|  |  |  |  |
| --- | --- | --- | --- |
| **Poor** | **Acceptable** | **Good** | **Excellent** |
| The student finds out information from one Internet-based source, does not quote the source.  The student describes ecological tests improperly (in an incorrect or incomplete way). | The student finds consistent information from 1-2 sources, but does not pay attention to the independence of the sources and does not quote the source.  The student copies a description of ecological tests directly from the source. | The student finds consistent information from at least two substantially different sources and quotes all or almost all sources of information.  The student describes ecological tests correctly using his/her own words. | The student finds consistent information from at least two substantially different sources and quotes all sources of information.  The student describes ecological tests correctly using his/her own words. |