

Suggested Dot Points for Teachers - Software

The Ed-Blocs website is <http://www.ed-blocs.com> with quick links and downloads.

Students work individually on a Mac or PC connected to the Internet and login to <http://ed-blocs.com/software>.

The software is intended to be self-paced making it good to allocate as homework as it requires no school resources and no teacher time.

To get individual student report cards they need to be set up in the admin login area. <http://ed-blocs.com/software/administrator/>

If your school already uses Ed-Blocs see your school Ed-Blocs administrator or if they haven't yet, request your school and give the name & email of your proposed school administrator via email to pgkpeter@gmail.com.

Some students are hands-on learners and the hardware allows them to show themselves. If the school has the Ed-blocs hardware, there is an enhanced learning possibility. There is a download student work book and teacher manual on the website for the first five simple lessons for case one. If a school has a full set then students can set up and test each lesson after they have done the exercises. Students love hands on learning.

Suggested Dot Points for Teachers - Hardware

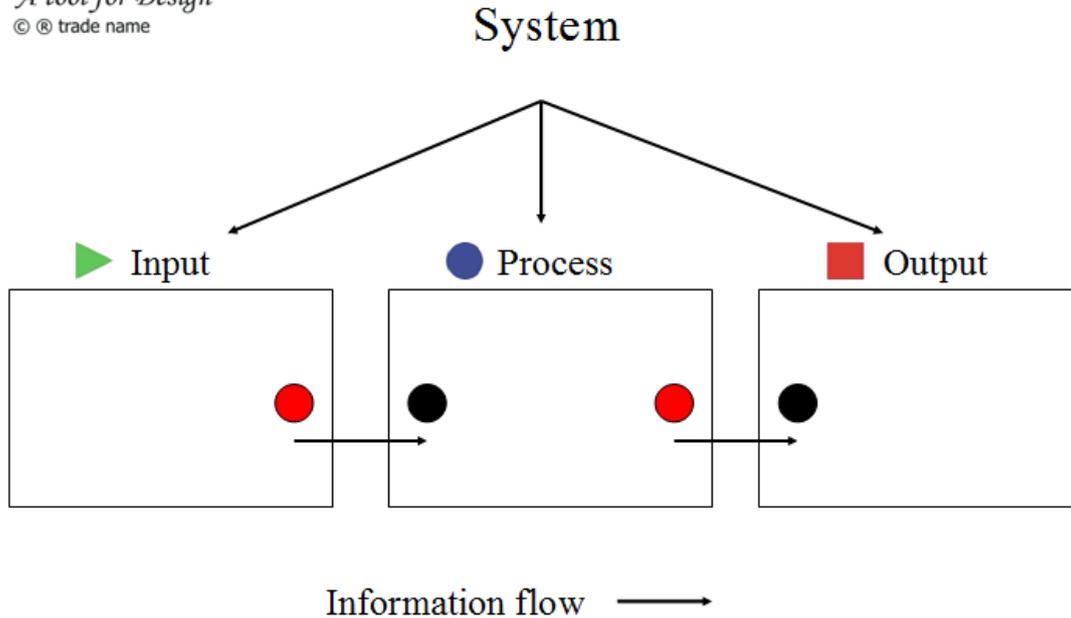
Make a team of six or less, a team of four is ideal.

Give each team one of the following

- 1) Talking stick (wooden spoon) - optional
- 2) Throwing "dice"
- 3) Name Tags (these are included to print on adhesive printing paper)

Ed-Bloc Investigation Lesson Structure

- Organisation of roles
The throwing of the dice determines the leader – highest number becomes the leader (only those who haven't been a leader get to roll the dice). The leader takes control of the team and delegates by his/her decision whom does which role (Data Recorder, Handler, Handler's assistant, Card reader, Results presenter). It is the leader's responsibility to ensure everyone has a chance to express their ideas to the team and that only one person speaks at a time by deciding who has the talking stick (wooden spoon).
- Block hands-on investigation - teams explore the Ed-Bloc without the Ed-Blocs information card. Allow students to explore the Ed-Bloc(s) discovering all the combinations available to get it to function. Get groups to explain their findings, then hand out the Ed-Bloc information card.
- When all Ed-Blocs needed for a design challenge has been investigated give the design challenge to the team leader.
- Students must present their hypothesis solution to the teacher using the Ed-Blocs info cards before, bring allowed to test and possibly fix their design.



