

# The schl package<sup>\*</sup>

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## Abstract

`schl` is a  $\text{\LaTeX}$  package that provides commands and environments suitable for document types that appear in a classroom environment. It's development is based on the Greek school practice, but it may be usefull in other contexts also.

## 1 Introduction

Worksheets and tests are common document types in a classroom. `schl` package comes with macros that facilitate the creation of these documents. It has list environments for questions, exercises and tasks. Other environments of the package can be used for tickable or multiple choice answers. There are also commands for typesetting solutions, hints and answers to exercises.

Furthermore, you can set the name of the teacher, subject, grade, headmaster, school, date, school year and use these to print school's logo or information about an exam. `schl` has commands to typeset headers for each document type, a macro for typing the points of an exercise and two commands for blank space. There is also a macro for typesetting a wish for good luck!

By default, `schl` prints all macros that accept text as undefined. As of this version (v1.0), Greek is the only supported language. You can set it with the option `greek`. Other languages can be supported by redefining package's internal macros.

`schl` loads the packages `fontspec`, `enumitem`, `mdframed` and `amsmath`. It is written for  $\text{\LaTeX}$ , but can be used by any system that supports `fontspec`.

## 2 Macros

### 2.1 Blank space

`\lowerdots`  
`\blankspace`

Usually, we need to designate blank space in a document. `schl` package has two

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<sup>\*</sup>This document corresponds to `schl` v1.0, dated 2019/11/07.

commands for this. The first one `\lowerdots [ $\langle length \rangle$ ]{ $\langle number \rangle$ }`, prints  $\langle number \rangle$  dots. Optional argument  $\langle length \rangle$  sets the deviation from base line. It's default value is  $-0.3ex$ .

```
1 \newcommand\lowerdots[2][-0.3ex]{%
2   \begingroup
3   \lccode`m=`.\relax
4   \raisebox{#1}{\lowercase\expandafter{\romannumeral\number\number#2 000}}}%
5   \endgroup
6 }
```

`\blankspace [ $\langle length \rangle$ ]{ $\langle line length \rangle$ }` prints a line with length  $\langle line length \rangle$ . The optional argument is the deviation from the base line and it's default value is  $-0.3ex$ . `\schl@rulethickness` is the default thickness for all `\blankspace` lines.

```
7 \newcommand\blankspace[2][-0.3ex]{%
8   \raisebox{#1}{\rule{#2}{\schl@rulethickness}}
9 }
```

## 2.2 Lists

`schl` package defines seven types of lists. These are `question`, `exercise`, `schltask`, `multichoice`, `tickchoice`, `truefalse` and `matchique`. `tickchoice` comes also with a starred version `tickchoice*`. All of them depend on the package `enumitem`.

`question` These environments are enumerate-like lists. List's `\item` is of the form  $\langle type \rangle$   
`exercise`  $\langle counter \rangle$ , where `type` is `\question@term` for `question`, `\exercise@term` for `exercise`  
`schltask` and `\task@term` for `schltask`.  $\langle counter \rangle$  is the internal counter of the environment.

```
10 \newlist{question}{enumerate}{1}
11 \setlist*[question]{%
12   align=left,
13   label=\normalsize\bf \question@term\ \arabic*.,
14   wide,
15   leftmargin=0pt,
16   labelindent=0pt
17 }

18 \newlist{exercise}{enumerate}{1}
19 \setlist*[exercise]{%
20   align=left,
21   label=\normalsize\bf\exercise@term\ \arabic*.,
22   wide,
23   leftmargin=0pt,
24   labelindent=0pt
25 }

26 \newlist{schltask}{enumerate}{1}
27 \setlist*[schltask]{%
28   align=left,
29   label=\normalsize\bf\letterspace{\defaultletterspace}\task@term\ \Alph*,
30   wide,
31   leftmargin=0pt,
32   labelindent=0pt
```

```

33 }

\letterspace    The macro \letterspace{⟨number⟩} is used to set the horizontal space of adjacent
                characters in a word. It is based on the \addfontfeature macro from the package
                fontspec. The argument ⟨number⟩ is a percentage of the font size. In schl package is
                used to set the space between capital word letters.
34 \def\letterspace#1{\addfontfeature{LetterSpace=#1}}

multichoice    The multichoice environment is used to typeset multiple choice answers.
35 \newlist{multichoice}{enumerate*}{1}
36 \setlist*[multichoice]{
37   labelindent=\parindent,
38   label=\Alph*.,
39   itemjoin=\hspace{\fill},
40   before=\hspace{\fill},
41   after=\hspace{\fill}
42 }

tickchoice    The environments tickchoice and tickchoice* are variants of the itemize list.
tickchoice*    For both cases, each item is preceded by a square. tickchoice stacks items vertically,
43 \newlist{tickchoice}{itemize}{1}
44 \setlist[tickchoice]{labelindent=\parindent,label={\large$\square$}}
while tickchoice* stacks them horizontally.
45 \newlist{tickchoice*}{itemize*}{1}
46 \setlist*[tickchoice*]{
47   labelindent=\parindent,
48   label={\large$\square$},
49   itemjoin=\hspace{\fill},
50   before=\hspace{\fill},
51   after=\hspace{\fill}
52 }

truefalse    truefalse is a variant of the enumerate environment. Each \item is divided in two
                parts. The first part is the text that follows the \item macro. The second part is a
                \parbox that prints \trueabbr@term and \falseabbr@term.
53 \newlist{truefalse}{enumerate}{1}
54 \setlist[truefalse]{label={\bf \arabic*.,}%
55   before*={%
56     \let\defaultitem\item%           Save the standard definition of \item in a macro.
57     \toggletrue{first}%             Set the first toggle with initial value true.
58     \def\item{%
59       \iftoggle{first}{%
60         \togglefalse{first}%         Set the first toggle to take the value false.
61         \defaultitem\begin{minipage}[t]{0.8\linewidth minus \truefalselength}%
62       }{%
63         \end{minipage}\hfill\truefalselabel\defaultitem%
64         \begin{minipage}[t]{0.8\linewidth minus \truefalselength}%
65       }
66     }% new, temporary definition of \item
67   },

