

# 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=\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=\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=\bf \letterspace{\defaultletterspace}\task@term\ \arabic*,
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 sch1 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\truefalselabel% fill for final item in list
71   \let\item\defaultitem% restore standard definition of \item
72 }%
73 }

```

**truefalse\***      truefalse\* is based on the truefalse environment. A line with \trueabbr@term and \falseabbr@term at the end prepends the list of items. In contrast with the truefalse environment, each \item ends with a pair of squares.

```

74 \newlist{truefalse*}{enumerate}{1}
75 \setlist{truefalse*}{label={\bf \arabic*},}%
76   before*=%
77   \hfill\truefalselabel%       Print first line only with the terms True - False
78   \let\defaultitem\item%       Save the standard definition of \item in a macro.
79   \toggletrue{first}%         Set the first toggle with initial value true.
80   \def\item{%
81     \iftoggle{first}{%
82       \togglefalse{first}%      Set the first toggle to take the value false.
83       \defaultitem\begin{minipage}[t]{0.8\linewidth minus \truefalselength}%
84     }{%
85       \end{minipage}\hfill\truefalsesquares\defaultitem%
86       \begin{minipage}[t]{0.8\linewidth minus \truefalselength}%
87     }
88   }% new, temporary definition of \item
89 },
90   after*=%   This takes care of adding the fill for the final item on
91   %         the list and just makes sure that \item is reset to its standard definition
92   \end{minipage}\hfill% fill for final item in list
93   \truefalsesquares
94   \let\item\defaultitem% restore standard definition of \item
95 }%
96 }

```

**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.

```

97 \newcommand\matchingque[3][300pt]{%
98   \begin{center}
99     \parbox[c]{#1}{
100       \parbox[c]{\leftmatchwidth}{%
101         \begin{leftmatching}
102           \@for\tmp:=#2%
103           \do{%
104             \item \tmp
105           }
106         \end{leftmatching}
107       }\hfill%
108       \parbox[c]{\rightmatchwidth}{%

```

```

109      \begin{rightmatching}
110      \@for\tmp:=#3%
111      \do{%
112      \item \tmp
113      }
114      \end{rightmatching}
115  }
116 }
117 \end{center}
118 }

```

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

```

119 \newlist{leftmatching}{enumerate}{1}
120 \newlist{rightmatching}{enumerate}{1}
121 \setlist*[leftmatching]{label=\bf\Alph*.}
122 \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.

```

123 \newcommand\answer[2][\hfill\footnotesize]{%
124   {#1 (\answerabbr@term: #2)}
125 }

```

`\solution`      Macro `\solution{<text>}` is used to typeset the solution of an exercise.

```

126 \newcommand\solution[1]{%
127   \par\noindent\phantom{.}\hfill\textbf{\solution@term}\hfill\phantom{.}\par%
128   \noindent #1
129 }

```

`\hint`      `schl` provides the macro `\hint{<text>}` for typesetting exercise hints.

```

130 \newcommand\hint[2][\par\noindent\footnotesize]{%
131   {#1\textbf{\hint@term:} #2}%
132 }

```

`\deadline`      A feature of homework assignments is a deadline date. `\deadline{<date>}` prints `\deadline@term` followed by argument `<date>`.

```

133 \newcommand\deadline[2][\noindent\bf]{%
134   {#1\deadline@term:} #2%
135 }

```

`\remark`      Add a remark in a document. `\remark{<text>}` prints `\remark@term` followed by argument `<text>`.

```

136 \newcommand\remark[2][\noindent\bf]{%
137   {#1\remark@term:} #2%
138 }

```

`\reminder`      Add a reminder in a document. `\reminder{<text>}` prints `\reminder@term` followed by argument `<text>`.

```

139 \newcommand\reminder[2][\noindent\bf]{%
140   {#1\reminder@term}: #2%
141 }

```

## 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.

```

142 \newcommand\heading[1]{%
143   \begin{center}
144     {\bf\large #1}
145   \end{center}
146 }

```

**\worksheethd** Macro `\worksheethd{<text>}` sets the title of a worksheet. It appends `<text>` to `\worksheet@term`.

```

147 \newcommand\worksheethd[1]{%
148   \heading{\worksheet@term\ #1}
149 }

```

**\examhd** `\examhd[<text>]{<text>}` is used to set the title of tests. The optional argument has the default value `\termtest@term`.

```

150 \newcommand\examhd[2][\termtest@term]{%
151   \heading{#1 #2}
152 }

```

**\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.

```

153 \newcommand\finalexamhd[2]{%
154   \heading{\letterspace{\defaultletterspace} #1 \exams@term\ [0.5ex] \period@term\ #2}
155 }