TEAM / GROUP	ROLES
TEAM LEADER	The leader is chosen by rolling a dice - highest number becomes the leader. Only those who haven't been a leader get to roll the dice. The leader takes control of the team and delegates by his decision who does which role. It is his responsibility to ensure everyone has a chance to express ideas to the team and that only one person speaks at a time - deciding who has the talking stick (wooden spoon).
DATA RECORDER	Records all information / results for the team on this work sheet.
CARD READER	Holds and reads Ed-blocs cards for the team. Note Ed-blocs information cards are not to be used during the teams first attempt. Students are to work as a team to explore its function for themselves.
Ed-blocs HANDLER	Controls all handling and connecting of Ed-blocs for the team.
HANDLER ASSISTANT	Assists and takes directions from the Ed-blocs HANDLER
RESULT PRESENTER and TIME KEEPER	Presents the teams findings and conclusions to the teacher and other teams / students. Advises the team the time left. For example teams are allocated 15 minutes to explore an Ed-blocs, so each 5 minute express to the team 10 minutes to go, 5 minutes to go, etc.

STOPWATCH TEACHER MANUAL

Ed-Blocs™ Admin Login

Ed-Blocs
TOOLS FOR LEARNING

Admin Login

Enter a valid user name and password

User Name

Password

Login

Admin log in webpage

A school administrator sets up classes and teacher login's
Teachers then create student login's and activate lessons the class see (homework).

Ed-Blocs™ - Tools for Learning

What are Ed-Blocs?
Click here to see our official press release (PDF)
Click here to see the recent newspaper article (PDF)

Sign in
Name:
Password:
Sign in!

Create a free account
Don't have an Ed-Blocs profile yet?
Contact Us

Welcome to Ed-Blocs!

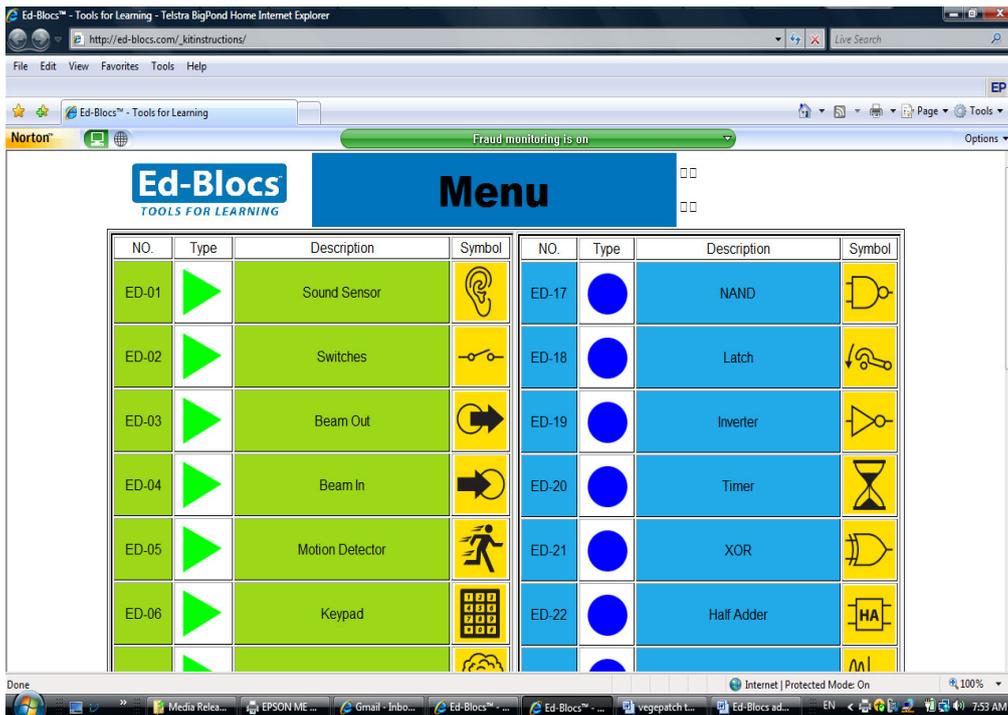
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TOOLS FOR LEARNING