```

```

68   after*={%   This takes care of adding the fill for the final item on
69   %           the list and just makes sure that \item is reset to its standard definition
70   \end{minipage}\hfill\truefalse\label% fill for final item in list
71   \let\item\defaultitem% restore standard definition of \item
72 }%
73 }

```

**matchingque**      The macro `\matchingque{⟨CSV⟩}{⟨CSV⟩}` is used to typeset matching questions. `⟨CSV⟩` are comma separated values. The `⟨CSV⟩`s of the first argument are the parts of the matching questions that will be print in the left column. Similarly, the `⟨CSV⟩` of the second argument are going to be printed on the right column of the matching questions.

```

74 \newcommand\matchingque[3][300pt]{%
75   \begin{center}
76     \parbox[c]{#1}{
77       \parbox[c]{\leftmatchwidth}{%
78         \begin{leftmatching}
79           \@for\tmp:=#2%
80           \do{%
81             \item \tmp
82           }
83         \end{leftmatching}
84       }\hfill%
85       \parbox[c]{\rightmatchwidth}{%
86         \begin{rightmatching}
87           \@for\tmp:=#3%
88           \do{%
89             \item \tmp
90           }
91         \end{rightmatching}
92       }
93     }
94   \end{center}
95 }

```

**leftmatching**      Environments `leftmatching` and `rightmatching` are used to typeset each column  
**rightmatching** in `\matchingque`.

```

96 \newlist{leftmatching}{enumerate}{1}
97 \newlist{rightmatching}{enumerate}{1}
98 \setlist*[leftmatching]{label=\bf\Alph*.}
99 \setlist*[rightmatching]{label=\bf\arabic*.}

```

## 2.3 Answers, solutions and hints

**\answer**      Macro `\answer{⟨text⟩}` prints (`\answerabbr@term \meta{⟨text⟩}`) at the right end of the current line.

```

100 \newcommand\answer[1]{%
101   \hfill{\footnotesize (\answerabbr@term: #1)}
102 }

```

**\solution**      Macro `\solution{⟨text⟩}` is used to typeset the solution of an exercise.

```

103 \newcommand\solution[1]{%
104   \par\noindent\phantom{.}\hfill\textbf{\solution@term}\hfill\phantom{.}\par%
105   \noindent #1
106 }

\hint      sch1 provides the macro \hint{<text>} for typesetting exercise hints.
107 \newcommand\hint[1]{%
108   \par{\scriptsize\noindent\textbf{\hint@term:} #1}%
109 }

\deadline  A feature of homework assignments is a deadline date. \deadline{<date>} prints
\deadline@term followed by argument <date>.
110 \newcommand\deadline[1]{%
111   \noindent{\bf\normalsize\deadline@term}: #1}
112 }

\remark    Add a remark in a document. \remark{<text>} prints \remark@term followed by
argument <text>.
113 \newcommand\remark[1]{%
114   \noindent{\textbf{\normalsize\remark@term}: #1}
115 }

\reminder  Add a reminder in a document. \reminder{<text>} prints \reminder@term followed
by argument <text>.
116 \newcommand\reminder[1]{%
117   \noindent{\textbf{\normalsize\reminder@term}: #1}
118 }