```

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

```

156 \newcommand\schl@framedbox[1]{%
157   \begin{center}
158     \fbox{\large{\bf\letterspace{\defaultletterspace} #1} }%
159   \end{center}
160 }

```

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

```

161 \newcommand\theorypart{%
162   \schl@framedbox{\theoryheader@term\!}
163 }
and
164 \newcommand\exercisepart{%
165   \schl@framedbox{\exercisepart@term\!}
166 }

```

## 2.5 School information

`\school`      The macros `\school{<text>}`, `\headmaster{<name>}`, `\teacher{<name>}`, `\subject{<text>}`,  
`\headmaster`    `\grade{<text>}`, `\schoolyear{<year>}`, `\setdate{<date>}`, `\examtime{<time>}` define  
`\teacher`      and set the value of internal macros.  
`\subject`      167 `\newcommand\school[1]{\def\schl@school{#1}}`  
`\grade`        168 `\newcommand\headmaster[1]{\def\schl@headmaster{#1}}`  
`\schoolyear`    169 `\newcommand\teacher[1]{\def\schl@teacher{#1}}`  
`\setdate`      170 `\newcommand\subject[1]{\def\schl@subject{#1}}`  
`\examtime`     171 `\newcommand\grade[1]{\def\schl@grade{#1}}`  
               172 `\newcommand\schoolyear[1]{\def\schl@schoolyear{#1}}`  
               173 `\newcommand\setdate[1]{\def\schl@date{#1}}`  
               174 `\newcommand\examtime[1]{\def\schl@examtime{#1}}`

`\authorities`    In a similar vein, `\authorities{<text>}` is used to define the internal macro  
`\schl@authorities`.  
               175 `\newcommand\authorities[1]{\def\schl@authorities{#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.  
               176 `\newcommand\points[2][\hfill\bf\footnotesize]{%`  
               177 `{#1\points@term{#2} #2)}`  
               178 }

`\fullname`      `\fullname{<text>}` prints `\fullname@term` followed by `<text>`.  
               179 `\newcommand\fullname[2][\noindent\rmfamily]{%`  
               180 `{#1\fullname@term}: #2%`  
               181 }

`\datefield`     Similarly, `\datefield{<text>}` prints `\date@term` with `<text>` after it.  
               182 `\newcommand\datefield[2][\noindent\rmfamily]{%`  
               183 `{#1\date@term}: #2%`  
               184 }

`\getdate`        `\getdate` prints `\schl@date`. The last macro can be set with `\setdate`.  
               185 `\newcommand\getdate{\schl@date}`

`\duration`       `\duration{<duration>}` prints `\duration@term` with `<duration>` after it.  
               186 `\newcommand\duration[2][\noindent\bf]{%`  
               187 `{#1\duration@term}: #2%`  
               188 }

`\schoollogo`     `\schoollogo{<width>}` prints `\schl@school`, `\schl@grade`, `\schl@subject`  
               and `\schl@teacher`. `<width>` is the length of the `\parbox`.  
               189 `\def\schoollogo#1{%`  
               190 `\parbox[t]{#1}{%`  
               191 `\schl@school\\%`  
               192 `\schl@grade\\%`

```

193     \schl@subject\\%
194     \schl@teacher
195 }
196 }

\authoritylogo      \authoritylogo[⟨number⟩] prints \sch@authorities and \schl@school. Argument
                    ⟨number⟩ is a multiplier for \baselineskip. This spaces is added above the macro.
197 \newcommand\authoritylogo[1][1.5]{%
198   \noindent\parbox[t][\height]{0.4\textwidth}{%
199     \centering%
200
201     \vspace{#1\baselineskip}
202
203     {\schl@authorities}
204
205     \vspace{3\lineskip}
206
207     {\small\letterspace{\defaultletterspace}\MakeUppercase{\schl@school}}
208   }
209 }

\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 ⟨role⟩.
                    After it follow the name(s) of the ⟨signer(s)⟩, one per line. ⟨Signer(s)⟩ is a comma
                    separated list of values. The default value for ⟨role⟩ is \headmaster@term. \signatureslength
                    is the length of the \signatures block and \signatureslineskip is the length
                    between adjacent lines.
210 \newcommand\signatures[2][\headmaster@term]{%
211   \parbox[t]{\signatureslength}{%
212     \setlength \baselineskip{\signaturelineskip}
213     \begin{center}
214       #1%
215       \@for\arg:=#2
216       \do {%
217         \\%
218         \arg%
219       }
220     \end{center}
221   }
222 }

\wish              \wish prints \schl@wish, a default wish for tests.
223 \newcommand\wish[1][\schl@wish]{%
224   \begin{center}
225     {\LARGE\bf #1}
226   \end{center}
227 }

```