

# 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 }



## 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.
113 \newcommand\heading[1]{%
114   \begin{center}
115     {\bf\large #1}
116   \end{center}
117 }

\worksheethd      Macro \worksheethd{<text>} sets the title of a worksheet. It appends <text> to
\worksheet@term.
118 \newcommand\worksheethd[1]{%
119   \heading{\worksheet@term\ #1}
120 }

\examhd      \examhd{<text>}[<text>] is used to set the title of tests. The optional argument has
the default value \termtest@term.
121 \newcommand\examhd[2][\termtest@term]{%
122   \heading{#1 #2}
123 }

\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.
124 \newcommand\finalexamhd[2]{%
125   \heading{\letterspace{\defaultletterspace} #1 \exams@term\[\[0.5ex] \period@term\ #2}
126 }

\schl@framedbox      \schl@framedbox{<text>} prints <text> in a centered frame box. It is used by
\theorypart and \exercisepart.
127 \newcommand\schl@framedbox[1]{%
128   \begin{center}
129     \fbox{\large\bf\letterspace{\defaultletterspace} #1} }%

```

```

130 \end{center}
131 }

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

132 \newcommand\theorypart{%
133   \schl@framedbox{\theoryheader@term\!}
134 }

and

135 \newcommand\exercisepart{%
136   \schl@framedbox{\exerciseheader@term\!}
137 }

```

## 2.5 School information

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

```

\school      138 \newcommand\school[1]{\def\schl@school{#1}}
\headmaster  139 \newcommand\headmaster[1]{\def\schl@headmaster{#1}}
\teacher     140 \newcommand\teacher[1]{\def\schl@teacher{#1}}
\subject    141 \newcommand\subject[1]{\def\schl@subject{#1}}
\grade      142 \newcommand\grade[1]{\def\schl@grade{#1}}
\schoolyear 143 \newcommand\schoolyear[1]{\def\schl@schoolyear{#1}}
\schldate   144 \newcommand\schldate[1]{\def\schl@schldate{#1}}
\examtime   145 \newcommand\examtime[1]{\def\schl@examtime{#1}}

\authorityi  In a similar vein, \authorityi{<text>}, \authorityii{<text>} and \authorityiii{<text>}
\authorityii define the internal macros \schl@authorityi, \schl@authorityii and \schl@authorityiii.
\authorityiii
146 \newcommand\authorityi[1]{\def\schl@authorityi{#1}}
147 \newcommand\authorityii[1]{\def\schl@authorityii{#1}}
148 \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.

```

149 \newcommand\points[2][\hfill]{%
150 #1(\textbf{\footnotesize \points@term{#2}\ #2})
151 }

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

152 \newcommand\fullname[1]{%
153   \noindent{\normalsize\fullname@term :} #1
154 }

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

155 \newcommand\datefield[1][0]{%

```

```

156 \noindent{\normalsize\date@term :}
157 }

\schoollogo \schoollogo{<width>} prints \schl@school, \schl@grade, \schl@subject
and \schl@teacher. <width> is the length of the \parbox.
158 \def\schoollogo#1{%
159 \parbox[t]{#1}{%
160 \schl@school\\%
161 \schl@grade\\%
162 \schl@subject\\%
163 \schl@teacher
164 }
165 }

\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.
166 \newcommand\authoritylogo[1][1.5]{%
167 \noindent\parbox[t][\height]{0.4\textwidth}{%
168 \centering%
169
170 \vspace{#1\baselineskip}
171
172 {\schl@authorityi}
173
174 \vspace{3\lineskip}
175
176 {\footnotesize\schl@authorityii}
177
178 \vspace{2\lineskip}
179
180 {\footnotesize\schl@authorityiii}
181
182 \vspace{3\lineskip}
183
184 {\small\letterspace{\defaultletterspace}\MakeUppercase{\schl@school}}
185 }
186 }

\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.
187 \newcommand\examdetails[2][3pt]{%
188 \parbox[t]{#2}{
189 \begin{mdframed}[linewidth=#1]
190 \normalsize%
191 {%
192 \bf\letterspace{\defaultletterspace}%
193 \schoolyearabbr@term:\hspace{3pt}\schl@schoolyear

```

```

194 }\\[1.0ex]
195 \textbf{\grade@term:}\hspace{3pt}\schl@grade\\[1.0ex]
196 \textbf{\subject@term:}\hspace{3pt}\schl@subject \\[1.0ex]
197 \textbf{\testwriter@term:}\hspace{3pt}\schl@teacher\\[1.0ex]
198 \textbf{\testsupervisor@term:}\\[1.0ex]
199 \textbf{\date@term:}\hspace{3pt}\schl@schldate
200 \end{mdframed}
201 }
202 }
and
203 \newcommand\examdetailsii{%
204 \parbox[t]{0.53\linewidth}{%
205 \begin{center}%
206 \underline{\bf\letterspace{\defaultletterspace}\schoolyear@term\ \schl@schoolyear}%
207 \end{center}
208 \begin{tabular}{|r|c|r|c|}
209 \hline
210 {\bf\letterspace{\defaultletterspace}\lastname@term:} & \multicolumn{3}{|c|}{ } \\
211 \hline
212 {\bf\letterspace{\defaultletterspace}\name@term:} & \multicolumn{3}{|c|}{ } \\
213 \hline
214 {\bf\letterspace{\defaultletterspace}\examnoabbr@term:} & %
215 & {\bf\letterspace{\defaultletterspace}\MakeUppercase{\grade@term:}} & %
216 & \schl@grade \\
217 \hline
218 {\bf\letterspace{\defaultletterspace}\MakeUppercase{\subject@term:}} & %
219 & \multicolumn{2}{|c|}{\schl@subject} \\
220 \hline
221 {\bf\letterspace{\defaultletterspace}\MakeUppercase{\date@term:}} & \schl@schldate
222 & {\bf\letterspace{\defaultletterspace}\time@term:} & %
223 & \schl@examtime\\
224 \hline
225 \end{tabular}
226 }
227 }

```

**\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.

```

228 \newcommand\signatures[2][\headmaster@term]{%
229 \parbox[t]{\signatureslength}{%
230 \setlength \baselineskip{\signaturelineskip}
231 \begin{center}
232 #1 \\ #2
233 \end{center}
234 }
235 }

```

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



```

236 \newcommand\wish[1][\schl@wish]{%
237   \begin{center}
238     {\LARGE\bf #1}
239   \end{center}
240 }

```