```

## 2.4 Titles and headers

```

\heading   Common document types in a school environment are the worksheet, various tests
and final written exams. The macro \heading{<text>} gives a generic header for all
these documents.
119 \newcommand\heading[1]{%
120   \begin{center}
121     {\bf\large #1}
122   \end{center}
123 }

\worksheethd  Macro \worksheethd{<text>} sets the title of a worksheet. It appends <text> to
\worksheet@term.
124 \newcommand\worksheethd[1]{%
125   \heading{\worksheet@term\ #1}
126 }

\examhd     \examhd[<text>]{<text>} is used to set the title of tests. The optional argument has
the default value \termtest@term.
127 \newcommand\examhd[2][\termtest@term]{%
128   \heading{#1 #2}
129 }

```

`\finalexamhd` Titles for end year exams have a standardized form in Greek schools. `\exams@term` is followed by information about the exam. Then comes `\period@term` with the exam period after it. `\finalexamhd{<info>}{<period>}` is used for these cases.

```

130 \newcommand\finalexamhd[2]{%
131   \heading{\letterspace{\defaultletterspace} #1 \exams@term\[\!0.5ex] \period@term\ #2}
132 }

```

`\schl@framedbox` `\schl@framedbox{<text>}` prints `<text>` in a centered frame box. It is used by `\theorypart` and `\exercisepart`.

```

133 \newcommand\schl@framedbox[1]{%
134   \begin{center}
135     \fbox{\large\bf\letterspace{\defaultletterspace} #1 }%
136   \end{center}
137 }

```

`\theorypart` Sometimes theory and exercise sections constitute a written test. Macros `\theorypart` and `\exercisepart` print headers for those parts.

```

138 \newcommand\theorypart{%
139   \schl@framedbox{\theoryheader@term\!}
140 }

```

and

```

141 \newcommand\exercisepart{%
142   \schl@framedbox{\exerciseheader@term\!}
143 }

```

## 2.5 School information

`\school` The macros `\school{<text>}`, `\headmaster{<name>}`, `\teacher{<name>}`, `\subject{<text>}`, `\headmaster` `\grade{<text>}`, `\schoolyear{<year>}`, `\schldate{<date>}`, `\examtime{<time>}` define and set the value of internal macros.

```

144 \newcommand\school[1]{\def\schl@school{#1}}
145 \newcommand\headmaster[1]{\def\schl@headmaster{#1}}
146 \newcommand\teacher[1]{\def\schl@teacher{#1}}
147 \newcommand\subject[1]{\def\schl@subject{#1}}
148 \newcommand\grade[1]{\def\schl@grade{#1}}
149 \newcommand\schoolyear[1]{\def\schl@schoolyear{#1}}
150 \newcommand\schldate[1]{\def\schl@schldate{#1}}
151 \newcommand\examtime[1]{\def\schl@examtime{#1}}

```

`\authorityi` In a similar vein, `\authorityi{<text>}`, `\authorityii{<text>}` and `\authorityiii{<text>}` define the internal macros `\schl@authorityi`, `\schl@authorityii` and `\schl@authorityiii`.

```

152 \newcommand\authorityi[1]{\def\schl@authorityi{#1}}
153 \newcommand\authorityii[1]{\def\schl@authorityii{#1}}
154 \newcommand\authorityiii[1]{\def\schl@authorityiii{#1}}

```

## 2.6 Other macros for tests

`\points` `\points[<macro>]{<number>}` is used to designate the points of an exercise.

{*number*} is the number of points for the current exercise, while [*macro*] can be used to control the space just before the points.

```
155 \newcommand{\points}[2][\hfill]{%
156 #1(\textbf{\footnotesize \points@term{#2}\ #2})
157 }
```

`\fullname`      `\fullname{<text>}` prints `\fullname@term` followed by `<text>`.

```
158 \newcommand\fullname[1]{%
159 \noindent{\normalsize\fullname@term :} #1
160 }
```

`\datefield`      Similarly, `\datefield{<text>}` prints `\date@term` with `<text>` after it.

```
161 \newcommand\datefield[1][0]{%
162 \noindent{\normalsize\date@term :}
163 }
```

`\duration`      `\datefield{<duration>}` prints `\duration@term` with `<duration>` after it.

```
164 \newcommand\duration[1]{%
165 \noindent{\normalsize\textbf{\duration@term}: #1}
166 }
```