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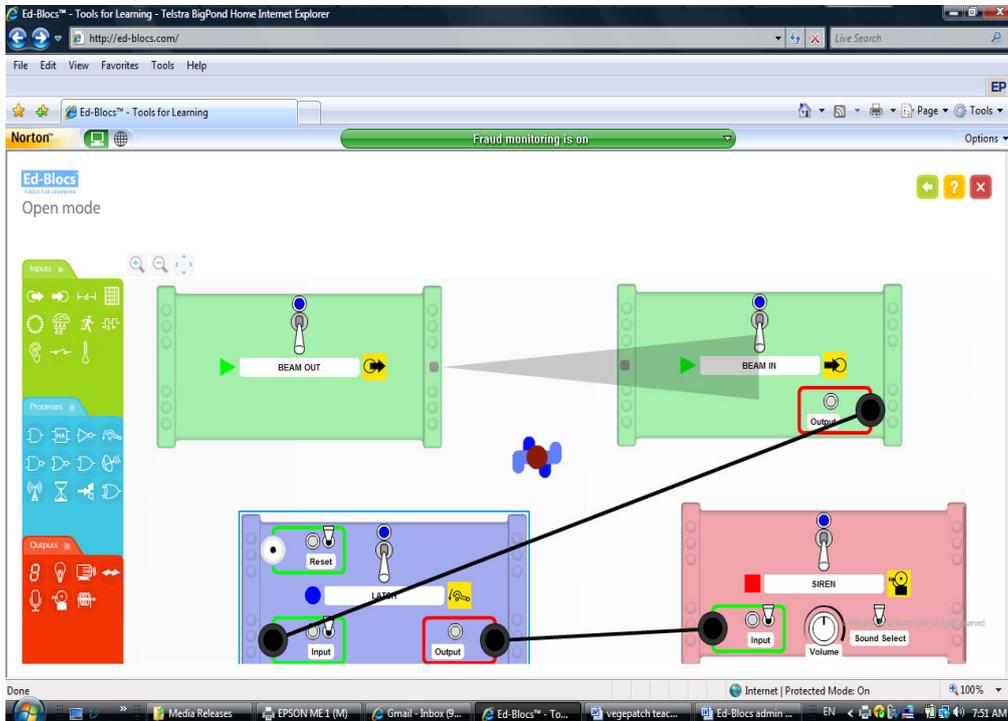
Student's login webpage

Self-paced lessons – no school resources and no teacher time.

STOPWATCH TEACHER MANUAL



All 32 Ed-Blocs circuit boards are available as kits so teachers and students can build their real world design challenge solutions and actually use them. The kit info also helps students to understand the components that together achieve each block's unique function.



All Ed-Blocs are simulated and connect in software. Leads delete automatically when not connected to anything and to delete a block left mouse click on it and hit the delete button.

Frequently Asked Questions

What are Ed-Blocs™?

Ed-Blocs are a combination of 32 individually powered electronic building blocks, each with a unique and powerful function. They engage enquiring minds and have a supporting software that requires no school resources and no teacher time.

Are Ed-Blocs™ safe for student use?

Ed-Blocs have been designed for use by primary school students. They are safe, robust and effective at promoting self - logical thinking and team.

What age ranges are Ed-Blocs™ designed for?

The pre-assembled Ed-Blocs hardware is probably be of most benefit to “Middle Phase” students from around Year 4-6. Depending upon the outcomes that you are looking for, they could also benefit student’s right up to Year 11 or 12 as the design and assembly notes for building electronics kits of duplicate Ed-Blocs™ are included on the website. So you can learn, design, simulate, prototype here.

What subject/curriculum are the Ed-Blocs™ suited to?

Ed-Blocs™ were designed and refined in Australian schools to suit a curriculum that encourages student design and creativity. This does not restrict them to this curriculum or geographic region. The blocks and activities support any curricula that promotes - team work, project based learning, creativity and design elements. It solidly meets a modern school early entry Technology syllabus and goes on to support any school offering secondary elective electronics.

How does the online software compliment the Ed-Blocs™?

The software has online learning modules which allow full software simulation of all the blocks. This allows for students to test their hypothesis “onscreen” prior to awaiting their turn to try it for real on the blocks. In this way the product use is extended beyond the classroom and to cater for larger classes.

Will there be additional activities and more curriculum mapping carried out?

Ed-Blocs™ is keen to develop and support the work of innovative, forward-thinking educators looking to inspire students to greater creativity and thinking. If schools are going to embrace the product then the development team will work with the schools to create materials suited to the school’s program.

Where can I get more information about Ed-Blocs™?

Initially contact Peter Kuhle by email pgkpeter@gmail.com Peter can put you in touch with the person in your region who can best offer you the support that you need to inspire maximum creativity in your students.

Ed-blocs
"A tool for Design"
© ® trade name

Team Leader

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Team Leader

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Data Recorder

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Data Recorder

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Card Reader

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Card Reader

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Handler

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Handler

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Handler Assistant

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Handler Assistant

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© ® trade name

Results Presenter

Ed-blocs
"A tool for Design"
© ® trade name

Results Presenter

and Time Keeper

and Time Keeper

Ed-Blocs

Activity Name – Stopwatch

Activity Description – In this activity you will learn how to design a simple stopwatch.

Activity Difficulty Level – 2 (simple)

Lesson Name - Stopwatch

Lesson Short Description – This lesson uses only two different Ed-Blocs to construct a stopwatch.

Lesson Long Description - In this lesson you will use the Pulse Ed-Bloc and four Counter Ed-Blocs. Using these Ed-blocs in a simple system you will be able to firstly construct a counter using two blocs, then by adding another Counter Ed-Bloc construct a 60 second counter and lastly added two more Counter Blocs build a stopwatch.

Outcomes

TP 3.1, 4.1, 5.1

Students are taught the unique function and identifying symbols of the input Ed-Bloc – Pulse and the output Ed-Bloc - Counter. Students are to investigate these Ed-Blocs and confirm their function.

TP 3.3, 4.3, 5.3

Students are to incorporate the Ed-Blocs into a design challenge they have been set. They are then to test their design and if wrong, investigate, fix and record why. Students must answer questions related to the Ed-Blocs and the design challenge.

SYS 3.1, 4.1, 5.1

Students are to identify and explain the logic of the systems they are creating using the terms input, process and output.

INF 3.2, 4.2, 5.2

Students identify the advantages and disadvantages of particular systems and use this information to affect their design.

Overview

Students are introduced to the Pulse Ed-Bloc and investigate this Ed-Bloc.

Students answer questions related to the Pulse Ed-Bloc.

Students are introduced to the Counter Ed-Bloc and investigate this Ed-Bloc.

Students answer questions related to the Counter Ed-Bloc.

Students investigate the design challenge – To create a counter.

Students answer questions related to the design challenge.

Students investigate the design challenge – To create a 60 second counter.

Students answer questions related to the design challenge.

Students investigate the design challenge – To create a stopwatch.

Students answer questions related to the design challenge.

Lesson

Pulse Ed-Bloc

Introduce the *Pulse Ed-Bloc*. The *Pulse Ed-Bloc* is an input bloc that produces a regular series of on, then off pulses at one-second intervals. The pattern is on for 0.5 second, then off for 0.5 second.

Pulse Ed-Bloc student questions



1. What is the symbol for the Pulse Ed-Bloc?
2. Is the Pulse Ed-Bloc an input, process or output Ed-Bloc? a) process, b) output, c) **input**
3. What does the Pulse Ed-Bloc do? a) pulse randomly b) pulse irregularly c) **pulse regularly** d) pulse occasionally
4. How regularly does it pulse? a) every minute b) **every second** c) every two seconds d) every three seconds

Counter Ed-Bloc

Introduce the *Counter Ed-Bloc*. The *Counter Ed-Bloc* counts the number of times the input changes. The *Counter Ed-Bloc* registers on the “edge” of the change (pulse).