`\schoollogo`      `\schoollogo{<width>}` prints `\schl@school`, `\schl@grade`, `\schl@subject` and `\schl@teacher`. `<width>` is the length of the `\parbox`.

```
167 \def\schoollogo#1{%
168 \parbox[t]{#1}{%
169 \schl@school\\%
170 \schl@grade\\%
171 \schl@subject\\%
172 \schl@teacher
173 }
174 }
```

`\authoritylogo`      `\authoritylogo[<number>]` prints `\sch@authorityi`, `\sch@authorityii`, `\sch@authorityiii` and `\schl@school`. Argument `<number>` is a multiplier for `\baselineskip`. This spaces is added above macro.

```
175 \newcommand\authoritylogo[1][1.5]{%
176 \noindent\parbox[t][\height]{0.4\textwidth}{%
177 \centering%
178
179 \vspace{#1\baselineskip}
180
181 {\schl@authorityi}
182
183 \vspace{3\lineskip}
184
185 {\footnotesize\schl@authorityii}
186
187 \vspace{2\lineskip}
188
189 {\footnotesize\schl@authorityiii}
190 }
```

```

191     \vspace{3\lineskip}
192
193     {\small\letterspace{\defaultletterspace}\MakeUppercase{\schl@school}}
194 }
195 }

\examdetails Written exam documents contain information about the period of the exam, subject,
\examdetailsii grade, writer of the test, supervisors of the exam and date. schl package has the macros
\examdetails{\text} and \examdetailsii for printing this information. Argument
\text of \examdetails is the exam period.

196 \newcommand\examdetails[2][3pt]{%
197   \parbox[t]{#2}{
198     \begin{mdframed}[linewidth=#1]
199       \normalsize%
200       {%
201         \bf\letterspace{\defaultletterspace}%
202         \schoolyearabbr@term:\hspace{3pt}\schl@schoolyear
203       }\\[1.0ex]
204       \textbf{\grade@term:}\hspace{3pt}\schl@grade\\[1.0ex]
205       \textbf{\subject@term:}\hspace{3pt}\schl@subject \\[1.0ex]
206       \textbf{\testwriter@term:}\hspace{3pt}\schl@teacher\\[1.0ex]
207       \textbf{\testsupervisor@term:}\\[1.0ex]
208       \textbf{\date@term:}\hspace{3pt}\schl@schldate
209     \end{mdframed}
210   }
211 }

and

212 \newcommand\examdetailsii{%
213   \parbox[t]{0.53\linewidth}{%
214     \begin{center}%
215       \underline{\bf\letterspace{\defaultletterspace}\schoolyear@term\ \schl@schoolyear}%
216     \end{center}
217     \begin{tabular}{|r|c|r|c|}
218       \hline
219       {\bf\letterspace{\defaultletterspace}\lastname@term:} & \multicolumn{3}{|c|}{ } \\
220       \hline
221       {\bf\letterspace{\defaultletterspace}\name@term:} & \multicolumn{3}{|c|}{ } \\
222       \hline
223       {\bf\letterspace{\defaultletterspace}\examnoabbr@term:} & %
224       & {\bf\letterspace{\defaultletterspace}\MakeUppercase{\grade@term:}} & %
225       & \schl@grade \\
226       \hline
227       {\bf\letterspace{\defaultletterspace}\MakeUppercase{\subject@term:}} & %
228       & \multicolumn{2}{|c|}{\schl@subject} \\
229       \hline
230       {\bf\letterspace{\defaultletterspace}\MakeUppercase{\date@term:}} & \schl@schldate
231       & {\bf\letterspace{\defaultletterspace}\time@term:} & %
232       & \schl@examtime\\
233       \hline

```



```

234     \end{tabular}
235   }
236 }

\signatures      Some types of written tests end with the names of the headmaster and the teacher(s)
                  followed by handwritten signatures. \signatures[⟨role⟩]{⟨signer(s)⟩} prints the name(s)
                  of the ⟨signer(s)⟩ under a line with the ⟨role⟩ of the signer(s). \signatureslength is
                  the length of the \signatures block.

237 \newcommand\signatures[2][\headmaster@term]{%
238   \parbox[t]{\signatureslength}{%
239     \setlength \baselineskip{\signaturelineskip}
240     \begin{center}
241       #1 \\\ #2
242     \end{center}
243   }
244 }

\wish            \wish prints \schl@wish, a default wish for tests.

245 \newcommand\wish[1][\schl@wish]{%
246   \begin{center}
247     {\LARGE\bf #1}
248   \end{center}
249 }

```