Counter Ed-Bloc student questions

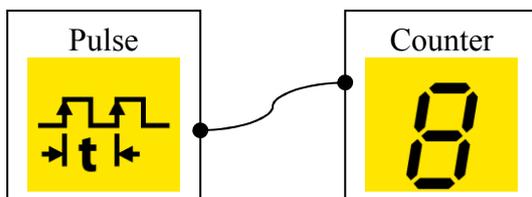


1. What is the symbol for the Counter Ed-Bloc?
2. Is the Counter Ed-Bloc an input, process or output Ed-Bloc? a) process, b) **output**, c) input
3. If the Counter Ed-Bloc is an output bloc, why does it still need an output socket? **To send the signal it reached it's final count (signal only there briefly).**
4. What happens when you use the 10 switch? **It allows the counter to count to 10, you only see 9.**
5. What happens when you use the 6 switch? **It allows the counter to count to 6, you only see 5.**

Design Challenge: To design a counter

Ask students to design a simple counter.

Have the students investigate the 6 and 10 switch.



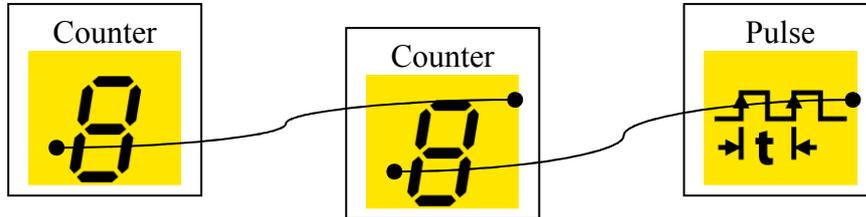
Design Questions

1. At what rate does the pulse Ed-Bloc change the counter? a) 0.5 seconds b) **1 second** c) 1.5 seconds d) 2 seconds
2. When would you use the 6 switch? **When you wanted to count to 6.**

STOPWATCH TEACHER MANUAL

- Why is it important that the pulse stays at a consistent pace? **To maintain correct time if a clock or stopwatch.**

Design Challenge: To design a 60 second counter

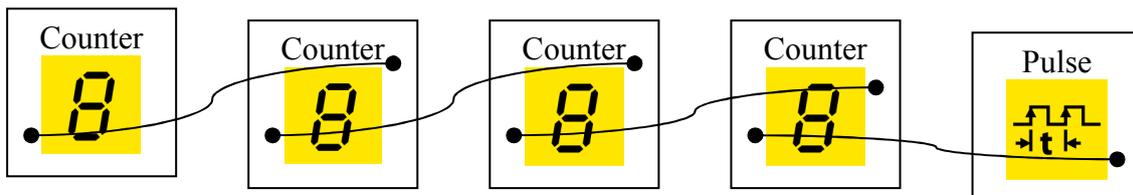


Design Questions

- Can both counters be set at 10? Why/Why not? **No one must be set a 6 and the other set at 10 so as to count to 60 and reset.**
- At what rate does the pulse Ed-Bloc change the counters? a) 0.5 seconds b) 1 second c) 1.5 seconds d) 2 seconds
- Do both counters change at the same time? a) No b) yes c) **sometimes**
- Which counter, starting at the pulse Ed-Bloc must be set at 6? a) first, b) **second**
- What order do the counters have to be in to display correctly the digits for time? **First counter starting on the right with extra counters being added to the left. First counter from pulse is least significant digit.**

Design Challenge: To design a stopwatch

Ask students to design a stopwatch by adding another two Counter Ed-Blocs to their previous design to create a stopwatch. With counters for minutes and seconds.



Design Questions

- Can we stop this stopwatch? How? **Disconnect the Pulse Ed-Bloc.**
- Can we reset the stopwatch? **yes**
- Do all counters change at the same time? **sometimes**
- List some examples where this type of system could be used. **Digital Clock**